BACK IN THE USSR

What life was like in the Soviet Union

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INTRODUCTION

A hundred years ago, the October Revolution brought about the biggest social experiment ever: The Union of Soviet Socialist Republics. Since its demise two decades ago, much has been written about its origin, and its politics, economics, and history more broadly. The field of Sovietology, once highly relevant to interpreting the USSR from the West, is now slowly dying, as its great scholars retire.

Almost everything that can be said about the USSR has already been said. Since the opening of the Soviet archives and the enactment of Glasnost, it has been known that the statistics now available to the world were the same statistics used by the Soviet leadership themselves to plan their economy. Long gone are the days of statistical trickery, common in Stalin's times.

But there remain some historical questions that are of great interest to a curious reader. This book attempts to highlight some key aspects of the USSR to answer those questions. Some of those questions are probably familiar: How good was life there? Were there queues to buy food? How good were Soviet appliances? How advanced

and powerful was their military? How did the USSR industrialise so fast? Was there poverty, unemployment, or inequality?

As mentioned, this book is explicitly not a general survey of the state of the art of Soviet history. While the content itself is state of the art, it is deliberately not general in scope. Each chapter addresses one question and one question only, drawing on every source available to answer it.

This book is accessible without prior knowledge, but it will be better enjoyed if the reader has previously read some introductory material. I recommend Red Plenty by Francis Spufford. While not academic, it does a good job in conveying the bigger picture. Broader in its scope, and extremely detailed, I recommend The Socialist System: The Political Economy of Communism, by János Kornai to understand how a socialist regime, in generic terms, has worked historically.

For textbooks about the history of the Soviet Union in general, I suggest The Rise and Fall of the Soviet Economy (Hanson), and Economic History of the USSR (Nove). [1]

This book is divided into two sections. Section One is dedicated to the (in Marxist parlance) "base" of the USSR: its productive apparatus. Section Two explores some topics about its "superstructure", such as food consumption or healthcare.

Due to the breadth of the topics covered, it is only possible to provide a relatively brief overview of them, and so some chapters may feel too dense for some readers. At the end of the book is a bibliography, so the interested reader can expand upon the themes explored in the book, and find some claims in their proper context.

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1 More sources are available here: https://pseudoerasmus.com/economic-history-books/

GROWTH & PRODUCTION IN THE USSR

CHAPTER 1: GDP GROWTH

Does the chart overleaf tell us that the USSR was a prosperous economy or that it was not? At first sight, without more information, one might conclude that communism did indeed work: that it raised growth above the stagnation suffered during Tsarist times, and that the transition to capitalism was painful and perhaps even not worth it.[2]

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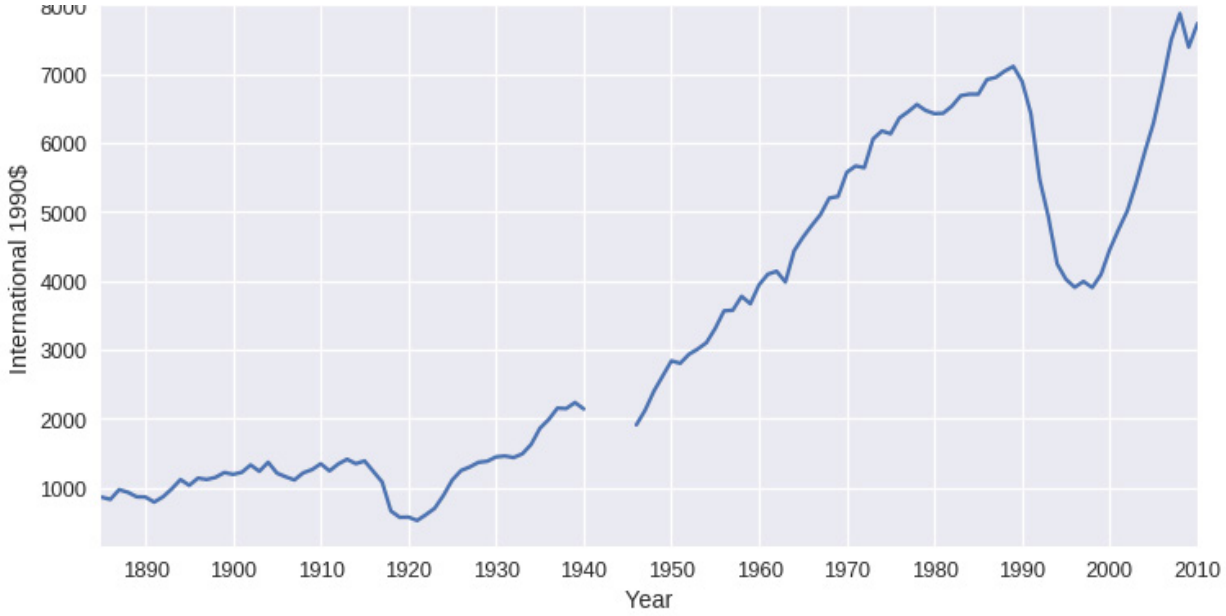
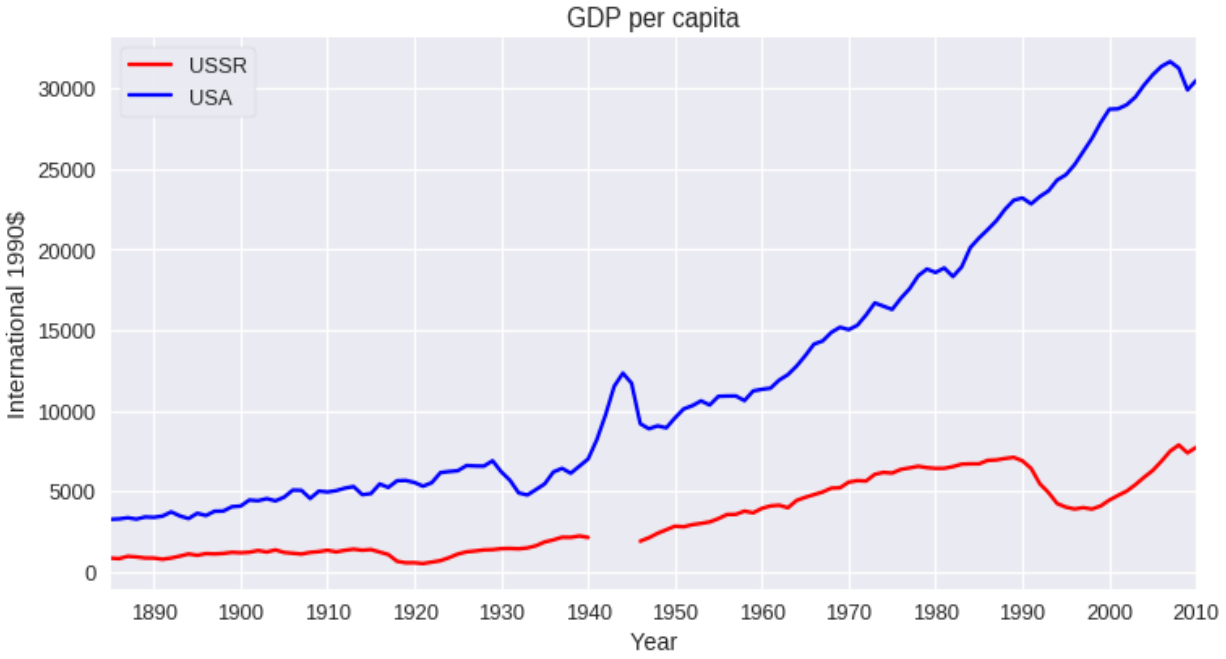
2 In Marxist theory, the economic system present in the Soviet Union was technically socialism, not communism. Socialism involves the existence of a State that, in theory, channels the interests of workers and works towards building communism proper. In "true" communism, there would be no State. However, for our purposes, we will use communism and socialism interchangeably to refer to the economic system of the USSR.



But we cannot consider this information in isolation. We need to compare the USSR with how other countries did. The comparison that immediately comes to mind is with the United States.

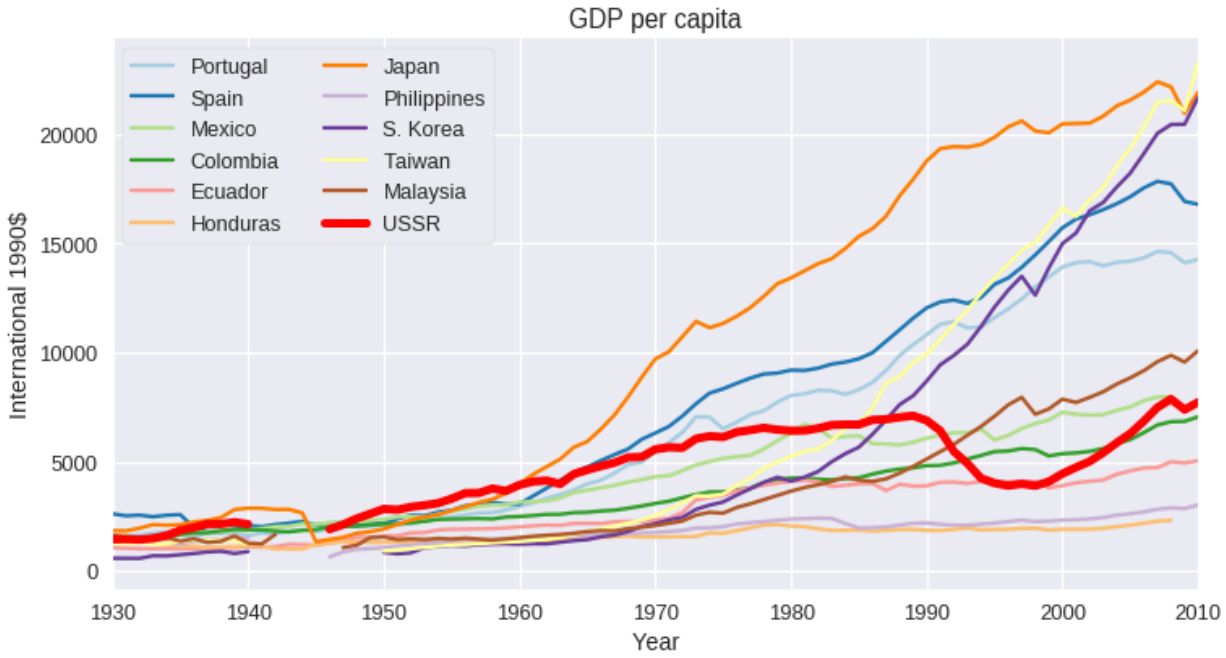


Things immediately look different: what seemed to be strong growth may in fact be subpar growth.

But pre-USSR Russia never really competed in the same league as the US, and the gap

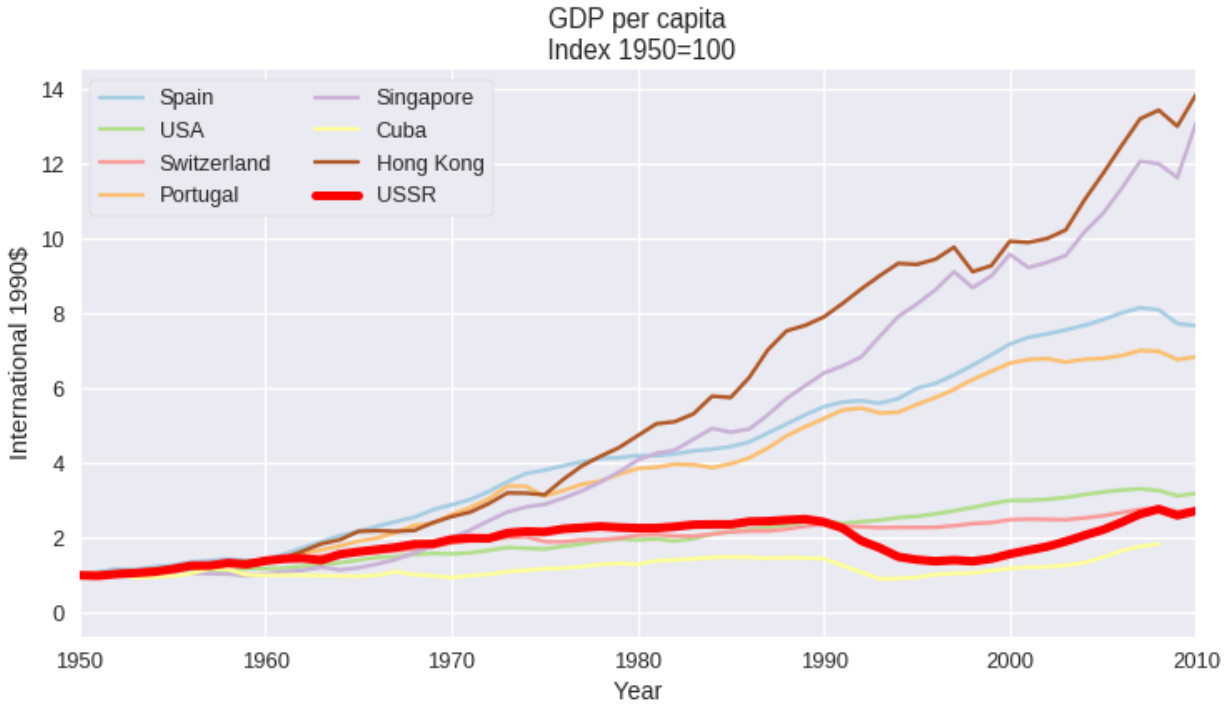
between the two didn't became narrower after Russia became the USSR, even when considering that poorer countries tend to grow faster when they industrialise.

The comparison with the US is useful to see how much of an economic power the USSR was, but if we want to look at rates of economic growth, we have to look at other countries: developed countries grow at a slower pace, solet's instead compare the USSR with other countries that had similar incomes in 1930. The USSR doesn't do particularly well in this metric either. Initially it did better than many countries, but by the 70s it was being outpaced. By 1990, the average income in the USSR matched that of Malaysia, well below countries like Spain and Portugal.



We can also take another year, like 1950, to avoid WWII effects, and use indexed data, but this doesn't change the picture much. By doing this, we divide the incomes of all countries by their incomes in the base year to make them equal, and measure how much they grew from that point. This metric, however, is not robust to events such as wars, as GDP tends to collapse and then quickly rise after a war. If one starts to measure GDP immediately after a war, one will see, in comparison with countries that were

not at war, an incredible growth that will bias the entire time series.



Above I compare the USSR's performance since 1950 to various other countries:

- the US and Switzerland, both developed countries over the entire period;
- Singapore and Hong, both unusually fast-growing economies;
- Spain and Portugal, both countries that industrialised after WWII;
- and finally Cuba as another socialist economy.

This comparison illustrates the fact that in general, countries with a higher GDP per capita tend to grow more slowly than developing economies. Compared to this expectation of "catch-up growth" from a lower level of development, the USSR seems to have lagged (as does Cuba).

There are a variety of reasons why poorer countries tend to grow faster:

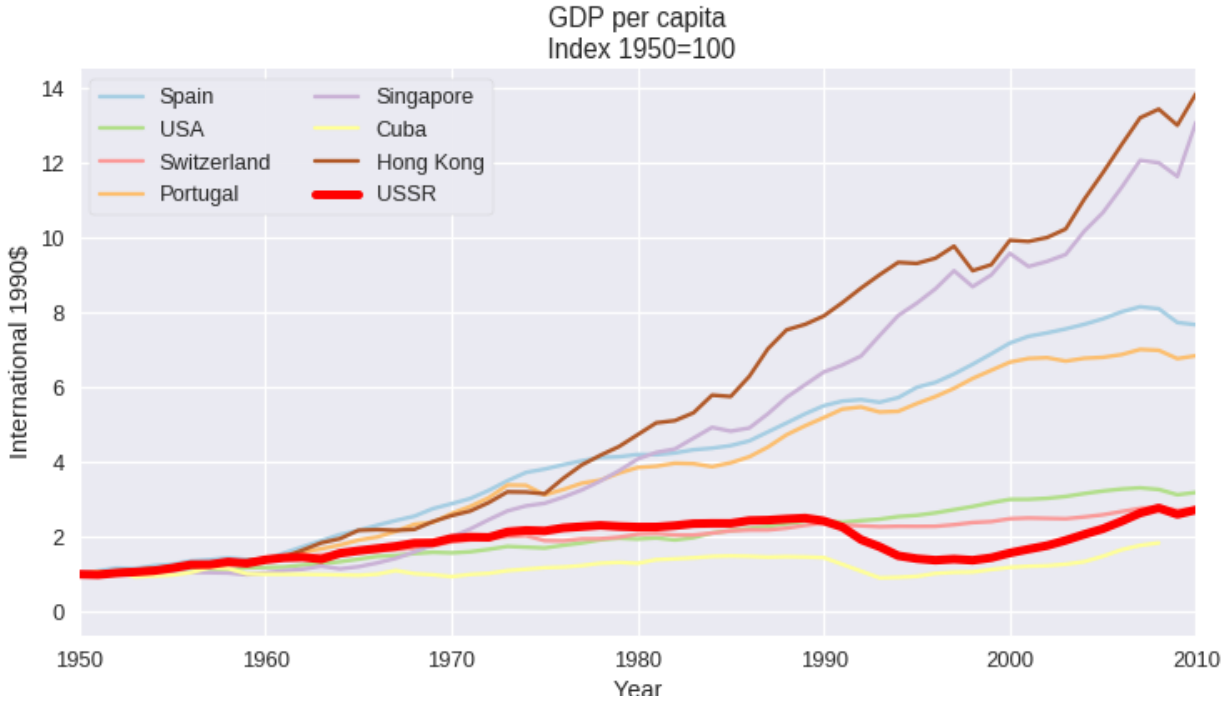
- Initially, there are lots of efficiency gains to be realised, such as building infrastructure, improving the rule of law, and transitioning from agriculture into

industry.

- In addition, countries that are not at the frontier of technological advances benefit from what has already been researched.
- At some point, a country exhausts its catch-up growth, and from there on its growth will be determined by its institutions, and capability for technological advancement.

These charts are hardly conclusive. It could be argued that GDP does not really measure what we care about when we measure GDP (i.e. economic welfare across society or averaged per person), or that we have not considered inequality. We will discuss these other factors later in the book.

There is, however, a book that seems to contradict what the charts above suggest. This is Robert C. Allen's From Farm to Factory, where we find this chart:



In the period Allen looks at—1928 to 1970— we can clearly see that given its initial

level of economic development, the Soviet Union grew as we would expect it to. But honing in on this very specific time period may be misleading: this relationship is far less clear for differently-chosen eras. Consider for example 1950 to 1989:

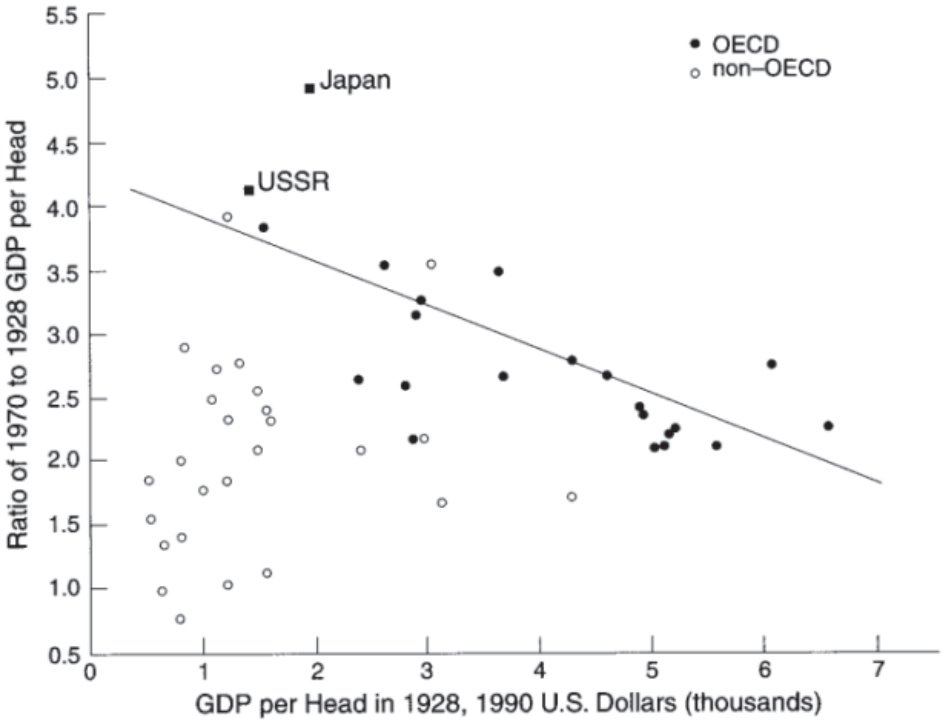
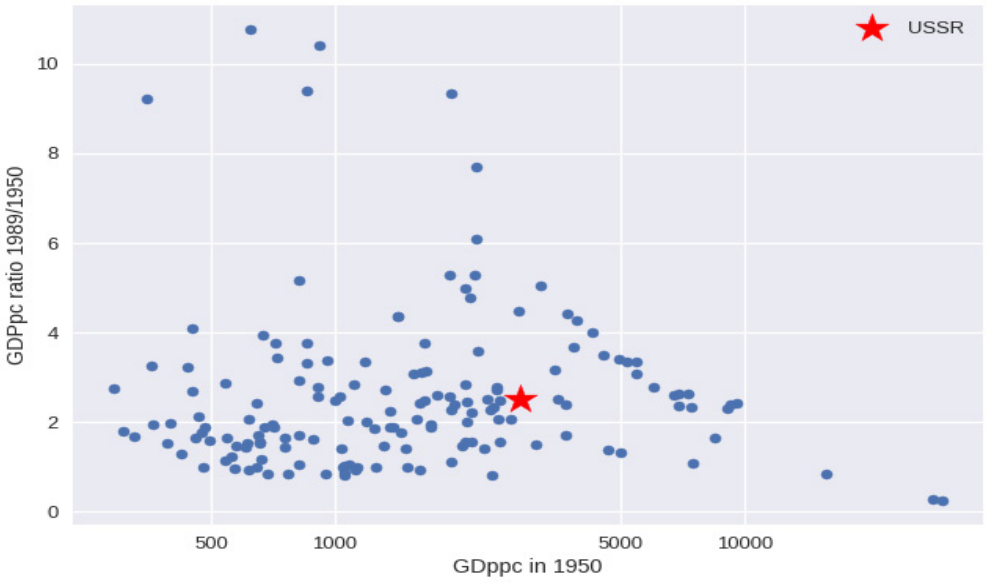


Fig. 1.1. Economic Growth, 1928–70. *Source*: Maddison (1995). Turkey is classified as a non-OECD country.

Or 1928 to 1989, just before the fall of the USSR:



Allen did not choose 1928 and 1991 because of cherry-picking: he has good reasons for

choosing those dates, and we will see why later. But it does seem like his analysis, if true, applies only to that period.

The remarks above apply to GDP considered alone, and as measured by Maddison. This is a measure of GDP that tries, as far as possible, to be comparable across time and countries. But economic growth obviously does not depend only on the initial level of GDP, so the chart above is not the whole story.

The Soviet Union was notorious for investing a large share of its GDP, diverting far more away from consumer goods than Western capitalist countries, and the more you invest the faster you tend to grow, other factors equal. They intentionally sacrificed consumption to grow faster, as well as boosting education quite early, and so by 1960 they had high literacy.

In 1995, Easterly & Fischer tried to account for these factors, studying what sort of growth would be expected in other countries if they were able to restrict their consumption and expand education so rapidly. In fact, the average growth rate in the USSR for the period 1960-1989 was 2.36% (vs 2% in the West). But the growth they "should" have achieved with such heavy investment and such rapid expansion of education was 4.7%! In other words, the economic system itself seems, on this simple analysis, to have worsened the rate of growth by around 2.3pp, or half. If the Soviets hadn't been able to control consumption and education so effectively from the centre, their growth performance would have been substantially less flattering.

To summarise the simple sketches above:

- Growth in the USSR seems fairly rapid considered alone but compared to the USA it was very weak—far from catching up, the gap between the two widened.

- The choice of base year matters a lot. After wars countries tend to grow extremely rapidly.
- Poorer countries usually grow faster than rich countries, and other countries in similar situations to the USSR before communism seem to have experienced this, but it did not. This is a mark against the USSR's achievement.[3]
- Other poor countries achieved this catch up mostly without the growth-boosting effects of rapidly expanding education (and literacy) and controlling private consumption to keep it low and investment high. Taking these into account, the USSR's performance looks even less impressive.

In recent years, the debate about the merits of the USSR growth model has tended to focus not on the post-1970 period (known as the Brezhnevian stagnation), but on Stalinism. Stalin notoriously took a country of farmers and left it as a nation capable of defeating most of Germany's Wehrmacht. It is argued, then, that even if the USSR began to falter and lag later on, there are lessons to be learned from central planning as practiced under Stalin. In the next chapter, we will study this.

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3 It is true that the USSR grew faster than the US for many years. Samuelson notoriously predicted that at such rates, the USSR would have outpaced the US by 1984 or 1997. It is only when taken as a whole that the slow growth in the USSR becomes apparent. You can read more about this here: http://marginalrevolution.com/marginalrevolution/2010/01/soviet-growth-american-textbooks.html

CHAPTER 2: FROM FARM TO FACTORY

In 1922, the young Soviet Union was a poor country recently afflicted by a civil war and a revolution. After the Second World War, the USSR was a superpower capable of stopping Germany's Wehrmacht in its tracks.[4] What happened?

Given the title, it won't come up as a surprise that it had to do with Stalin. This chapter will analyse the impact of Stalin on Soviet growth, beginning with a presentation of some statistics regarding Stalin's achievements, then some theory on how that growth was achieved, and finally some discussion. We will begin by drawing from Robert Allen's From Farm to Factory, and move on to later work. This chapter is best enjoyed if one has read the original book; a detailed summary can be found in Allen (2005). I summarise it even more concisely below.

FELDMAN'S MODEL

In a nutshell, Stalin's approach is summarised by what Allen calls Feldman's model: investing in capital goods now leads to a greater availability of consumer goods in the future, even when that may lead to a drop in consumer goods today. It is just an extension of the fact that there is a trade-off between consumption and investment, and that investing typically has positive returns. Thus, if you can use more of your land, labour and capi-

4 Truth be told, one also has to take into consideration the Lend-Lease programme by which the USA funnelled resources and materiel to allied states, and ask what might have happened without Soviet involvement. It is my belief that the war against Nazi Germany was winnable without the Soviet Union (the US had far more productive capacity), and also that the advance of the Soviet Union would have been severely delayed but not stopped, without the Lend-Lease programme. So, while in a way you can say that the USSR was the key reason that the allies won World War II, both in terms of resources employed, and chunks of Germany's armies defeated, we should not take this to imply that such a role was a necessity. That said, it is not my intention to take a strong position on this matter here.

tal for investment in more capital today, you must use less of it for consumer goods now. But since you'll have created more capital—more factories, machine tools, buildings, infrastructure and so on, you'll produce a much larger total, and have the option to consume even more in the future. As simple as that.

So, the issue then is how to increase those savings. In a market economy, people's decisions about their individual trade-offs yield an aggregate social rate of savings. Firms and entrepreneurs then turn that into investment by applying for loans from banks, or attempting to sell equity or bonds. In a planned economy, a national savings rate is set, and plans are issued for individuals to adapt to it.

In practice, individual adaptation meant coercing people into saving more, and in the early Soviet context "people" means peasants. For Marxists, capitalism's origin lies in the accumulation of capital and the exploitation resulting from exclusive control of access to that capital. In Marx's historical materialism, socialism was destined to take over from capitalism at a point where plenty of capital was already available. Early Soviet leaders, within their framework, saw that they had to comply with the laws of history they themselves professed to hold as true. For them, exploiting peasants was something necessary and unavoidable—it was the main source of capital in early 20th Century Russia, where industrial development was relatively primitive.

There were debates about how they could best implement the plan, and Allen doesn't discuss those in depth (Alec Nove does, in his Economic History of the USSR). In the end, the policy that won was, of course, Stalin's: the state would buy produce from peasants at low prices, and sell them other goods at high prices such that the state pocketed a hefty premium. There are some debates about the origin of Stalin's proposal. The consensus is that it originated not in Stalin himself, but in economists Feldman and Preobrazhenski,

and that the true goal of the policy was the same as the stated goal: to produce more consumer goods through building heavy industry first. Some conflicting evidence suggests Stalinism based much of its commitment to building up heavy industry on the goal of military build-up, not some eventual switch to a high consumption USSR (Kontorovich, 2016). In this case, Stalinism's aim would have been militarisation, not attempted long term welfare maximisation. But whatever the source, the result was the same: high investment in heavy industry and low consumption.

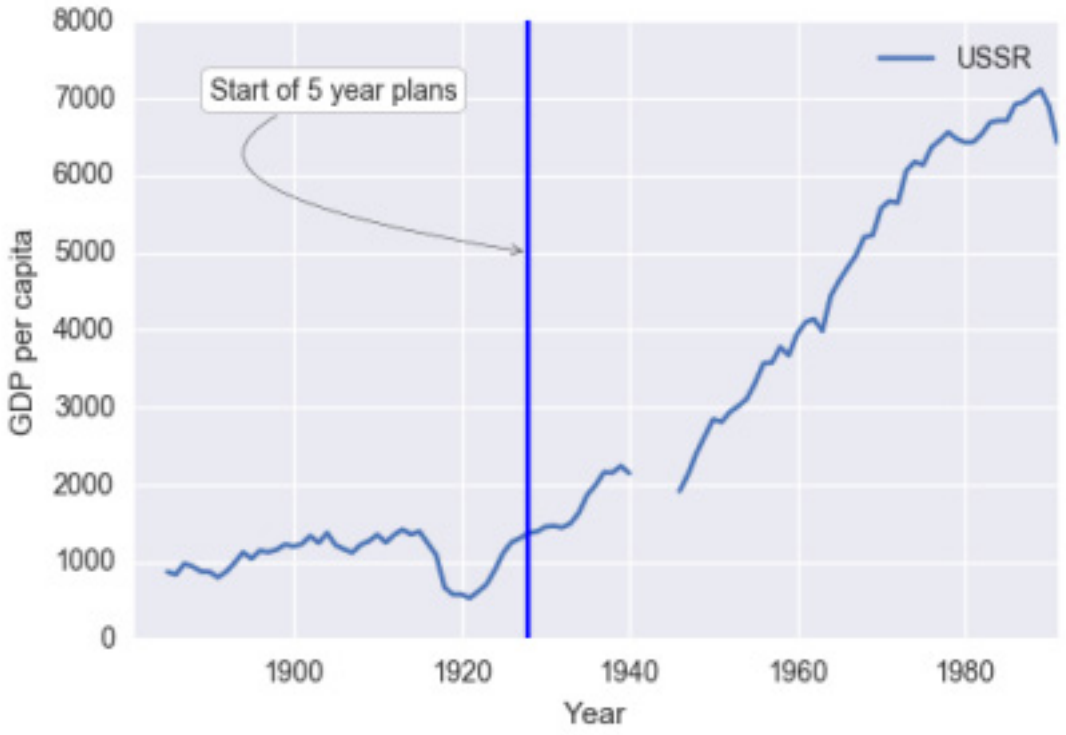
Before further Analysis, I will foreclse on interpretation that some have made of Allen's book: that Stalinism works in the sense that it is superior to the system now present in modern developed economies. This is false, and Allen does not endorse this. The claim made in the book is more specific: that compared to the alternatives in the institutional setting of 1917 Russia, Stalinism delivered higher growth. Stretching the claim, one could say that it could be reasonably deduced from Allen that Stalinism is a viable *development* model thefor other countries, especially in the Third World, that face a similar set of circumstanaces as the late Imperial Russia.

GDP GROWTH

In the previous chapter, I made some introductory comments regarding GDP growth. Here I pick up where I left off: I include a few more plots to complement the ones there, and I put Allen's regressions through some sensitivity analysis. Shortly put, the issue with these analyses of Stalinism are that they begin just after a war, and GDP growth is faster after wars, not because of the war itself, but because the war has disrupted the economy and people still remember how it used to be and can easily move back to that previous

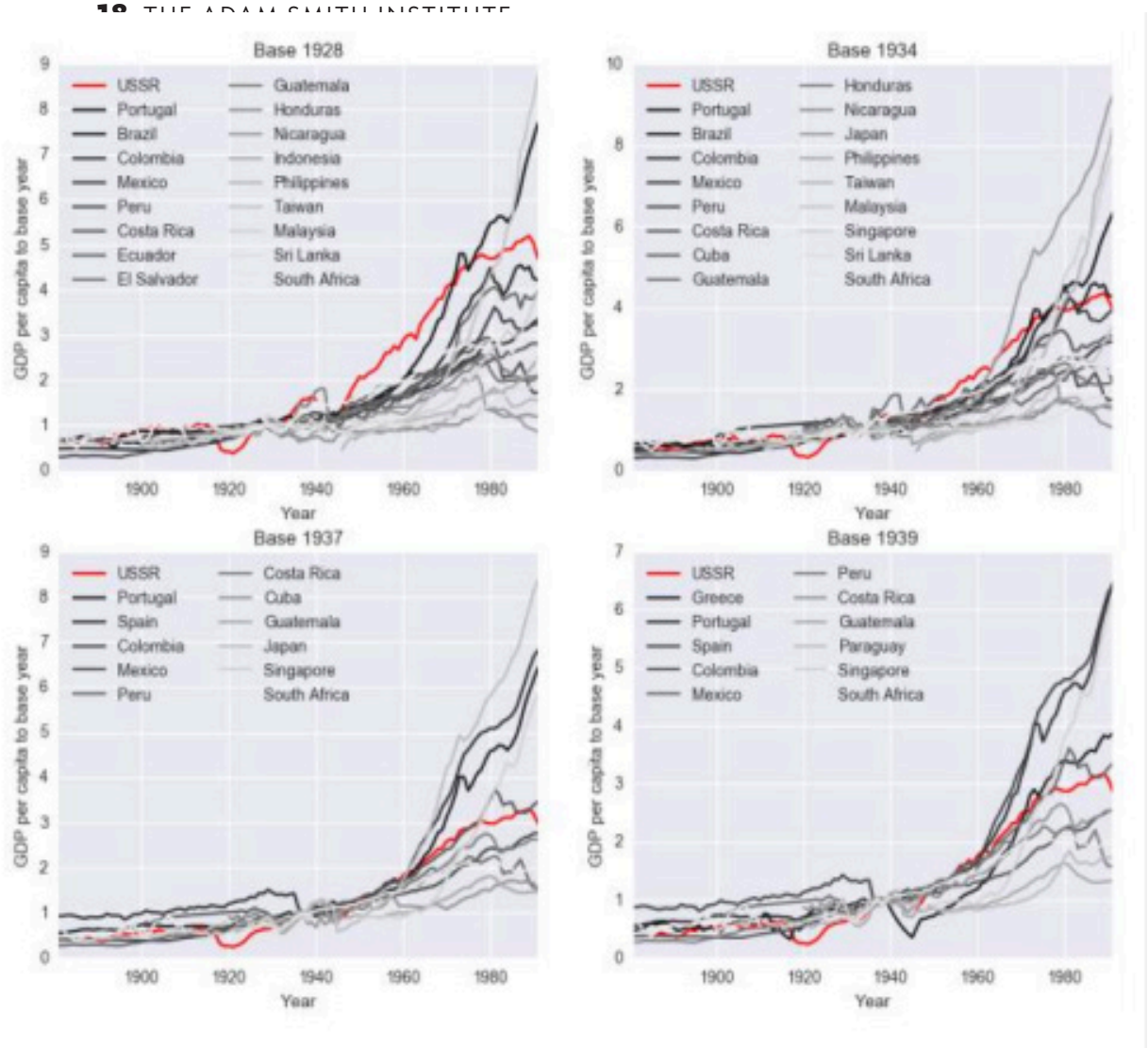
configuration.[5]

First, the most obvious and needed chart:

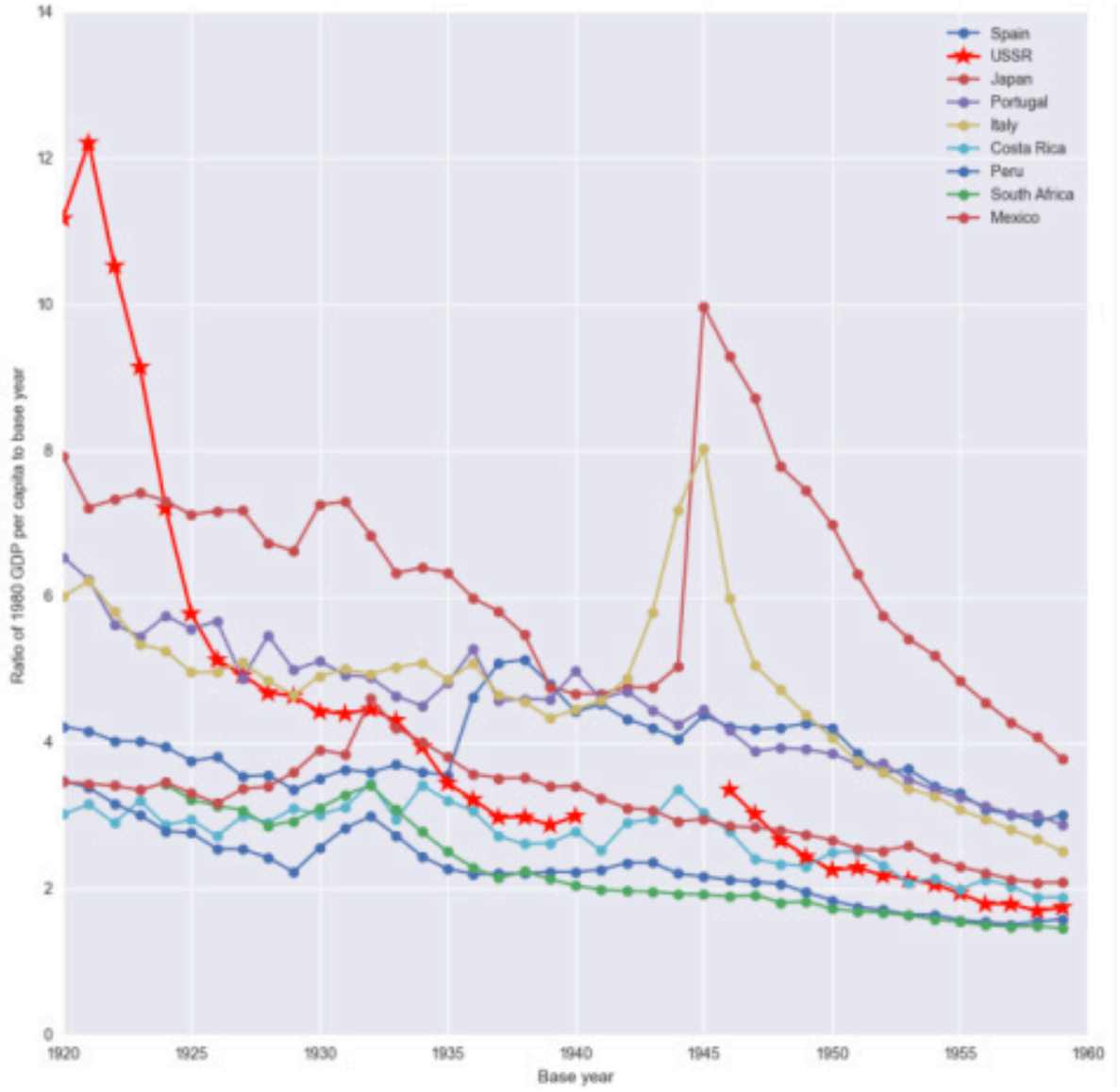


Eyeballing the chart suggests that the USSR only got back onto its pre-First World War trend by the mid-to-late 1930s. By contrast Allen's regression (in the previous chapter) shows that Soviet GDP growth was fairly strong between 1928 and 1970, including some of that recovery. The four following charts show just how sensitive those sorts o calculations are to time period included and base year.

5 Think of it in terms of GDP vs potential GDP (lthough I think that the concept does not apply during recessions). Recessions mean that the capital structure of an economy has to readapt; there is no previous state of the economy that is stable and achievable after a recession.



In these charts we compare the USSR's economic performance with countries starting from similar levels of development—those with a GDP/capita within $600 of the Soviet level at the base year. Contrast the picture you get from the base 1922 or 1928 charts with the other two, with the base set just a few years later. One's takeaway impression of USSR growth success is very different. Just look how the ratio of 1980 GDP/capita to base year GDP/capita changes across the charts.


Spain
USSR
Japan
Portugal
Italy
Costa Rica
Peru
South Africa
Mexico
Ratio of 1980 GDP per capita to base year
Base year
0
2
4
6
8
10
12
14
1920
1925
1930
1935
1940
1945
1950
1955
1960

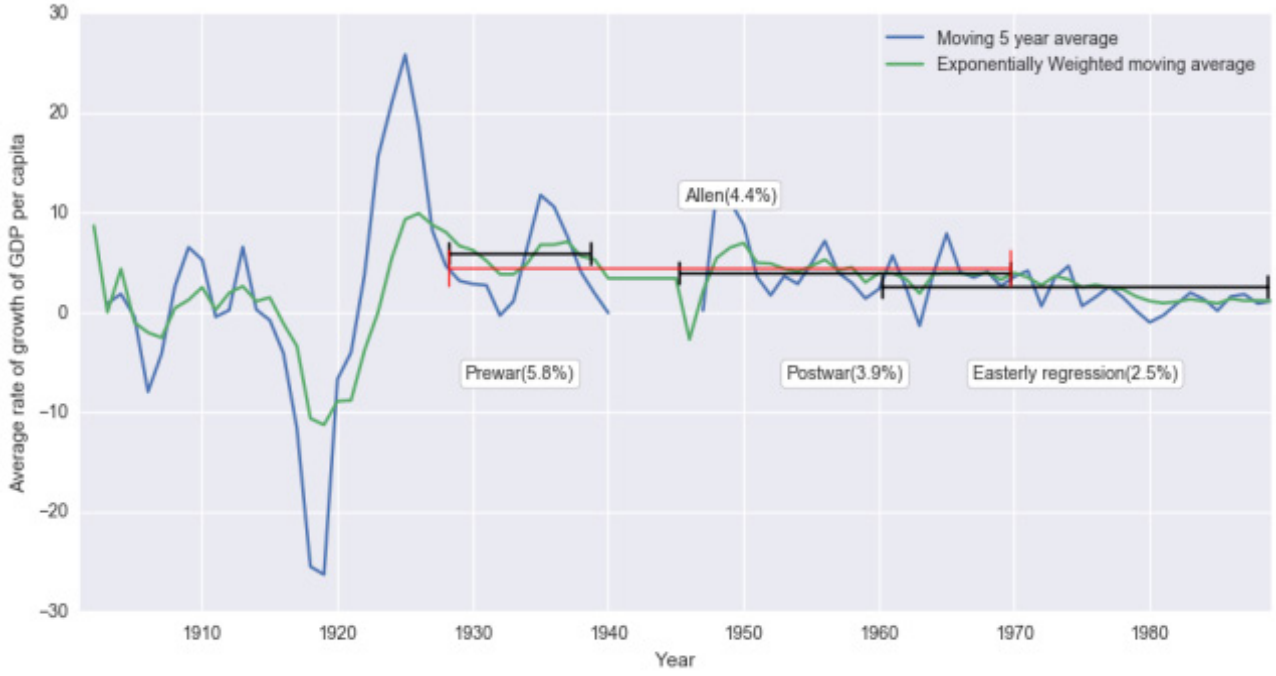
One of the most intuitive ways of assessing growth is comparing growth against one of the richest and most developed countries. They represent the frontier of achievable wealth in a given period, because they have implemented the most advanced technology in their shops, factories, infrastructure, and training. In this case I chose Switzerland for my comparison rather than the US; Switzerland remained neutral during the wars and thus its GDP growth is more stable than the US's.

In the chart above we hone in on 1928 directly, when the USSR started its hallmark communist economic policy: the five-year plans. Compared to countries that had a similar GDP/capita in 1928, the USSR did quite well. Someone might not even wonder whether the USSR was a failure.

Which countries should we use as a comparison? Should we compare Russia to western countries, to Third World countries or neither? It is a complicated question. Compared to Third World countries it is mostly a success; compared to Southern Europe or Asian "Tiger" economies it is a clear failure.

Bill Easterly (1995), as we saw in the previous chapter, tried to resolve the issue by slightly

changing the question and recasting it as a problem of running a multivariate regression. Given an average country of its characteristics, where would we expect the USSR to be? And where in fact is it?



So, the reconciliation of Allen and Easterly is simple: both could potentially be right. They covered different time frames, and Russia's optimal growth path could in theory have been Stalinism at first, followed by gradual marketisation in the 60s or 70s.

A final remark: in Easterly's regressions, the most important explanatory variables for growth are secondary school enrolment and investment/GDP. Both are easy to control coercively, which is what was done. But perhaps they would have been much lower without communism. Perhaps communism works precisely *through* high forced investment and high forced educational enrolment. This is Allen's argument: without communism Russia would never have invested for the future, and they would have bumped along with slower growth. A secondary issue is whether it was worth it in terms of welfare. It is one thing to decide to save and postpone your own consumption; it is quite another for the government

to make that decision for you, even if that increases social welfare in the future[6].

There is some counterfactual work to do regarding this: how would the Tsarist economy have grown in the absence of the revolution?

BOOK REVIEWS

After the publication of From Farm to Factory, a number of economic historians published reviews of it. It is then an obvious place to begin our examination of the arguments. Here I will discuss those of Michael Ellman, Paul Gregory, Mark Harrison, and Robert W. Davies. It is important to review prior literature to see how Allen's book was received by renowned experts in the field. In the case that the book's conclusions were broadly accepted among most experts, it would be highly plausible that he is right. But in this case, most scholars have tended to reject Allen's reinterpretation, granting that it is a thoughtful and well argued work: something with which I agree.

Ellman (2004) is quite sceptical right from the beginning of his essay, noting that Allen goes against established knowledge (the book is called a *Reinterpretation* of the Soviet Industrial Revolution for a reason):

> *On many issues, Allen's conclusions are quite at variance with the opinions expressed in most current textbooks and with what is currently taught to students throughout the world. Allen sees Soviet industrialization as a success story with many positive elements ranging from a rising standard of living to rapidly increasing urban employment and an efficient agricultural sector.*

First, he questions Allen's dismissal of the possibility of post-Tsarist growth under a non-

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6 That is, if I'm forced to save more now, plausibly the future me will enjoy more things. But that will come at my expense. Even if higher growth is achievable by coercively increasing investment, that may not be what people want (although it might be what unborn people would want if they were asked!)

communist regime, pointing to a region of the Russian empire that actually did that: Finland. He also says that absent the factors that supported growth pre-1917 (protectionism, railway building, exports of primary products), the Russian economy could have still advanced, as the United States, which at some point was in the same circumstance, did.

Ellman also criticises Allen for assuming and not proving that Stalin followed Feldman's model for designing his policies. Soviet rhetoric was often at odds with reality. As I pointed out above, Ellman might well be right here, but that's not necessarily relevant in assessing the Stalinist system from the perspective of economic outcomes.

Agricultural productivity: Allen compares US and Canada (1918-1922) with Russia (1913) and concludes that productivity was about the same. But the 1913 harvest was particularly good, says Ellman, overstating Russian output. He ought to have chosen a longer timespan for the comparison, rather than just one year.

Fertility: Stalinism helped accelerate the demographic transition. Fewer children means fewer dependents per working age person, a "demographic dividend" that typically occurred at the same time that living standards started rising in most Western countries. Allen's regression implies Stalin is responsible for less than half of the fertility decline. The other half was probably due to the Second World War.

Standard of living: Allen says the standard of living in the urban and rural areas grew in the 1928-37 period (accepted historiography holds that only urban consumption increased). This is based on a calculation of calories that differs from more accepted values, without giving an explanation for the discrepancy.

Rural per capital consumption: Allen says that it was slightly higher in 1938-39 than in 1928. The estimate comes from a decline of rural population, and estimates for harvests

in 1937-40, not from surveys, and he admits that the data for those years is probably an exaggeration.

> *Furthermore, nowhere does Allen mention the bad harvest of 1936 and the resulting food shortages, consumption of bread substitutes, malnutrition, malnutrition-related disease, and starvation in early 1937. The NKVD reports of "food difficulties," migration from the most affected areas, severe malnutrition, and deaths from disease and starvation in early 1937 form an ironic commentary on Allen's claims about rural consumption in that year.*
>
> *Moreover, he does not compare the proportion of statistical agricultural output that rotted or was otherwise wasted in the late 1930s with the same figure a decade earlier. Inferring consumption levels from production data is problematic at the best of times. It is particularly so when there are qualitative differences between the situations being compared. Implicit in Allen's argument is the idea that the efficiency of the distribution system was the same in the late 1930s as it had been in the late 1920s. According to Osokina, however, "the state's trade network [in the 1930s] was underdeveloped and regionally uneven. It could not compete in efficiency with the private trade of the NEP period…. As a result, socialist trade featured stoppages, poor and insufficient assortments, long lines and large losses. […]*
>
> *For example, the "high living standard" years of 1937-38 were also the years of mass state terror against the population. Excess deaths were approximately one million.' More than a million people were sent to the gulag (only some of whom were victims of the "mass operations"). Close relatives of the victims (spouses, children, parents) were also adversely affected. In addition, about two hundred thousand people were deported. Are these facts irrelevant in analyzing the "standard of living" in 1937-38? Consider the situation in part of the USSR a few years later. During the occupation from 1941 to 1943, Ukrainian rural inhabitants seem to have had higher per capita food consumption than in the preceding Soviet period (partly because the occupiers relaxed the restrictions on their private plots and partly because of the increased possibilities for the informal acquisition of agricultural inputs and outputs from the large farms).16 To claim that their "standard of living" was higher during the occupation period would be odd, though, and would ignore their socio-political (mis) treatment by the Nazis. The deportation of rural Ukrainians to Germany, assuming rural overpopulation, would have raised rural per capita consumption in Ukraine. Did it also raise the "standard of living"?*
>
> *It is far from obvious that the Soviet rural population in the late 1930s perceived themselves as being at least as well off as they had been in 1928. The warm welcome given the Nazis in Ukraine in 1941 certainly does not indicate that. It was not only in Ukraine that the rural inhabitants do not seem to have noticed the "improved standard of living" that Allen calculates. In April 1943 a Soviet colonel reported to the general secretary of the Comintern that "on the Don and Kuban the Germans successfully ingratiated themselves with the locals … the Germans played chiefly on the kolkhozy. The dissolution of the kolkhozy was celebrated like a major holiday.*

Harrison (2004) remarks that the main mechanism through which Stalinism contributed to growth was the soft budget constraint[7]: companies under central planning had allocations of resources they could use, but they could negotiate their way to more resources if needed, and if the planners accepted.

> *Stalin's bigger contribution, Allen suggests, was to subsidize industrial employment through the soft budget constraint. This was economically rational, he maintains, because too many laborers in agriculture had driven their marginal product to zero. With wages above zero, profit-maximizing firms would not take up the agricultural labor surplus. Allen concludes that industrial profit maximization would have restricted "farm to factory" movement and left output about 20 percent lower in every year through the 1930s. Given the small gains and large suffering associated with collectivization, Allen concludes that state controls on industry and a market relationship with peasant agriculture was the best development model.*
>
> *Allen's argument is clear and careful, but in my opinion he is critically wrong on the soft budget constraint. He treats it as a mere payroll subsidy that resulted in a costless efficiency improvement. In fact, its purpose and implications went far wider. First, it grew out of the dictatorial relationship between the Bolshevik party and the economy. The Soviet authorities suppressed profit maximization and allowed soft budget constraints not to improve economic efficiency but to build a command economy and direct resources by decree.*
>
> *Second, Allen argues that in the 1930s the best model comprised soft budget constraints in industry and no collectivization. Peasant farms could have released their surplus labor to industry without loss of output while the remaining farmers would willingly have sold the food to feed them through the market. However, we do not need to speculate about what might have happened in the 1930s under these arrangements. We just have to look at what actually happened in the late 1920s. Budget constraints in industry were already becoming soft. The resulting shortages left peasants with few industrial goods to buy. With little to buy, they cut back food sales. Under these conditions price adjustment did not work; offering higher prices for food just let the peasants buy the limited quantities of industrial goods available for even lower food sales. That left Stalin with two choices: harden budget constraints and let go of industry, or bring the peasantry under his control as well. He didn't have the option to go into the 1930s with controls on industry and a free market for food.*
>
> *Third, the soft budget constraint was not just a subsidy for employment but reflected a more far-reaching willingness to tolerate inefficient behavior generally. It did permit higher employment and output in the short run. But by eliminating the automatic punishment of inefficiency it also created incentives that were highly adverse for effort, allocation, and technology. Stalin's circle did not intend these consequences. They wanted Soviet firms to keep employment and other costs low, raise productivity, and make profits. They just did not want this enough. They*

7 See http://faculty.vassar.edu/kennett/Kornai.htm for an explanation

wanted a command system more. To get one, they had to let budget constraints become soft. The result was that the rewards for productive effort and initiative in the Soviet economy faced an unequal competition with the gains from lying, cheating, shirking, and stealing.

This does not mean that some alternative was better. I sympathize with the view that Russia would have fared badly as a market-oriented food exporter in the interwar slump or the war that followed. The trouble is that Allen's analysis conveys no sense of the real price Russia is paying today for six decades of Stalinist planning, which temporarily boosted production and employment but did terrible damage to economic and civic institutions. Allen suggests that if Russia had made it through the twentieth century as a food-exporting market economy it would have remained relatively poor. But having emerged from communism Russia is poor anyway: according to Angus Maddison, average real incomes across the former Soviet Union were only two thirds of the Latin American average in 1998, compared with rough parity in 1914.

The final part of Allen's argument concerns what went wrong in the long run. The Soviet economy was date-stamped "best before 1970." The problem is why, if everything was so good until then, it turned out so badly after that. Allen suggests that once the "farm to factory" movement was complete, the strengths of the Soviet economy became its weaknesses. The soft budget constraint stopped industry from adapting to labor shortage and rising energy costs. Centralized plans focused on raising energy production rather than cutting consumption. Many have seen this as an era in which plans became increasingly ineffective. Allen's view is the contrary: "the plans were implemented; the problem was that they did not make sense" (p. 211). As misallocation worsened the economy stopped growing. There is a lot of careful analysis and interesting data about investment allocation. To support his diagnosis Allen must downplay the role of incentives. He suggests that collective agriculture was "not inimical to productivity growth" (p. 174); in industry the "disincentives to innovate may not have been as strong as usually believed" (p. 208); in general, the Soviet economy declined not because of "incentive problems" but because of "a failure of imagination at the top" (p. 211). I will need more persuading, however. This fascinating book contributes to the long tradition of seeking a transferable development model" for poor countries in Soviet historical experience (p. 4). The problem is that this model is historically inseparable from dictatorship.

R.W. Davies (2004) agrees with Allen that growth under Tsarism wouldn't have continued, but thinks that perhaps under a different system (liberal/social/peasant democracy), it would have. He then doubts Allen's analysis of growing standards of living during the 1930s, and like Harrison he doubts Allen's optimal Stalinism (that is, soft budget constraint for industry, and free market exchanges with peasants instead of collectivisation) would have worked. He seems a bit more willing to believe the overall story, but is still broadly sceptical.

Paul Gregory (2004) agrees with Allen in that the stagnation of the USSR was due to bad production plans being followed, not due to an incentive problem. He does not seem optimistic about the unfolding of a proper academic debate and engagement with the book, as the number of scholars who would have had an interest in it have dwindled over the years. This very own chapter attempts to summarise what has been said so far, and tries to make a few novel points, but it may still take years for the field to reach a consensus regarding Allen's arguments.

Gregory also questions some of the assumptions that Allen made in the model he simulates: that labour was allocated between heavy and light industry to equalise marginal rates of returns (reasonable for a market, not so for central planning), and that—possibly—consumer goods markets were cleared with prices.

Allen also does not carry out a sensitivity analysis to see how variations to the underlying data changes his predictions. A negative effect of forced full employment through the soft budget constraint was precisely that workers had to be repressed and coerced into working as the state demanded (as I will discuss later). The problems the forced translation of labour from farm to factory caused with discipline are not incorporated in the model.

He also finds agreement with Hayek and Mises' explanation of the fall of the Soviet Union. Where Allen locates this fall in poor decision making, Hayek-Mises, and Gregory, see it as a systemic failure at acquiring the necessary information to plan properly, generating poor decision-making.

Finally, he discusses Allen's argument that without Stalin, extrapolating Tsarist growth to the present, Russia would have been 22% poorer than the Soviet Union by 1989. He thinks that had an institutional change happened in Russia, growth at German levels would have

been possible. And even if the argument is accepted in full, it could still be the case that a market alternative would have been preferable: he cites research indicating that consumers would sacrifice 12-15% of their income to get in exchange the possibility of choice in a free market, and that during the transition away from central planning, many sectors in the old economy collapsed, failing to pass the market test. Thus, a raw measure of Soviet GDP (based on publicly available Soviet statistics) wouldn't be directly comparable to that of the West, as one would have to adjust for the lack of choice, and a wider discrepancy (in quality and quantity) between the products being produced and the products being demanded.

I would add that comparisons of GDP per capita do not directly reveal citizen welfare. To get closer to welfare we would need to discount investment, which benefits future generations at the cost of lower living standards today[8].

TSARIST GROWTH

While I won't engage in a full historical counterfactual of Russia without communism, I will point out something that Allen seems to have overlooked. Allen extrapolates the growth of Tsarist Russia from 1985 data for 1885-1913, reporting that the Russian economy grow an average 1.7% per capita annually. My value for that same period with newer data is 2.1%, which, had it happened, would have been enough to keep up with what communist Russia experienced historically. But the important thing here is that once again the year we choose for our comparison matters a lot.

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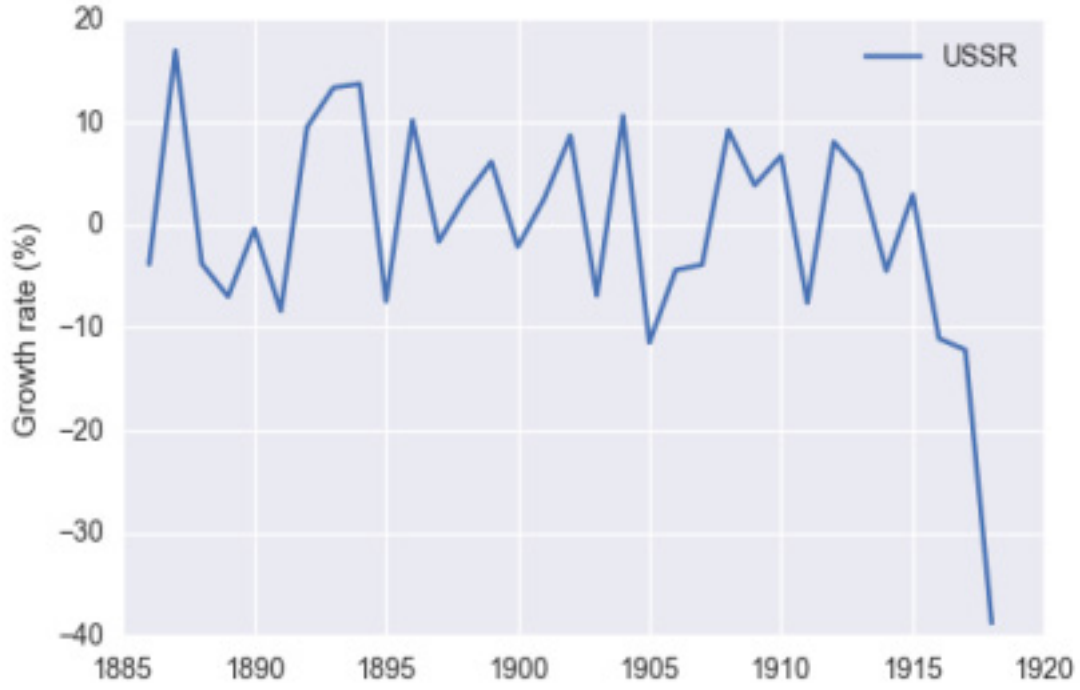
8 And military spending, but that was a bit more of an external necessity given the geopolitics of the Cold War.

We begin by looking at the USSR's annual growth rates over the period:



From annual rates we can infer an index of GDP per capita over time:

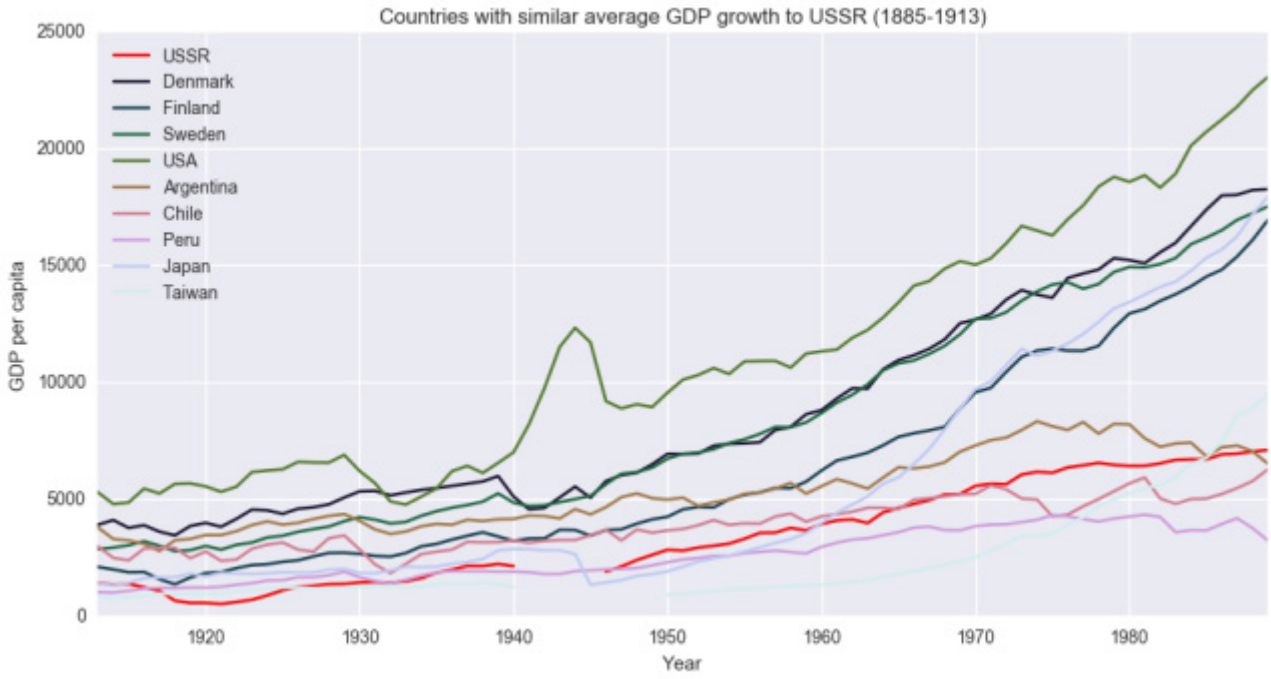
Considering more modern data, Tsarist Russia would have indeed kept pace with the Soviet Union, absent the revolution, had it merely kept its rate of growth[9]. Even as a mostly peasant-dominated agrarian economy with a slow move into industry, and without a

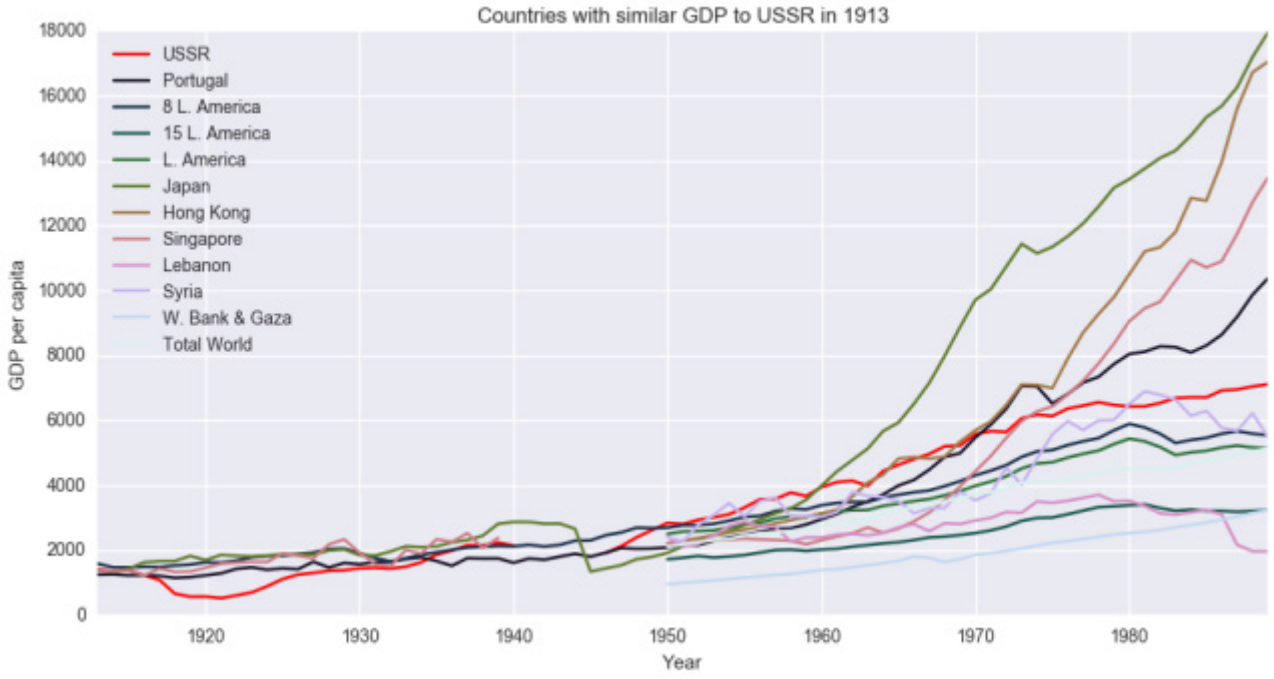
9 We include here the years 1885-1913 but not 1914 or 1915 to avoid biasing it down due to the effect of WWI.

change of institutions, or a switch to modern capitalism! However, including the first year of the First World War in the projection (the red line) shows Tsarist Russia falling behind communism in the 1950s.

These simple projections do not prove the case, but it seems a whole lot more likely than Allen claims that Russia may have done equally well under its old institutions as it ended up doing under Stalin. This question is still open. Perhaps pre-1913 growth was unsustainable without some switch. Perhaps different sets of numbers unfairly flatter, or hide, Stalinist successes—data on the Russian economy in 1885, for example, is far from complete.

My analysis tips the balance a bit towards the optimistic case. Two more charts below show a) the growth of countries that in the 1885-1913 period showed the same rates of growth as the USSR, and b) Countries that in 1913 had similar GDP to the Russia. These charts help us imagine possible futures that the USSR might have followed.





(The L. America items refer to different aggregations of LatAm countries. See Maddison's database)

RECOVERY FROM THE WAR?

I mentioned before that it's possible that measuring the growth of the Soviet economy from 1928 onwards is biased because it could still be below the pre-revolution growth trend. If so, part of the growth achieved under Stalin would just be a recovery from WWI and the Civil War.

There are two post-Allen papers that try to address this issue. The first one is Markevich & Harrison (2011), who consider this question among many they want to answer. They argue that in 1929, when the first Five Year Plan was enacted, average incomes were still below the pre-war level, and that it wouldn´t recover until 1934. But, they continue, this bar is still set too low: recovery tends to be not up to the previous level, but up to the previous trend. If we accept this, then the bar that country must clear to mark the end of the recovery process rises as time goes by. By assuming exponential behaviour, it seems likely that growth did not recover until just before World War II.

Here I use the average of the growth rates in 1885-1913 (2.06), plus the rate of growth that Markevich-Harrison give (1.74). By their average, full recovery happened around 1937. By mine, not before WWII.

Wheatcroft (2009) says Allen's analysis is *extremely* optimistic. Among other things, Wheatcroft points to the fact that Allen under-estimates food consumption in the pre--revolutionary era by 15%, and consequently overestimates Soviet improvements[10].

10 Allen seems relies on FAO data for his calories, something that will be touched upon in the chapter on food consumption. But this doesn't affect his argument, as my suggested adjustment would only drive the whole series down, so the rates of growth are unaffected.

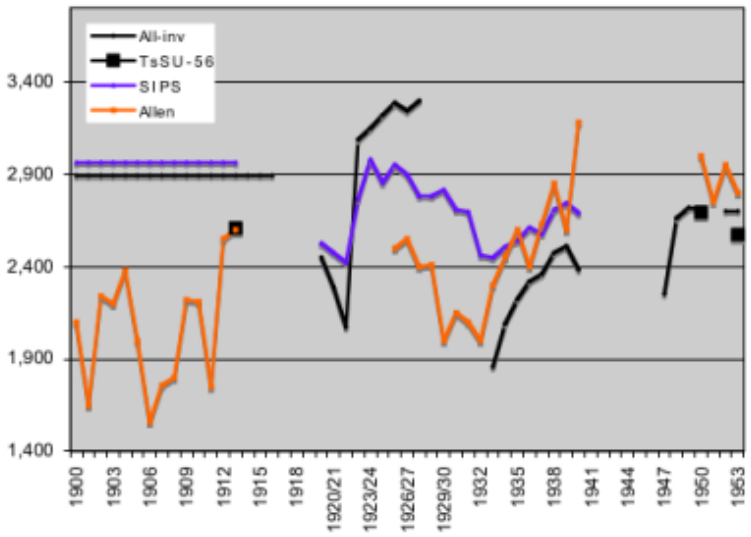


Fig. 2. Food consumption data in kcal per person per day estimates calculated from balance data compared with direct investigations. *Source:* see Appendi table 2b. *Note:* All-inv refers to an aggregate of the direct investigations of workers and peasants food consumption see Fig. 4a above. The pre-WW2 data ha been aggregated on the basis that peasants were 70% of the total in the 1920s, 60% in the early 1930s, 55% in the late 1930s and 50% in the late 1940s an early 1950s. TsSU-56, are the official figures published in Soviet statistical handbooks from the 1950s SIPS data refers to data initially published in SIPS no. and 2, Birmingham. These data include a prerevolutionary indicator for the average period 1900–1913.

Here TsSU-56 refers to official Soviet figures published in 1956, and SIPS refers to the Birmingham SIPS (Soviet Industrialisation Project Seminars) data, compiled before nutritional surveys were available. Those take Soviet data, and then apply corrections to it. Finally, All-inv is data from nutritional surveys, and taken to be the best estimation. Wheatcroft disagrees with Allen about pre-civil war data:

> *[That in pre civil-war times was Allen says] It is argued that Soviet nutritional surveys were the best in the world in the 1920s, and that remnants of this tradition remained throughout the 1930s. Contrary to the recent claims of Professor Allen nutritional levels, measured in calorific consumption, fell from the pre-revolutionary period to the late 1930s and only began to rise in the late 1950s. (Wheatcroft 2009)*

Here's Allen initial 1928-1970 plot[11], (that we saw already in the previous chapter) plus a 1928-1989 plot for the same countries:

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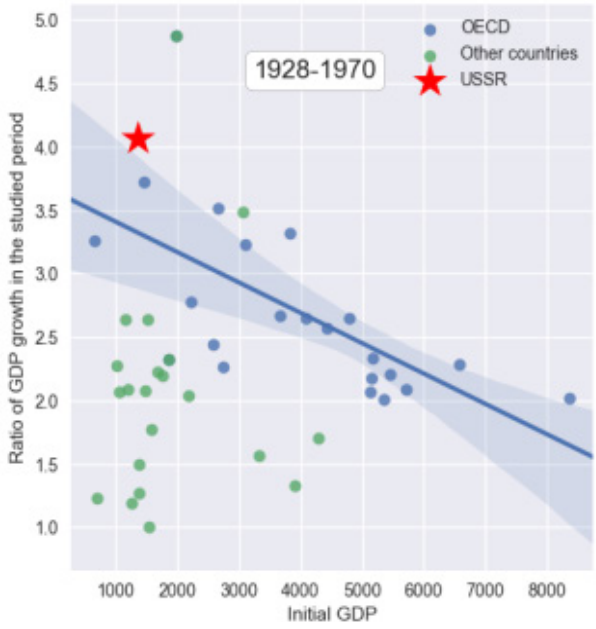
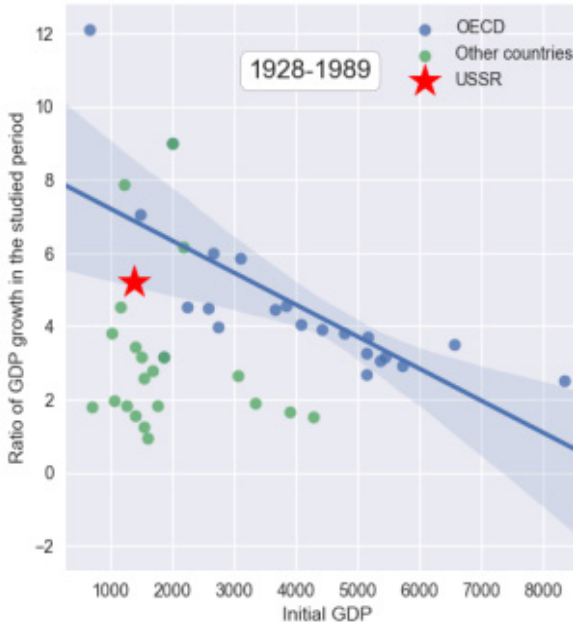
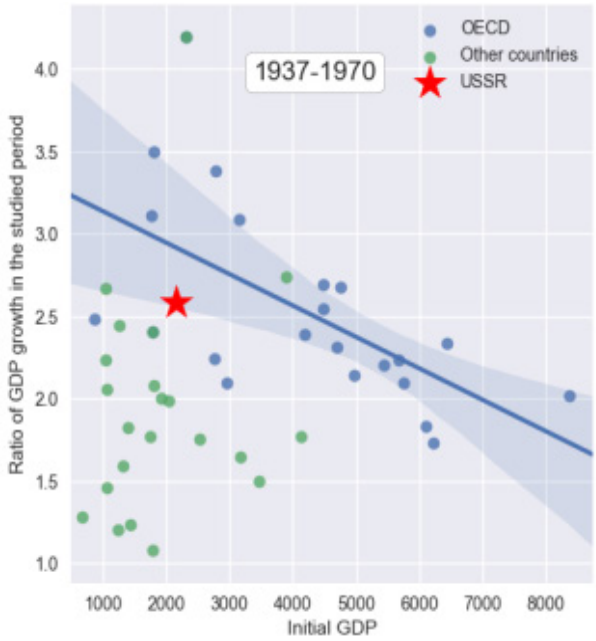
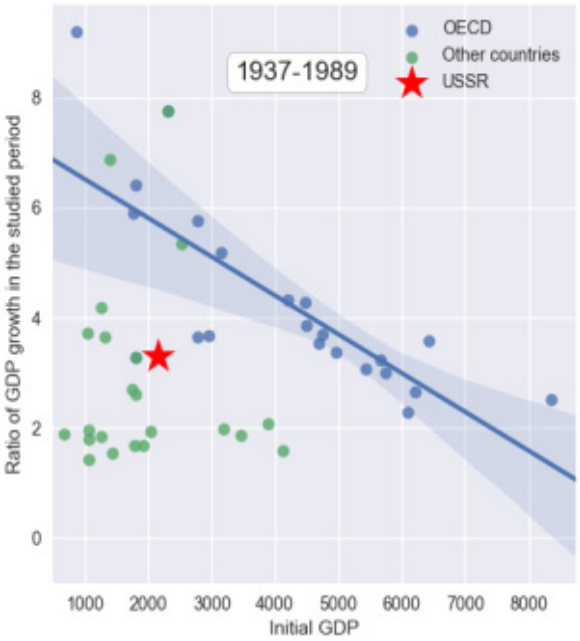
11 See the chart appendix for what countries are in each category https://gist.github.com/artirj/7af30c9a9708d43ab4f5495ae4300802





Here's the same plot, but this time starting in 1937. I chose this year because it's when Markevich and Harrison's data suggests the USSR recovered to its pre-WWI trend, i.e. when it had used up the easy "catch up" growth:





We are reminded that both our choice of start and end years greatly affect our assessment of Soviet growth. It is only under Allen's choice that it outperforms other countries starting from a similar point.

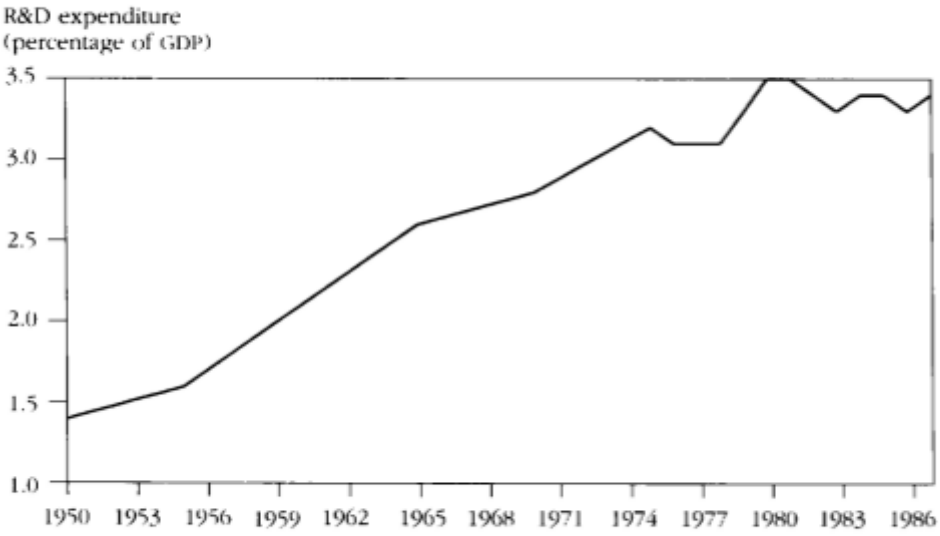
A DROP IN CIVILIAN R&D?

One of the reasons that Allen proposes as a cause for the later stagnation of the Soviet Union (i.e. after 1970) was a decrease in civilian R&D motivated by an increase in military spending, a fraction of which was R&D. Allen argues that without the intensified Cold War, the USSR could have kept the rate of civilian R&D investment constant, and Soviet GDP growth would have been 2 percentage points higher per year (pg. 210 in the book)) The evidence cited for this is from papers published in 1986 and 1990.

First let's note that Easterly and Fischer (1995) disregarded a drop in R&D as a cause of stagnation. I include their Figure 1 for reference below:

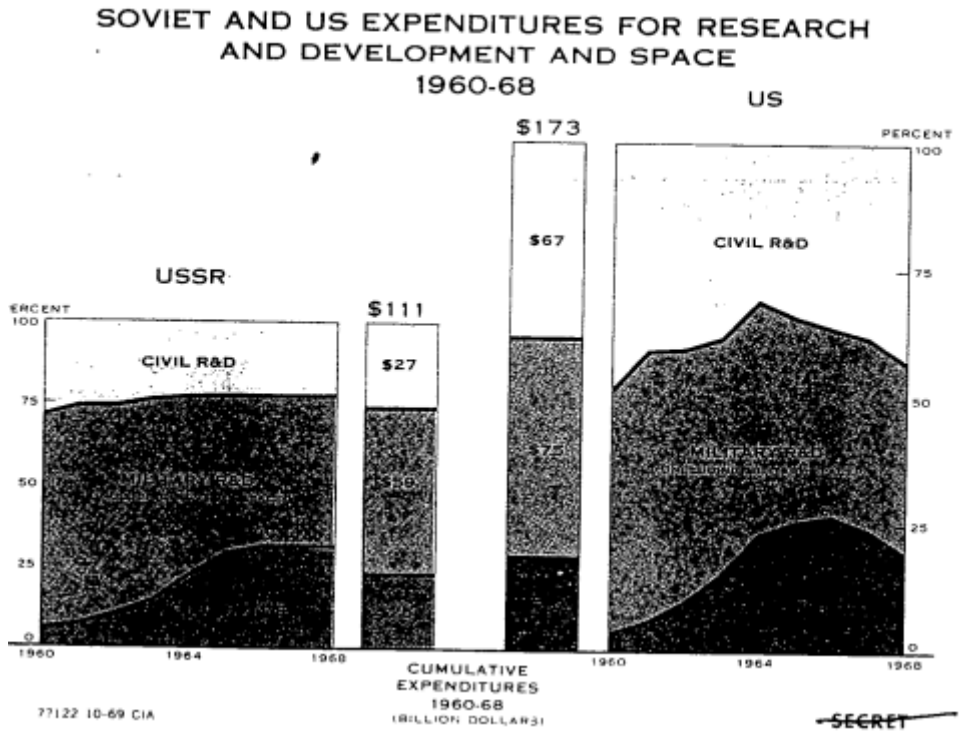
Western estimates of the Soviet research effort, presented in figure 1, show R&D spending rising as a share of GDP. The R&D share is above the 2 to 3 percent of GDP in the leading industrialized economies. In 1967, about 1.5 percentage points of Soviet GDP was estimated to be for defense and space R&D (Bergson 1983). The share of defense and space R&D in total R&D is believed to have fallen in the period 1959-84 (Acland-Hood 1987), implying an even steeper rise in civilian R&D. It is well known that the lack of market incentives made the allocation of Soviet R&D inefficient and inhibited the diffusion of innovations. This would explain a low growth payoff for a given amount of R&D; it does not explain why that growth payoff would have fallen over time.

Figure 1. *Research and Development Expenditures as a Percentage of GDP in the U.S.S.R., 1950–87*



Source: Joint Economic Committee (1990).

But we can examine the existing data ourselves. Luckily there is a CIA report for Soviet expenditures in R&D (1969). The report begins by saying that by 1969 the amount of R&D devoted to the civilian sector was, contra Allen, increasing, not decreasing. And given that R&D tends to have a lagged effect on productivity, a post 1970 decline in R&D wouldn't have caused an immediate drop in total factor productivity in 1970.



(The black area is civil space R&D spending.)

Some could claim that this decreasing share of military R&D was the cause of the decline—it is widely believed that military R&D has knock-on effects on innovation generally, but However, the consensus in the field of economics of innovation given the evidence currently available is that neither war nor military expenditures are good for innovation, relative to a counterfactual with no war, and higher civilian R&D. There are several reasons for this, among them that the more developed a military technology is, the harder it is for it to be spun off to the civilian sector; that war itself tends to induce pessimism about the future; and that military R&D absorbs resourceresourceresources that would otherwise have been otherwise available to the civilian sector. It is claimed that war gave us the radar or advanced aeroplanes, but we ignore the inventions that got delayed because of the reallocation of research effort, and we are too eager to assume that historical contingencies are necessary precursors of particular innovations.[12]

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12 A review of the relevant literature can be found in *Military R&D and innovation* (Mowery, 2010). An analysis of the case of WWII can be found in The Impact of the Second World War on US productivity growth (Field, 2008)

Interestingly, two of the references that Allen gives to back his claim that civilian R&D decreased, Kontorovich (1986, 1990) have not been further discussed in the literature. They each have almost no citations. Kontorevich argues that the decrease in civilian R&D productivity relative to military (measured by number of prototypes produced) began in 1960—not 1970. And the data we have from the CIA above does not indicate that civilian R&D declined then. Kontorovich himself does not immediately attribute the fall in civilian R&D productivity to the cold war, but

> *Decline in R&D productivity has resulted from the interaction of three elements: the desire of the Soviet leadership to have a strong and productive R&D; specific characteristics of R&D activity that make it impossible to guide through purely bureaucratic, command procedures; failure of production management to guide applied R&D through their demand for innovations. The segment of R&D that expanded faster than the others was applied research and development subordinated to the ministries responsible for production in particular sectors.*
>
> *Military sectors are among the most technologically progressive (electronics, radio, aircraft). It may be the case that there was more opportunities for new design in these sectors than in the older ones such as metallurgy and mining; that R&D in defense sectors fared better because these sectors are more technologically progressive, not because they are defense. However, instruments, means of automation, and computers, which are no less technologically progressive than any of the military sectors, experienced a marked decline in the number of prototypes created. This suggests that R&D fared better in the military than in civilian machinebuilding because it was receiving a larger share of total resources: more and better researchers, designers, experimental and testing equipment. It may also be the case that R&D organizations in military machinebuilding have been using their resources more efficiently than their civilian counterparts, though I do not see why this should be so.*

So Kontorovich has two reasons for the decline over this period: The incentives of the planning system, and shifting resources towards the military sectors. He *infers* the latter from the decrease of prototypes created, but this contrasts with Acland-Hood (1987), cited by Easterly-Fischer, who says that the share of defence and military R&D actually *fell* during that period. If this is so, Kontorovich's inference may be wrong, and thus the cause of the fall in civilian inventions would not be due to falling spending on R&D in the sector.

Here's a table from a Stockholm International Peace Research Institute report that includes Acland-Hood's data, plus other estimates, and which confirms that the share of military and space R&D was indeed decreasing in the late 1960s and early 1970s (i.e. more and more of the increasing R&D budget was going to civilian uses). This report mentions, and builds upon, Campbell's direct estimation, which is referenced in Allen's book. Allen does cite this report, but he doesn't comment on this table.

Table 2.5.2. Initial estimates of the Soviet military and space shares of total R&D expenditure, compared to Nimitz and to US shares

	Nimitz's estimates, for comparison		Acland-Hood (Similar method to Nimitz's)		Acland-Hood (Similar method to Nimitz's, using Plekhov/ Cooper distribution of scientists)		US shares, for comparison	
	Medium	High	Medium	Highest plausible	Medium	Highest plausible	Total of military and space	Space alone
1960	48	62					55	3
1965	45	57					54	21
1968	39	55			33½	47	48	13
1974			29½[a]	54			35	8
1977					23	43½	33	8
1982							32	7
1984							35	6

[a]Military 23½ per cent, space 5 per cent.

Sources: Nimitz, N., *The Structure of Soviet Outlays on R&D in 1960 and 1968*, Rand Report R-1207-DDRE (Rand Corporation: Santa Monica, CA, June 1974), p. v; Cooper, J., *Scientists and Soviet Industry: A Statistical Analysis*, Centre for Russian and East European Studies, Birmingham University, UK, informal discussion paper (Nov. 1981); Acland-Hood, M., *Military Research and Development: Resource Use and Arms Control*, SIPRI (Oxford University Press: Oxford, 1987, forthcoming), chapter 4 and appendix 4.

The table clearly shows that the share of military and space R&D in total R&D was falling from 1960 to the late 1960s, and falling or constant until 1977 – most likely falling according to the report.

This is consistent with the CIA report, indicating a Soviet intent to increase investment in civilian R&D around the turn of the 1970s.

But if this is so, then either these measurements are wrong and the CIA's assessment of Soviet intentions are wrong, or Kontorovich's inference of a declining civilian share of R&D from declining prototypes is wrong. Or perhaps, more resources were being allocated to R&D, and a declining share was in fact going to the military, but these resources were not equal or equivalent, and the best among them were increasingly being dedicated to military research.

It's hard to come to a final conclusion, but on balance it seems like Allen is at the very least overstating his case. There is no strong evidence for a decline in the share of R&D devoted to civilian consumption—and declining prototypes could just as well reflect problems in the system as a dearth of inputs.

Some counterfactuals

Since Allen published his book, only one paper has done something close to challenging its main conclusions. Initially a working paper, it then developed into a proper peer-reviewed publication (Cheremukhin et al. 2016).

The paper studies whether Stalin's policies paid off in terms of economic welfare, and whether Russia would have industrialised without Stalin. In practice, this means trying to examine deviations of the Tsarist and Soviet economies from a neoclassical model. They

do it by analysing 'wedges', which refer to losses of efficiency due to suboptimal policy, institutions, or structural features of the market. An intuitive way of thinking about these is imagining a supply-demand chart of the economy as if it were in equilibrium, and then adding in distortions (e.g. a minimum price), which introduces welfare losses, appearing in the chart as triangles.

They consider three sorts of wedges in particular: intersectoral labour and capital wedges, and an intertemporal wedge. As an example, take the intersectoral labour wedge,

$$\tau_{W,t} + 1 = \frac{U_{M,t}}{U_{A,t}} \frac{F^M_{N,t}}{F^A_{N,t}}$$

Where U is the marginal utility derived by an agent at time t, from both the manufacturing and agricultural sectors, and F is the derivative of a Cobb-Douglas production function with respect to population. What the equation amounts to is saying that there are no further gains to be had by redistributing labour between sectors—i.e. from agriculture to manufacturing.

In turn, they further decompose the labour wedge into a consumption, production, and mobility component. These measure the extent to which consumption, production, and the mobility of workers between sectors are optimal.

The factors that could affect the size of the wedges, generating inefficiencies, are:

Peasant communes: after the abolition of serfdom, peasants moved into communes. Some argue that communes restricted worker mobility; they don't allow peasants to sell their land. Leaving the commune means surrendering your stake in it. This would appear in the mobility component of the labour wedge.

Monopoly capitalism: pre-revolutionary Russia had an economic system something like

monopoly capitalism. The State restricted competition, leading to the emergence of inefficient monopoly firms. This would appear in the production component of the labour wedge.

Segmented consumer markets and rationing: if transport and communications are suboptimal, prices will differ between different areas. This introduces a friction that prevents the equalisation of the marginal rates of substitution of agricultural/manufacturing goods and their relative prices. Some will be underproduced and others overproduced. This increases the consumption component. Rationing and price controls would also tend to increase or decrease size of the consumption component of the wedge, depending on how the government sets prices.

Industrialization and collectivization: if a monopolistic sector is pushed to produce over and above what it would produce without coercion, the production component of the labour wedge would be smaller. Also, reducing the standards of living of agricultural workers, as collectivisation did, would increase the wedge between the marginal product of labour in agriculture and their income. This would be reflected as an increase in income for the agricultural sector, and so reduce the production component of the labour wedge too.

A "Big Push"[13]: a big push policy, where central pressure overcomes sectoral, firm-level, or individual inertia or coordination problems, would increase manufacturing output and also increase the production component of the labour wedge. That is: inefficiency increases in the short term as the economy moves out of equilibrium, but it is theorised that this move ends up leading to a higher growth equilibrium later on.

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13 This is the idea that a free market can get stuck in a low development equilibrium due to coordination problems (e.g. companies don't build petrol stations because people have no cars, and people don't buy cars because there are no petrol stations), and that a government, via investing in key areas, generally infrastructure, can shift the equilibrium to a high development one.

They find that the labour wedge, especially the production component, shrank in the USSR compared to Tsarist Russia, but that manufacturing TFP underperformed the Tsarist trend.

In the working paper, they engage in an analysis of the welfare implications, arguing that the losses outweighed the benefits, and come down quite strongly against Stalinism – and Allen's thesis:

Therefore, our answer to the 'Was Stalin Necessary?' question is a definite 'no'. Even though we do not consider the human tragedy of famine, repression and terror, and focus on economic outcomes alone, and even when we make assumptions that are biased in Stalin's favour, his economic policies underperform the counterfactual. We believe Stalin's industrialisation should not be used as a success story in development economics, and should instead be studied as an example where brutal reallocation resulted in lower productivity and lower social welfare.

So, from their analysis they conclude that first, extending Tsarist Russia into the future would have indeed resulted in lower growth compared to the Soviet Union (but higher welfare!) But second, implementing liberalising reforms in the Tsarist economy (reducing barriers to entry, and increasing competition) would have been far superior. In the working paper they also consider implementing the Japanese growth model in Russia, and the conclusion is similar. And like Allen, they find that Lenin and Bukharin's New Economic Policy would also have been superior to Stalinism.

Finally, productivity (TFP) decreased during the first Five Year plan, and the authors do not find support for a Big Push interpretation of the effectiveness of Stalin's policies, and neither do they find support for the theory that movement of workers from rural areas to

cities during the Tsarist period did not happen because to institutional factors (communes or *obschina*).

Our findings are inconsistent with the predictions of Big Push theories that sweeping state investments should increase productivity in the manufacturing sector and increase the labor wedge (see Section 3.2). We observe exactly the opposite. The labor wedge signficantly decreased. TFP fell in both sectors during the main phases of industrialization and collectivization and remained below Tsarist trends in most years.

Our results are also not consistent with the view that collectivization policies played a major role in changing intersectoral distortions: we show that the decrease in the production component was mostly driven by the reduction of markups in the non-agricultural sector rather than by the increase in markups in agriculture. At the same time, our findings lend support to the view that policies that encouraged expansion of manufacturing, e.g., through the use of explicit output targets, soft budget constraints, etc., significantly affected intersectoral allocation of resources.

For Cheremukhin et al., Stalinism worked like it did not because of anything particular inherent to central planning, but because it fixed the problems of Tsarism by means of forcing the transition from farms to factories.

One final interesting feature of this paper is that it tries to solve a defect that plagues any economic history analysis that has low quality or scarce data as an input: That the conclusions can be highly dependent on the choice of model, choice of price index, or ways of estimating missing values. The conclusions that follow from their model, though, can be written in terms of directly measured data, and so the authors claim that their conclusion will hold under any reasonable alternative way of analysing the data. This is no absolute guar-

antee, but it does boost the confidence one should place on their results.

Conclusion

Given the above analysis, I conclude that Stalinism managed to grow GDP faster than Tsarist Russia, but the price in terms of welfare to pay for that growth was not worth it.[14] Liberalising reforms in Tsarist Russia would have probably led to even faster growth. However, it is difficult to know if it is plausible that those reforms would have been actually implemented given the institutional setting. Allen's claim that absent Stalin, Russia would have been a country with a level of income similar to Latin America cannot be ruled out.

The secret sauce of Soviet growth is the increase of the investment share of GDP, and forcing the transition from agriculture to industry. Not central planning, and most of the spectacular early Soviet growth was achieved before World War II, and could be attributed to a recovery from the WWI and the civil war.

The consensus explanation for the later stagnation of the Soviet Union is largely correct: central planning does have incentive and information problems, and growth by increasing inputs (capital and labour) alone is not sustainable without accompanying increases in productivity. The Cold War could have been a, but not the, factor explaining that decrease in productivity.

Further research is needed. Other experiences with central planning should be analysed to see if, at least, they are an effective growth model for poor countries versus the benchmark of a market economy.

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14 This measure excludes famine, repression, and terror, so it is massively biased in favour of Stalin, but it is what Cheremukhin et al. used. This choice does not affect the conclusion of the paper.

CHAPTER 3: PRODUCTIVE EFFICIENCY

The "consensus explanation" for the ultimate stagnation of the Soviet Union goes as follows: once you have exhausted your reserves of idle workers and capital, the only path to sustainable growth is by increasing productivity.

In this chapter I examine efficiency, using two important articles as a foil. Those two articles[15] argue that, contra the consensus, the Soviet Union was efficient after all. Some representative quotes:

> *Around the time of the Soviet collapse, the economist Peter Murrell published an article in the* Journal of Economic Perspectives *reviewing empirical studies of efficiency in the socialist planned economies. These studies consistently failed to support the neoclassical analysis: virtually all of them found that by standard neoclassical measures of efficiency, the planned economies performed as well or better than market economies[…].*
>
> *First, he reviewed eighteen studies of technical efficiency: the degree to which a firm produces at its own maximum technological level. Matching studies of centrally planned firms with studies that examined capitalist firms using the same methodologies, he compared the results. One paper, for example, found a 90% level of technical efficiency in capitalist firms; another using the same method found a 93% level in Soviet firms. The results continued in the same way: 84%*

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15 https://www.jacobinmag.com/2012/12/the-red-and-the-black/ and http://mccaine.org/2013/01/30/on-communism-and-markets-a-reply-to-seth-ackerman/

versus 86%, 87% versus 95%, and so on.

Then Murrell examined studies of allocative efficiency: the degree to which inputs are allocated among firms in a way that maximizes total output[…]. The highest number found in any of the Soviet studies was 10%.

And

Previous scholars claimed that when the Soviet surplus population ran out, the USSR was unable to efficiently replace labor with machinery, leading to an inability to make the leap from labor-intensive to capital-intensive production. But Beare's data show that the ratio of this replacement of labor by capital may not have been as bad as previously thought, but in fact may have been quite high, as it was in Japan, which did not experience such stagnation. Nor did investment itself falter: even as late as 1989 the Soviet investment share of GDP was a staggering 35%. In short, Soviet central planning did not fail due to its inability to develop or implement labor-saving technology.

Why do I mention all these technicalities? Simply to make the important point that the traditional narrative, in which the Soviet central planning model collapsed due to the inherent flaws in such a system's ability to expand and deliver the goods, is untrue. The failure of Soviet and Eastern European planning is no less real than it was before, but it must be understood as a contingent, political failure, located not in the concept of central planning itself, but in the limitations of the Soviet version. By most statistical measures, even those of outright foes of the Soviet Union, their central planning system was an overwhelming success in terms of growth, increases in productivity, and raising the potential living standards

There is some truth to this view, but they are not faithful to the latest research, misinterpreting the evidence in ways that were already pointed out a decade ago.

(I) Efficiency, some definitions

Efficiency can mean many things in economics. The term generally refers to how much of one thing you can extract out of another, relative to some optimal amount. The term is thus used in the same way as in engineering. We can distinguish between several types of efficiency (Escoe, 1996):

- Economic efficiency: the ability of an economy to produce what is demanded from it—the right goods, at the right time, in the right amount. (Or producing at the desired point in the appropriate Production-Possibility Frontier or PPF[16].) We can divide it into:
    - Static efficiency: How close to the PPF the economy is at a given point in time.
    - Dynamic efficiency (Balassa, 1964): How fast the PPF expands.
- Allocative efficiency: the ability of an economy to efficiently allocate inputs. An economy is allocatively efficient if *given a level of technology*, no gains can be made if productive factors are shifted around (Or, that the marginal rates of technical substitution (MRTS) for the inputs are equal in every possible use). An economy can be allocatively efficient and yet be inside the PPF, due to technical inefficiency.
- Technical efficiency: the ability of an economy to produce the output one would expect from its inputs and technology level, relative to some standard (with respect to a rele-

16 If one imagines a volume in n-dimensions representing quantities of possible goods that an economy with a fixed allocation of resources and technology can produce, the PPF is the border of this volume. Points inside the volume correspond to economically inefficient combinations of resources. As an example for two goods, imagine an economy that has to allocate resources between producing electric guitars and e-cigarettes. The economy can produce 10 electric guitars or 100 e-cigarettes, and any combination in between, in the proportion electric guitar =10 e-cigarettes. If the economy is producing one of each, it would be below the curve, meaning that it is possible to increase the production of at least one of the goods, without reducing the production of any good.

vant PPF). Some authors take this standard to be at the level of the country (a perfectly efficient factory is as good as the best factory in the country), others at the level of an industry within a country (an efficient factory is as good as the best factory in its industry), and others (see Bergson, 1992), an international standard (an efficient factory is as good as the best in the world)

- Total Factor Productivity (TFP): the ratio between output and a weighted function of inputs (Capital and Labour). It is not exactly a type of efficiency, and it is used to measure how much growth is not due to variations in inputs. This is typically taken to mean how well the economy is making use of those resources. Sometimes TFP growth is confused for some sort of rate of technological improvement, but it is not. TFP is calculated as a residual, and it will capture everything that affects how well an economy converts inputs into outputs (as well as measurement error in capital and labour).

- X (GDP, tonnes of steel, etc…) per Y (worker, man-hour person…): again not exactly a type of efficiency, but gives an idea of how productive Y is in terms of X.

Now you can see why the paragraphs quotes are incomplete. To gain a full understanding of productivity in the Soviet Union (and other socialist economies) we need to study all of the productivity types, and see why are the way they are.

(II) X per Y

Let's start by what is perhaps the most intuitive indicator: raw production per some measure of input. For that, here are two tables from *The Socialist System* (Kornai, 1992):

TABLE 12.3
Productivity in East and West Germany, 1983

	Productivity in Mining and Energy Production		
	East Germany	*West Germany*	*East Germany/ West Germany (percent)*
Brown coal produced per employee (tons)	2,699	5,905	0.46
Gas produced per employee (1,000 ccm)	904	2,251	0.40
Electric power produced in coal-fired paver plants per employee (MWh)	3,186	7,065	0.45

Source: Bundesministerium für Innerdeutsche Beziehungen (1987, tables 3.1–4).

TABLE 12.6
Continuous Casting in Steelmaking: International Comparison

	Continuous Casting per Total Production (percent)		
	1970	*1980*	*1987*
Socialist countries			
Bulgaria	0	0	10
Czechoslovakia	0	2	8
East Germany	0	14	38
Hungary	0	36	56
Poland	0	4	11
Romania	0	18	32[a]
Soviet Union	4	11	16
Capitalist countries			
France	1	41	93
Italy	4	50	90
Japan	6	59	93
Spain	12	49	67
United Kingdom	2	27	65
United States	4	20	58
West Germany	8	46	88

Source: Finansy i Statistika (Finance and Statistics, Moscow) (1988a, p. 109).
[a]1986.

In the first table, while Germany is of course not the USSR, it does however erve as a first approximation of what the Soviet system was capable of. One possible explanation for this particular finding is overmanning—employing more people than necessary for a variety of reasons—another possible explanation is a lower level of technological development.

The second table shows how rapidly a given technology diffuses through a national economy. In 1970, the Soviet Union was matched with Italy and the United States in their fraction of continuous casting of steel. This is a technology, which appeared in the 1950s, that allows for the production of cheaper and higher quality steel. By 1980, the US has multiplied their fraction by 5 and Italy by 12.5, while the USSR just increased by a factor of 2.75. From 1980 to 1987, the US dominated with an increase of 2.9 followed by Italy with 1.8, and finally the Soviet Union with just 1.45. The US took more time than, say, Spain or Italy to diffuse this innovation through its steelmaking industry, perhaps due to the presence of a larger steelmaking industry that would be more difficult to upgrade. Given this, we would expect the USSR to get a bonus from being less developed overall and coming from a lower base, especially since the USSR produced less steel.

(III) The reliable scribe vs the unreliable printing press: Static & Dynamic efficiency

Imagine you have to copy a text and you can choose between asking a scribe to do it (manually), and using a printing press (assuming it is a new invention).

In world A, the scribe, having been doing the same thing over and over for decades, never gets a book wrong. In world B, scribes are replaced by newer technologies. The printing press and its operators print faster, but on the other hand, sometimes make mistakes, and have to start again.

The scribe is an example of static efficiency—doing something efficiently at a given point

of time—while the printing press captures the idea of dynamic efficiency and its relation to static efficiency. The printing press is in some sense more efficient than the scribe (with it you can produce more books per hour), yet individually, it is less statically efficient than the scribe (the scribe transforms 100% of inputs into outputs, while the printing press wastes some inputs, as there are mistakes).

Balassa (1964)[17] explains that this is what happens in capitalism and socialism. Under capitalism, technological innovation is faster, and so it is more difficult to learn to optimally use a technology before it is replaced by another one. Under socialism, slower change gives managers and workers time to adapt. Hence, there is an inverse correlation between static and dynamic efficiency, and we would expect to find higher static efficiency in socialist economies.

Danilin et al. (1985) study a sample of cotton refining enterprises in the USSR and they find high technical efficiency with little variation between enterprises. This high technical efficiency is with respect to the highest technical efficiency attained in the cotton refining sector in the USSR[18], so as the authors remark, this is compatible with a low overall level of technical efficiency when compared to Western countries.

Now that we know about static/dynamic and technical efficiency, it is time to discuss a paper that focuses on allocative efficiency. *Why does the Soviet economy appears to be allocatively efficien*t (Whitesell, 1990), starts in a way that might sound friendly to supporters of socialist systems:

Despite the conventional wisdom that the Soviet economy is inefficient in every dimension,

17 There are TFP values in that article, but we also have values from more recent papers, which we should arguably consider as more reliable. Data quality typically stays constant or improves with time, prima facie.

18 If the "absolute" efficiencies (measures with respect to the best in the world) of three factories are low, say 10%, 11% and 12% but one uses as a standard of measure the highest of them, then those efficiencies become 83%, 91%, and 100% (of the best performing one), for an average efficiency of 91%. This figure has to be interpreted with caution, as this is a relative, not absolute efficiency.

> *there is a rather large amount of statistical and econometric evidence that some aspects of the Soviet economy may be allocatively efficient relative to market economies.*

Ideal for cherry-picking quotes! But then, he continues,

> *This paper argues that econometric results showing Soviet allocative efficiency do not refute the conventional wisdom of poor Soviet economic performance, but in fact are completely consistent with such an evaluation.*

Whitesell differentiates between allocative and technical efficiency, and focuses on the former, which does not imply anything about the latter. This point is key, and if one is not reading closely what sort of efficiency they refer to, one can be misled. In his literature review, he goes back to Dalinin's study of the cotton industry in the USSR. Dalinin's conclusion was that *relative* technical inefficiency was low (factories were doing their best, given their technological means, which in turn were also low). But Whitesell contends that his results actually imply low allocative, not technical, inefficiency, in the sense he uses. The results just show that resources are being *properly allocated between* cotton factories—not that cotton is being produced *well*.

> *'Technical' inefficiency in this estimation is defined only relative to the least technically inefficient firms. If those firms which define the frontier are very inefficient relative to some absolute or engineering conception of the production function, then this estimation process is unable to perceive that fact. So the estimates do not demonstrate technical efficiency in this absolute sense. The estimates do show that productivity differentials across firms are small.*

In a way, Whitesell tries to avoid the confusion caused by saying that "technical efficiency was high" and saying instead that "technical efficiency was low", coupled with "allocative efficiency was high". By the former he means that technology lagged the West, but at the

same time, resources were allocated between factories in such a way that given that set of factories, it is difficult to allocate resources between them in a more efficient way. His conclusion is the same we already saw in Balassa's paper, but interestingly Whitesell does not cite it.

> *We have argued that there is a positive correlation between the rate of economic growth and technological change and the size of static allocative inefficiency in all economic systems including the Soviet-type economy. The implication is that the finding of relatively high levels of static allocative efficiency in the Soviet economy is a direct result of its relative technological stagnation. F*
>
> *urthermore, by any measure, the dynamism of the Soviet economy has been rapidly diminishing. Output growth rates have been falling, the growth of labour productivity has been falling, and the growth of either capital or combined factor productivity has been falling. And these problems have accelerated since the mid-1970s. In fact, there is evidence that combined factor productivity growth has been zero, or even negative, since the late 1970s.*
>
> *The interpretation most consistent with non-econometric studies is that some technological innovation is occurring but it is small, and that technical inefficiency is increasing. This interpretation also is supported by empirical findings of increasing overall inefficiency in Kemme and Whitesell. Soviet newspapers in the past three years give one the strong impression that Soviet economists and planners themselves believe that technical inefficiency has been increasing since the early 1970s. If the Brezhnev era was really the 'era of stagnation' then technical inefficiency is likely to have been increasing. Evidence includes: reduced pressure on firms to fulfil output targets; an increasing amount of plan revision in order to allow firms to fulfil plans ex post; expansion of black and grey market activities; increasing absenteeism; increased cynicism of workers toward the system; increasing inventories, etc.*

The debate over allocative efficiency

Now that the different types of efficiency have been discussed, we can critically discuss a paper that some have used to support the claim that the USSR enjoyed a high degree of technical efficiency. This paper is *Can neoclassical economics underpin the reform of centrally planned economies?* , by Peter Murrell. Murrell clarifies that he does not dispute the empirical facts that the USSR underperformed. He only finds neoclassical explanations for this wanting. What Murrell tries to see if whether neoclassical models can capture the sort of inefficiencies that were present in the USSR. He concludes that they cannot. But even if this is true, this by itself does not tell us anything about efficiency.

Murrell cites Danilin's study, contrasting the high level of technical efficiency found there (allocative efficiency by Whitesell's definition), with the lower level in the West. He judges this unexplained by the literature, but we have seen that there are some papers that at least propose an explanation for the inverse relation between static and dynamic efficiency.

Table 1
Comparisons of Technical Efficiency Estimates

	Market	*Centrally Planned*
Stochastic frontier; enterprise observations; cross-section.	90%—Schmidt and Lovell (1980) 84%—Meeusen and van den Broeck (1977)	93%—Danilin et al. (1985) 86%—Afanasiev and Skokov (1985)
Deterministic frontier; enterprise level observations; cross-section.	75%—Fare et al. (1985) 92%—Byrnes et al. (1984) 69%—van den Broeck et al. (1980)	64%—Lovell and Wood (1989)
Stochastic frontier; industry level observations; time series.		95%—Kemme and Whitesell (1992)
Stochastic frontier; aggregate observations; time series.	87.3%—Lovell and Sickles (1983)	95.3%—Kemme and Whitesell (1992)
Stochastic frontier; enterprise observations; cross section/ time series.	89%—Aigner et al. (1977) 93%—Schmidt and Sickles (1984) 58%—Kumbhakar (1987)	88%—Koopman (1989a)
Deterministic frontier; aggregate observations; time series.	96%—Burley (1980)	94.5%—Brada (1989) 89.5%—Kemme and Neufeld (1989)

Note: In cases in which the cited papers contain alternative estimates or results for a number of distinct samples, the figures above are averages of several estimates.

(NB these estimates are with respect to a best-practice enterprise in the same system and country)

Read the table above and try to form an estimate, out of context, of what this table is saying. Naively, it seems to say that market economies were about 58-96% efficient and that centrally planned economies were around 64-95%. This does look like efficiency was the same. But if one has thought this, one would be wrong. But to know that one has to read the paper: what the table is really measuring is not efficiency in an absolute sense, but efficiency in a relative sense (See footnote 15).

But Murrell also argues that even by absolute measures, there doesn't seem to be much difference between state-owned and private firms. He does cite a study to back this assertion (Brada and King 1991). The study in question examines firms in the period 1960-74, and does say that the average efficiency of state and private agriculture were similar.

But one study, of the sector that is easiest to plan, agriculture, is not enough to support a broad claim about absolute technical efficiency.

And even this one paper finds negative conclusions if you consider the system as a whole:

distribution of inputs does lead to a sub-optimal allocation of resources in Polish agriculture. Thus, we agree with Johnson and others who argue that it is the environment of socialized agriculture rather than the socialized nature of farm units that leads to the poor performance of the agricultural sector in Eastern Europe and the former Soviet Union.

In light of the rest of the literature, and other chapters of this book, just one study is not enough to assert that the Soviet Union or socialist systems more broadly did have a similar level of productivity or efficiency compared to the West.

Relative claims of technical efficiency are not enough: saying that technical efficiency within an industry is high does not mean that the industry is absolutely productive. It is like saying that, controlling for latitude, a given location in the Sahara Desert is not particularly hot—surely true but not a good basis for inferring that such a spot would be a nice place to live.

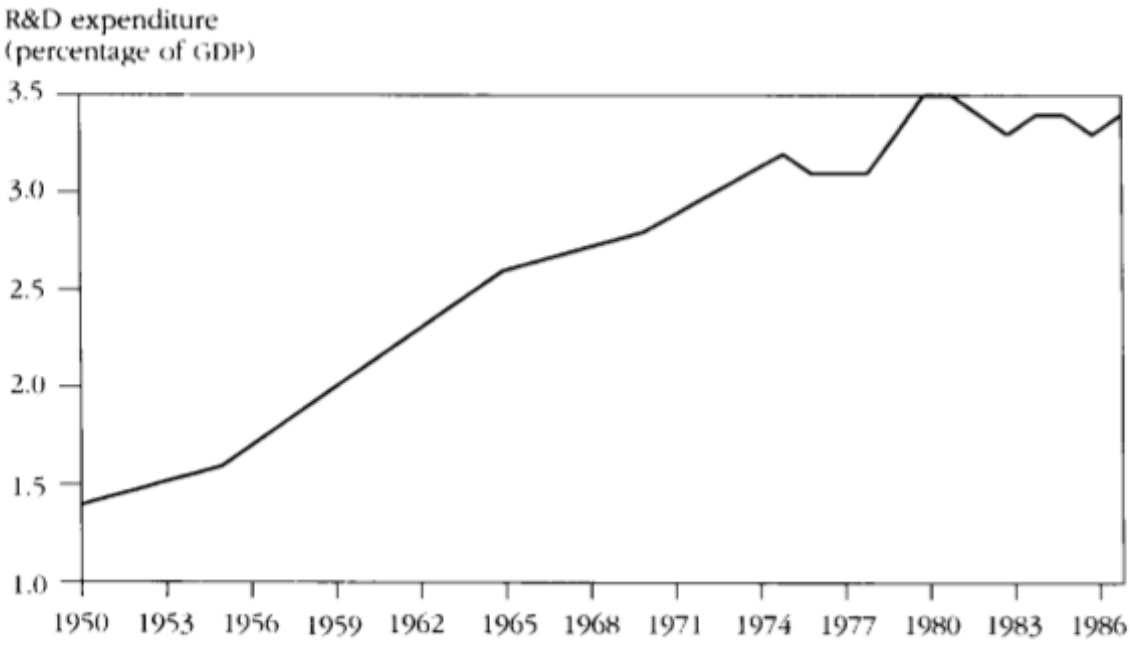
The Easterly Saga

Another stream of papers begins with The Soviet Economic Decline (Easterly & Fischer, 1995). This paper is not exactly about yet another definition of efficiency, but about the broader question: why did the USSR stagnate, in which productivity does play a part.

This is the same paper we have already seen a couple of times before: it analyses growth, and find it wanting once usual suspects (initial GDP, population growth, investment ratio to GDP, etc) are controlled for. That is: The Soviet System reduced growth, given all of these factors, in a given period of time.

Then, they analyse causes for decline, considering and rejecting first disincentives for innovation, and a high defense burden (They say this was a very minor cause, if anything). Easterly does agree that the Soviet system generates disincentives for innovation, but that these did not became worse over the years, and so this could not have caused the decline, unless we get picky and argue that perhaps it was the sectoral composition of R&D within the civilian sector that wasn't being allocated properly.

Figure 1. *Research and Development Expenditures as a Percentage of GDP in the U.S.S.R., 1950–87*



Source: Joint Economic Committee (1990).

They then study the extensive growth hypothesis: Was Soviet growth mostly driven by input accumulation, rather than productivity improvements? Seemingly: capital-output ratios were increasing through most of USSR history (while they tend to be constant in capitalist countries). This means that more and more capital was required to produce additional units of economic goods. Another prediction of the hypothesis is that the share of GDP devoted to investment will also increase, and that is also seen in the data,

These patterns of growth can also be seen in the East Asian economies of decades ago. So why did Soviet growth decline while East Asian economies carried on catching up with the West?

Easterly and Fischer turn to TFP for an explanation.

Table 5. *Productivity Growth Assuming the Same Production Function Structure in the U.S.S.R. and in East Asia, Based on Different Data Sources, 1950–88*
(average annual percent)

Data source and economy	*Period*	*Change in capital-output ratio*	*Productivity growth*
Western data			
U.S.S.R.	1950–87	2.5	0.8
	1960–87	2.6	0.2
	1970–87	3.0	–0.3
Young (1994b)			
Singapore	1970–90	2.8	0.8
Korea, Rep. of (excluding agriculture)	1966–90	3.6	1.5
Taiwan, China (excluding agriculture)	1966–90	2.6	2.3
Kim and Lau (1994)			
Singapore	1964–90	1.4	2.1
Korea, Rep. of	1960–90	3.5	1.7
Taiwan, China	1953–90	3.1	2.2
Japan	1957–90	3.2	1.9
Benhabib and Spiegel (1994)			
Japan	1965–85	2.6	1.9
Korea, Rep. of	1965–85	2.8	2.1
Singapore	1965–85	2.4	2.1
Taiwan (China)	1965–85	3.0	1.9
Nehru and Dhareshwar (1993)			
Japan	1950–90	2.7	1.7
Korea, Rep. of	1950–90	3.7	2.8
King and Levine (1994)			
Japan	1950–88	2.3	2.5
Korea, Rep. of	1950–88	3.0	2.0
Singapore	1950–88	2.9	2.8
Taiwan, China	1950–88	2.6	2.4

Note: Productivity growth is calculated assuming a constant Cobb-Douglas capital share of 0.4 across all economies, using data on output, capital stocks, and labor.

They compare the USSR's average rate of TFP growth with the average rate of TFP growth for all economies (1960-90), and find the USSR to be one percentage point below where it should.

In their paper they finally arrive at a different explanation for the decline: Declining marginal returns to capital, not a slowdown in TFP, caused the slow-down in growth. His

revised estimate for TFP, then, is a rate of growth of 1% per year, and it was constant, not declining.

They then survey other ex-socialist countries, and also find low rates of substitution there, and much higher rates in East Asian economies, which explain the puzzle of why their massive capital investment did not enter into decreasing returns as fast as the Soviet's.

The final chapter of this story are the papers by Beare (2008), Easterly (2008) and Nakamura (2015). Beare's paper was cited by one of the posts that began the discussion in this chapter. He argued that Easterly had made a mistake in his calculations, and thus Easterly's theory, that the slowdown was not due to a decrease in the rate of growth of productivity (TFP), was not supported by that paper. Easterly's rejoinder argued that indeed, he made a mistake, but that a more careful analysis is not completely damning on the hypothesis: it could have been that it was both a decrease in productivity and a consequence of the extensive growth strategy pursued by the Soviets.

The latest inquiries into this topic, Nakamura (2015) does point in this direction: both theories play a role in explaining the slowdown.

Conclusion

So in the end, I think we can conclude that the Soviet economy was technically efficient in the trivial sense that oviet enterprises were doing the best they could with their level of technology and know-how. But it was only slow and slowing technological progress that allowed workers and managers to adapt so closely to the status quo. Allocative efficiency was low, due to the planning process itself, and TFP growth was lower than in the West, and decreasing. Finally, the growth model pursued by the Soviets, accumulating capital to generate more capital, proved to be a recipe for a quick takeoff, but also for stagnation and

decline. To be sure, it didn't by itself cause the collapse of the Soviet Union, but it did contribute to the factors that ultimately led to it.

CHAPTER 4: ACHIEVING FULL EMPLOYMENT

Now that we have seen how (un)productive the Soviet Union was, it is time to study what happened to one of the two foundations of growth, labour (the other being capital). The Soviet Union did indeed achieve full employment, but the trade-offs they made in so doing turned out not to be worth it at a social scale.

The Soviet labour 'market' was a peculiar one. Rather than having unemployment, as we are used to, the Soviet Union not only had every able-bodied labourer working, but also got to a situation where there were *shortages of labour.* In this chapter I clarify what full employment means in the Soviet context, and explain some aspects of their labour 'market'. As usual, this chapter covers the post-Stalin era.[19]

The official Soviet ideology contends that socialism is not only completely different from capitalism, but also in all respects (i.e. socially, economically, politically, culturally, and morally) superior to it. In order to substantiate this claim, the ideology cites a long list of achievements, one of them being that while unemployment is an endemic feature of capitalism, socialism abolishes it entirely and once and for all.

If the term 'unemployment' denotes exclusively open unemployment of the registered kind or the dole, then the assertion is fully justified, because in the Soviet Union the pay-

19 During Stalin's time, until 1956, workers couldn't legally quit their jobs without permission from the company's management. Quitting was a criminal offence. The State could compulsorily move workers from one company to another. Work discipline was enforced throughout the Soviet era, but the harshness of punishments decreased after Stalin. *(Porket, 1989)*

Even after Stalin, worker strikes remained illegal, and in some cases they were brutally repressed, (e.g. the Novocherkassk massacre).

ment of unemployment benefits was stopped as early as October 1930. On top of that, over the years the Soviet regime has succeeded in mobilizing for participation in the social economy the vast majority of able-bodied men and women of working age. (Porket, 1989)

This chapter draws mainly on János Kornai's *The Socialist System* (1992) and J.L. Porket's *Work, Employment, and Unemployment in the Soviet Union* (1989).

The first point I'll mention is the data backing up the claims in the introductory paragraph: the economic activity rates in socialist countries were indeed far higher than the ones in the West as you will see overleaef:

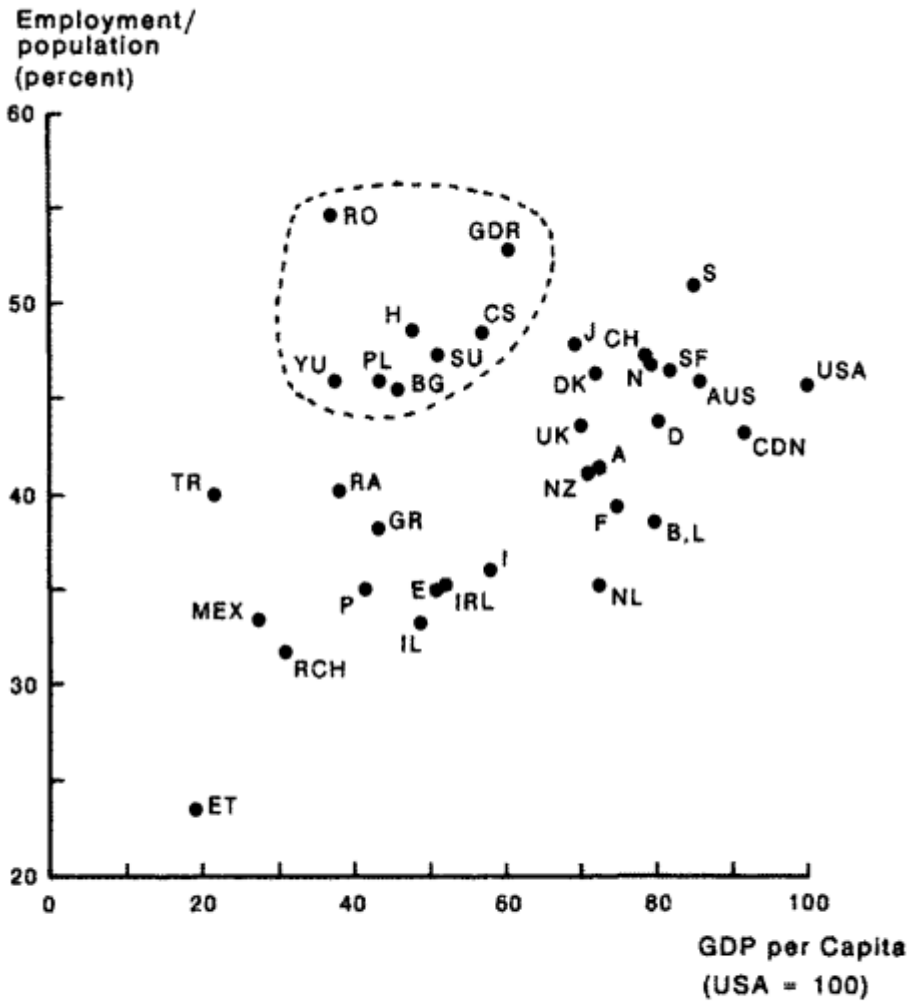


FIGURE 10.1 Participation Rates and the Level of Development, 1980
Source: The figure and the statistics on which it is based were compiled by J. Köllő. The source for data on GDP is É. Ehrlich (1985, p. 100). The figures on employment and population for the capitalist countries have been taken from the *UN Demographic Yearbook* and for the socialist countries from the *CMEA Statistical Yearbook*.

[Source: Kornai 1992]

Even taking into account the loose relationship between economic development and labour participation rates, the USSR shines.

One key difference between the socialist systems and the West was a massive socialist lead in the percentage of employed women. If we assume that half of the population were women, this helps explain in part why the employment/population ratio was so high in socialist countries.

TABLE 10.1
Activity Rate of Women in the Age Group 40–44: International Comparison

	1950	*1960*	*1970*	*1980*	*1985*
Socialist countries					
Bulgaria	78.6	83.4	88.5	92.5	93.3
Czechoslovakia	52.3	67.3	79.9	91.3	92.4
East Germany	61.9	72.7	79.1	83.6	86.1
Hungary	29.0	51.8	69.4	83.2	84.7
Poland	66.4	69.1	79.5	83.2	84.7
Romania	75.8	76.4	79.5	83.1	85.1
Soviet Union	66.8	77.9	93.2	96.9	96.8
North European countries	30.9	39.9	53.8	69.9	71.1
West European countries	34.5	39.5	46.4	55.1	55.6
South European countries	22.4	25.3	29.7	35.7	37.1

Source: Compiled by J. Köllő for this book on the basis of International Labor Office (1987).

Note: The covered countries are Austria, Belgium, France, West Germany, the Netherlands, Switzerland, Luxembourg, United Kingdom (Western Europe); Greece, Italy, Malta, Portugal, Spain (Southern Europe); Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Romania, Soviet Union (socialist countries); the Scandinavian countries (Northern Europe). Regional averages are unweighted. The classification of countries by regions in this table is different from the ILO's original.

[Source: Kornai 1992]

You may think this was due to an underlying feminist trend, where the Soviet State pursued and achieved gender equality, since in the West, women entering the workforce was to a large extent a result of changing norms. Women fought to enter professions that were previously male-only. But in the USSR the reason for this increased female activity rate was that the socialist system needed workers, and women make up half of the population: a labour reserve they couldn't avoid tapping into. The feminist interpretation faces several issues:

- the abortion ban (reversed after Stalin in 1955)[20]
- the legal barriers to divorce introduced in 1936 (to encourage population growth)
- the fact that there were almost no women in the higher echelons of the Party, and that women were still the main carers of children and main doers of household chores (Mespoulet, 2015)

But why full employment and labour shortages? Kornai argues that this wasn't because of an explicit policy to ensure full employment (even though the right and *the duty* to work were enshrined in the Constitution of the USSR). Achievement of full employment was a by-product of the socialist system in its pursuit of growth.

This situation of chronic labour shortage (in Poland, for example, there were over 90 vacancies per job seeker, Kornai mentions) was seen as problematic by the Party, as it

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20 An even then, it wasn't because of a greater respect for women's rights, but because women were having abortions anyways, and illegal abortions are generally less safe. The relegalisation decree wasn't publicised, to avoid further increases in abortion rates, which illustrates that the Party attitude towards abortion depended on its impact on growth rather than a matter of rights, this later being closer to Lenin's views. (Field, 1956

While no official policy has been publicly promulgated, much emphasis is placed on 'the fight against abortion'. Potential dangers are publicized through extensive dissemination of brochures, medical bulletins, posters, and related materials. Some Soviet literature expresses a sense of moral indignation and censures women seeking abortion. Most research focuses on possible somatic sequelae. As one Soviet colleague explained to me, 'Every child must be wanted . . . abortion is available . . . but we must restrict abortion in spite of the permission for abortion.' Legal abortion is viewed as only a slightly lesser evil than illegal abortion. (David, 1974)

made their economic plans harder to fulfil. Thus planners tended to react by investing in labour-saving capital goods, promoting population growth, and so on.

From the factory manager's point of view, this situation induces them to 'hoard' workers: perhaps more workers will be needed in the future, but maybe they will not be available for hire, so they hire them now (or keep them if they already have them). At any given point in time, then, a factory is likely to have more workers than it actually needs. This, combined with low job effort from a fraction of demotivated workers leads to the concept that Kornai calls 'unemployment on the job'.

> *While open unemployment of the registered kind is absent and the labour force participation rate is high, open unemployment of the unregistered kind has not disappeared. In addition, there is chronic and general overmanning as well as voluntary and involuntary employment below skill level, i.e. underutilization of employed persons in terms of both working time and educational qualifications. Although underutilization of employed persons keeps open unemployment down, it has a number of adverse consequences, which should not be overlooked. Amongst other things it contributes to slack work discipline, low labour productivity, divorce of rewards from performance, low real wages, inflation, and shortages of consumer goods and services. (Porket, 1989)*

One way to think about this: assume that we have two economies that consist of people digging ditches.

Economy A uses the most efficient arrangement of people and capital for the task, but there exists some unemployment due to inefficiencies here and there, so that only 95% of working age people who want to work actually do so.

Economy B is the same as Economy A, but it has 100% employment, due to a government

mandate that those who would be unemployed are to be hired. People take shifts to dig ditches.

At the end of the day, the same length/number of ditches are dug in both economies.

Some people would like Economy B: everyone has a salary, and people work less. Great, isn't it? But the problem is that, assuming no companies go bankrupt and that firms in both systems have the same motivational systems and so on:

a) Salaries are lower for those who are employed
b) No extra labour is easily available for new projects
c) Some people work and earn less than they would like to

At the end of the day, it is a redistribution of wages and work time: some win and some lose. Alternatively, this could be seen as a tax on the employed to redistribute to the unemployed, but instead of doing it through taxes and benefits system as in the West, it's happening directly through the employment system. [21]

Porket dubs "overmanning" what is generally known as "underemployment", is a type of "hidden unemployment". Porket distinguishes three kinds:

- Employment in part-time jobs when a full-time job is desired

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21 Both economies have the same citizens and preferences, so citizens in Economy A already have a job-length distribution that they like. In Economy B, people would want to earn more (by working more), but they can't.

What about the unemployed in Economy A? If there are unemployment benefits, that will come from the incomes of workers, so perhaps the final distribution of salaries could be the same as in Economy B. If there were no productivity losses from job and wages redistribution, it would be a zero sum game. If there are, however–and Porket mentions that that was the case–then forcing full employment makes everyone worse off in the aggregate, and in the long run.

Workers, having now an advantage over employers displayed less work ethic, absenteeism, and could threaten employers with leaving if they were to be disciplined (after the Stalin period).

- Employment where people are forced to work in jobs for which they are overqualified

- Employment where companies employ more people than they need, given their technological conditions (the case of Economy B)

We now jump to post-Stalin history.

Between 1957 and 1961, so called 'antiparasite laws' were adopted in most of the USSR. These measures were to force everyone to do 'socially useful work'; noncompliers were punished with 2-10 years of forced labour in Siberia.

Some open unregistered unemployment existed:

> *Not surprisingly, this open unemployment stemming from a lack of vacancies was not officially quantified, so that its accurate volume remains a guess. But it is known that in 1959 10.0 per cent of men of working age and 27.4 per cent of women of working age neither participated in social production nor studied full time.*
>
> *Besides admitting the occurrence of both non-employment and involuntary open unemployment, naturally without using the term 'unemployment' which was reserved for capitalism, Soviet sources further admitted that employed persons were frequently underutilized, either because of involuntary employment below skill level, or because of overmanning.*
>
> *In order to remove this particular cause of overmanning, E. Manevich proposed in 1965 and again in 1969 a solution that in fact amounted to open registered unemployment. Instead of enterprises, special organizations should be responsible for the placement of the workers made redundant in connection with technological progress. Simultaneously, while between jobs, the workers in question should be provided*

for materially by the state. Not surprisingly, the proposal was not implemented. Open registered unemployment and unemployment benefits were unacceptable to the regime, because its ideology contended that socialism liquidated unemployment entirely and once for all and that under it technological progress went hand in hand with full employment of the able-bodied population. Thus, restrictions on dismissals were not lifted, so that enterprises shedding surplus workers remained responsible for their placement. (Porket, 1989)

Table 6.2 Participation in social production and full-time study

Year	*The share of the population of working age*	
	taking part in social production or full-time study (per cent)	*not taking part in social production or full-time study* (per cent)
1920	16.8	83.2
1926	19.2	80.8
1939	62.3	37.7
1959	81.1	18.9
1970	90.4	9.6
1979	94.0	6.0

Source: A. Kotlyar, 'Polnaya zanyatost' i sbalansirovannost' faktorov sotsialisticheskogo proizvodstva', Voprosy ekonomiki,' no. 7 (1983),p. 112.

[Source: Porket 1989]

Under the (1976) constitution, citizens had the right to work (i.e. to guaranteed employment and pay in accordance with the quantity and quality of their work, and not below the state-established minimum), including the right to choose their trade or profession, type of job and work in accordance with their inclinations, abilities, training and education, albeit subject to the caveat of considering the needs of society. On the other hand, it was the duty of and a matter of honour for every able-bodied citizen to work conscientiously in his/her chosen, socially useful occupation, and strictly to observe work discipline. Socially useful work and its results determined a person's status in society. Evasion of socially useful work was incompatible with the principles of socialist society […]

To sum up, the official unemployment rate was zero, almost by institutional definition: You couldn't sign up for unemployment benefits. Companies hoarded labour.

However, non-registered unemployment existed for people who had quit their jobs and moved to another location, or had just begun working. While at an aggregate level, there were many more jobs than workers, in a micro scale, the geographical and skill distribution of these jobs did not match efficiently with the location and skills of the workforce.

Breaking down this by parts, a fraction were people switching jobs:

a) there were no long-term unemployment benefits, people had lots of incentives to quickly look for another job.
b) There were lots of vacancies.
c) 'Uninterrupted service' a legal concept that was important to receive social security benefits. If a worker was without employment for more than three weeks, they would lose the status of "uninterrupted service" and thus also lose benefits.
d) Anti-parasite laws that made punishable not having a 'socially useful' job for more than four months.

Another part of this unregistered unemployment were women who quit their jobs to have and raise children.

Yet another part was youth unemployment. Young (<18) people were entitled to a variety of privileges, like having to work fewer hours for the same pay a full-time worker would get. Ceteris paribus, companies preferred older workers—presumably for the same reasons that lead older workers to earn more in capitalist countries. The USSR reacted to this by imposing quotas on companies (between 0.5 and 10% of the workforce, depending on the company had to be 18 or under).

Further, to ease up the transition from school or university[22] to work, the State planned which companies would hire which worker in advance, which sounds like it would solve any problem with that transition, but in practice, argues Porket, it didn't work particularly smoothly. Enterprises frequently refused to hire, arguing that their needs had changed, graduate didn't show up to their assigned job, or left before they were supposed to.

CONCLUSION

The Soviet economy, by its nature, found it easy to achieve full employment. Whereas in most capitalist economies workers can claim benefits when they are out of work, not only did these not exist in the USSR, there were extensive *penalties* for being out of work. Due to the incentives managers had to hoard labour, and the limited incentives they had to cut labour costs, there were extensive vacancies. The flipside of this was 'unemployment on the job'—idling, low effort, and overmanning in general. (Gregory and Collier, 1988, Ellman 1979)

22 Under Stalin, higher education meant engineering to a large extent. Half of university students pursued degrees in engineering, the rest were pure sciences, agricultural sciences, and medicine. Humanities and social science departments were mostly defunded. (Spufford, 2011)

Chapter 5: Work & Retirement

Looking at the Soviet labour "market" from a macro perspective, we learned that their economy managed to achieve full employment, at the cost of low productivity and overmanning. In this chapter we turn to a micro perspective: hours of work, holidays, work satisfaction, and retirement. A good start is the Soviet Constitution of 1936:

ARTICLE 119. *Citizens of the U.S.S.R. have the right to rest and leisure. The right to rest and leisure is ensured by* ***the reduction of the working day to seven hours for the overwhelming majority of the workers,*** *the institution of annual vacations with full pay for workers and employees and the provision of a wide network of sanatoria, rest homes and clubs for the accommodation of the working people. (Soviet Constitution 1936)*

This would imply a 35-hour workweek. But a few decades later, the Constitution changed:

Article 41. Citizens of the USSR have the right to rest and leisure.

This right is ensured by the establishment of a working week not exceeding 41 hours, for workers and other employees, a shorter working day in a number of trades and industries, and shorter hours for night work; *by the provision of paid annual holidays, weekly days of rest, extension of the network of cultural, educational, and health-building institutions, and the development on a mass scale of sport, physical culture, and camping and tourism; by the provision of neighborhood recreational facilities, and of other opportunities for rational use of free time. The length of collective farmers' working and leisure time is established by their collective farms. (Soviet Constitution 1977)*

Hours of work

According to one International Labor Organization report (1994), pre-revolutionary Russian workers worked 10-12 hours per day, six days a week. That's a lot: 60-72 hours per week. After the Revolution, an 8 hour day was imposed, but workers still toiled for six days per week. The USSR transitioned to a 7 hour day between 1927-1933. Still, this was a six day week: the average worker worked 40.3 hours in an average week.

In 1929, the authorities decreed the country would transition to a 5-day week, but the demands of rearmament dragged it back up to eight hours a day, 6-days a week just before World War II. After the war, it went down to seven hours (1956-1960), but was still six days a week. These ILO assessments show the same thing as the CIA's 1961 report.Source: ILO report.

Table 1: Dynamics of established duration of a working week for adult workers in USSR industry between 1955-1986 (hours).

Sector	1955	1979	1986
All sectors of industry including:	47.8	40.6	40.5
Coal industry	47.6	35.6	33.8
Black metallurgy	47.9	40.8	40.8
Chemical and oil industry	46.4	39.9	40.0
Machine building &metal processing	47.8	40.9	40.9
Light industry	47.9	40.9	40.9
Food industry	48.0	41.0	41.0

Source: Narodnoe hoziaistvo SSSR za 70 let, Moskva, 1987.

It was only between 1961 and 1967 that the Soviets finally and permanently switched to a 5 days week, finally giving Soviets citizens a real weekend, like those in the West. But this did not suppose a reduction in the number of hours worked per week: The workday was lengthened to keep work hours constant. Bronson (1968) sees this as an abandonment of Soviet commitment to continuously reduce the workday and workweek, and overall agrees with the ILO report. He also mentions that there were night shifts. In the textile industry, 60% of people worked at night at some point by 1960. In 1966, a 35-hour working week was proposed. This would have been 6-hours per day, 6 days per week or 7 hours per day, 5 days per week. But it was never implemented, contrary to what some have claimed. In 1987, the maximum number of hours was limited to 40 per week, with more in some sectors (agriculture, construction, transport), and less in others (education, art and culture, or coal mining).

The trends through the years can be seen in the next table overleaf:

TABLE 1.14 *Average length of the work week in the Soviet Union*

	Industrial workers	*All blue-collar and white-collar employees*
1913	58.5	—
1955	47.8	—
1960	41.6	—
1963	41.6	—
1969	40.7	39.4
1970	40.7	39.4
1975	40.7	39.4
1977	40.6	39.4
1980	40.6	39.4

SOURCE *Narodnoe Khoziaistvo SSSR*, various years.

[Source: Moskoff (1984)]

We can finally see how this compares with the OECD:

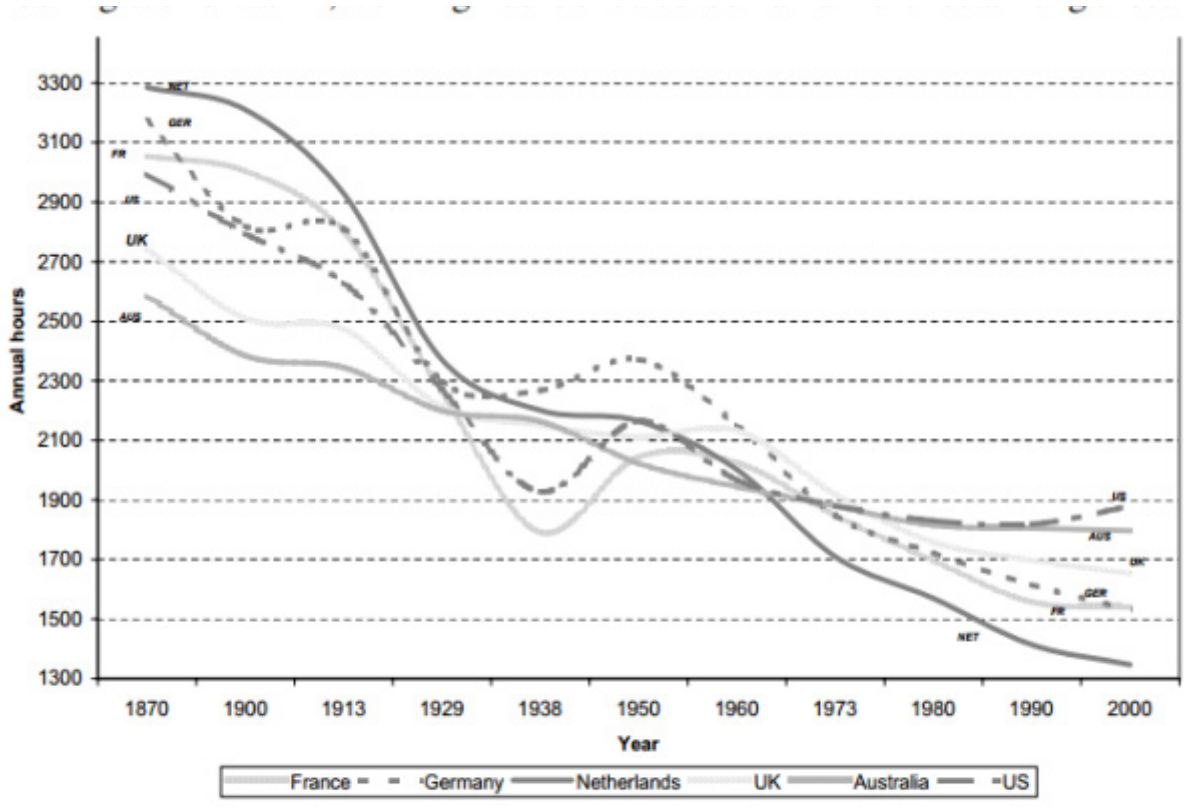

Figure 3.1 Historical trend in annual working hours in selected countries (1870–2000)

Source: Huberman 2002.

[Source: Lee et al. (2007)]

According to the previously cited ILO report, working time in the USSR was set at 2040 hours per year in 1986. So Soviet workers were working 100 hours more than their counterparts in the West. Max Roser[23] has substantial amounts of data for many different countries, and he also agrees thatby 1986, no country in the West worked more than 2000 hours per week-person on average.

Holidays

In the immediate aftermath of the Russian civil war, Soviet citizens were entitled to one month of holiday. This was reduced to 2 weeks in 1921. In 1941, holidays were eliminated due to World War II, but workers received extra compensation. In 1942, the extra compensation was eliminated too. In 1945, the two-week holiday came back, staying constant until the time Moskoff wrote his book.That is the legal minimum, but the actual number of holidays that were taken was above that (like in the West): 18.5 days (1958), 19.3 days (1964), and then 20.9 (1968) and 21.6 (1977) days.

How does this compare with the West? According to Moskoff, the workers in half the OECD countries hade more holidays than in the USSR back in 1973, while the rest have roughly the same. These 19-21 days of effective holidays is an average, again like in the West. In 1964, workers in the field of education enjoyed the most: more than a month of holidays, while workers in state farms had only 14 days.

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23 https://ourworldindata.org/working-hours/

TABLE 6.1 *Minimum length of holidays, OECD countries, 1973*

Holiday length	*Countries*
Four weeks	France (collective agreements), Norway, Sweden
Three weeks	Belgium, Denmark, Finland, France (legislation), Luxembourg, Switzerland (small cantons), United Kingdom (most collective agreements)
Fifteen days	West Germany, Netherlands (collective agreements)
Two weeks	Austria, Canada, Iceland, Italy (collective agreements), Netherlands (legislation), Spain, Switzerland (federal), the United States

SOURCE Archibald A. Evans, *Flexibility in Working Life* (Organisation for Economic Co-operation and Development: Paris, 1973) pp. 67–8.

Table 2: Distribution of the number of workers and employees according to the duration of a working week in different sectors (1 July 1987)

Sector	All adult workers & employees (%)	Duration of working week in hours: 40	38.5	36	33	Average duration of a working week (hrs)
The whole economy	100	89.5	2.3	4.0	4.2	40.0
Industry	100	94.4	0.1	3.7	1.8	40.6
Agriculture	100	98.8	0.1	1.1	0.0	40.9
Construction	100	98.4	0.0	1.2	0.4	40.9
Transport	100	99.1	0.1	0.7	0.1	41.0
Communication	100	93.9	0.1	5.9	0.1	40.7
Trade & public catering	100	96.3	0.0	3.7	0.0	40.8
Housing	100	99.4	0.2	0.3	0.1	40.8
Health care & social security	100	38.4	38.1	17.4	6.1	38.5
Education	100	47.8	0.2	12.3	39.7	32.2
Art & culture	100	86.9	0.1	2.5	10.5	38.8
Science	100	93.8	0.2	5.7	0.3	40.7
Administration	100	99.5	0.2	0.2	0.1	41.0

Source: Narodnoe hoziaistvo SSSR v 1987 godu. M., 1987.

[Source: ILO report]

Leisure time

William Moskoff's Labour and Leisure in the Soviet Union (1984) argues that that leisure in the USSR wasn't as enjoyable as in the West.

Reflecting the Marxist emphasis on the primacy of work for the self-fulfillment of citizens, low priority was given to the production of recreational and cultural goods, to the point that leisure could be seen as just a period to rest to be ready to work again. In 1971, during the 24th Community Party Congress, First Secretary Leonid Brezhnev went as far as claiming that "Free time is not time free from responsibility for the society", which has to be read in conjunction with another writer from that time cited by Moskoff:

> *'Individual development of a worker is connected above all with the effectiveness of socially useful activity. That is why the society requires of its members conscious submission of personal interests to social interests. This affirms not only the value of free time in all its richness, but also the value of human life … What definite set of values finds its realisation in the activity of youth in free time? It is interested in definite orientation to basic social values of the society. And that defines the limits of possible activity of a young worker's leisure activity*

Retirement

Regarding pensioners, men had a right to pension at 60, and women at 55. Men in harmful or dangerous occupations retired between the ages of 50 and 55 years; for women it was between 45 and 50. Some pensioners also worked to supplement their pensions, which shows that they wouldn't have been particularly generous.

TABLE 2.3 *Working pensioners as a percentage of all pensioners, USSR, 1956–75*

1956	59.0	1968	15.9
1957	28.6	1969	18.9
1958	19.2	1970	19.0
1959	15.1	1971	20.5
1960	11.7	1972	21.3
1964	10.1	1973	22.3
1965	12.5	1974	23.4
1966	14.0	1975	24.3
1967	15.2		

SOURCE M. S. Lantsev, *Sotsial'noe Obespechenie v SSSR* (Moscow, 1976) pp. 127, 131 and 137.

[Source: Moskoff (1984)]

Collective farmers, however, did not gain the right to old-age pensions until 1964, and so they had to work during old age or be supported by others voluntarily. They retired 5 years later than in the state sector.

Overtime

Overtime wasn't supposed to be much used, and the maximum was 120 hours per year (less than three per week) per worker. Overtime was only allowed for select purposes: production for national defense, coping with natural disasters, keeping public utilities working, completing scheduled work that wasn't finished during regular hours, repairing essential equipment, and to fill in for a no-show on an assembly line. Overtime could not be refused unless there was an official exemption, which existed for under-18s, pregnant women, nursing mothers or mothers of infants, the severely ill, and students.

In theory factory managers had to put requests for overtime by the local trade union committee, but in practise it was always granted. Labour unions were weak.

Overtime at night, which tends to command higher pay rates in the West, as other work schedules are generally preferred, did not command such premia in the USSR, which further highlights the weak position the workers were in vis-à-vis the State.

Self-fulfilment at work

As we have mentioned, one of the promises of communism was to abolish the alienation of the worker. For Marx, work was seen as a very important part of a person's life, and he saw waged labour as breaking the link between one's work and the final product produced, which an employee isn't entitled to under capitalism. Modern day communists see many jobs in current market economies as an example of this phenomenon. Hence the phrase 'bullshit jobs': meaningless, repetitive jobs. This analysis seems to forget that even in utopia someone has to clean the floor and flip the burgers.[24] The Soviet Union didn't pay workers for the value that they produced, but Soviet wage scales did seem to track how physically demanding work was.

According to Soviet ideology, the abolishment of private ownership of the means of production will put an end to the alienation of labor. At the same time, however, the Soviet Union does not deny the fact that unpleasant working conditions exist in certain places. During the last 20 years, poor working conditions were seen as a transitory phenomenon that would disappear as a result of the imminent scientific-technological revolution. In reality, Soviet working conditions leave much to be desired according to recent finding s in Soviet empirical sociology. (Johnson & Raynes (1984))

One of the goals of Soviet socialism was, in reference to the above, to instil in people a lik-

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24 To see the problem here, imagine a chain of worker-owned burger joints. In order to stay in business, someone will have to cook, and someone will have to clean. From the worker point of view, work is done, and a salary is paid at the end of each month. Only for someone who has a very strong warm feeling due to knowing that the floor they are cleaning is partially owned by them would find this situation much different.

ing for the work they were doing, to remind them that now they were working for themselves, and that what they were producing was theirs—or at least, a fraction of it was. But it didn't work out as well as hoped. Johnson and Raynes mention two official polls, conducted in 1960 and 1970, regarding attitudes towards work, but rather than an eventual shift towards appreciating labour, workers shifted in the direction of seeing work as a means for further goals rather than an end in itself. Soviet sociologists attribute this to the increased consumption and education levels of the newer generations, as far as these were behind standards in the West. If what one can do outside of work is more enjoyable, then naturally work will be seen as relatively less desirable.

Conclusion

The average workweek in the late Soviet Union was around 40 hours. To this baseline workweek, some overtime was added to meet production quotas. Soviet workers had 21.6 days of holidays per year, less than half the OECD countries at that time, and similar to the other half. Regarding retirement, it's hard to estimate an average age of retirement for the USSR, as a sizable number of retirees kept working after retiring. For example, 48% of males and 20% of females aged 66-70 were working in the USSR while they earned a state pension (Anderson, 1986). In the West, retirement ages were some 5 years higher, but rates of old-age work were lower.

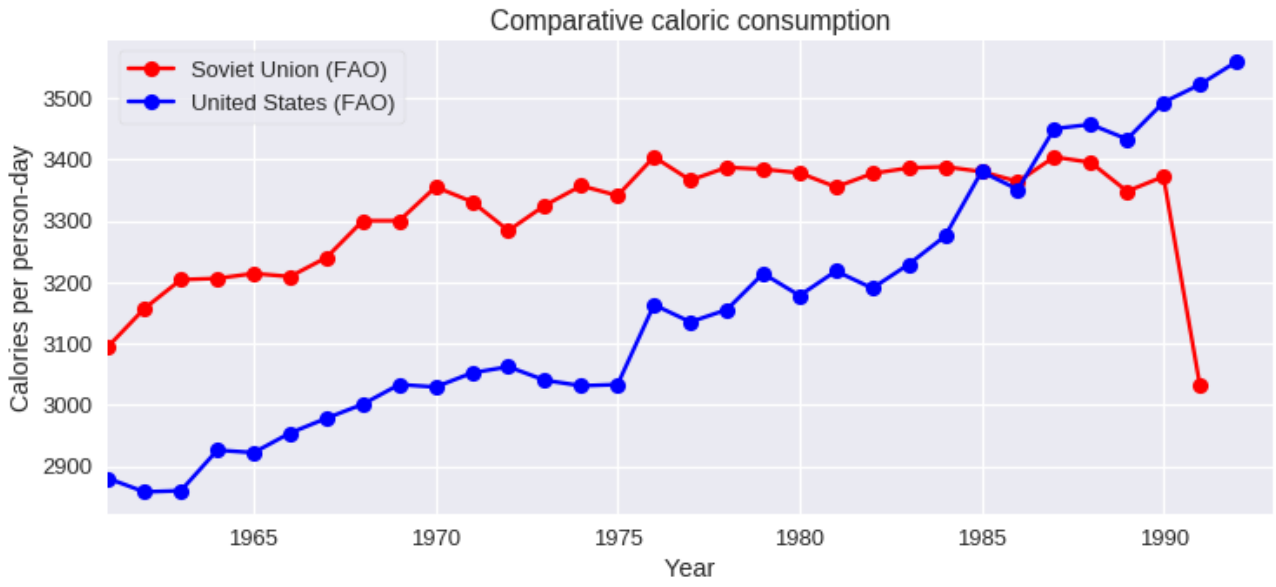
I conclude that if you were a worker or retiree back in the 70s-80s, it was better to work and retire in the West, compared to the Soviet Union, holding consumption levels, freedom, and so on constant.

LIFE IN THE USSR

CHAPTER 6:

THE CALORIE PARADOX

(I) The Paradox

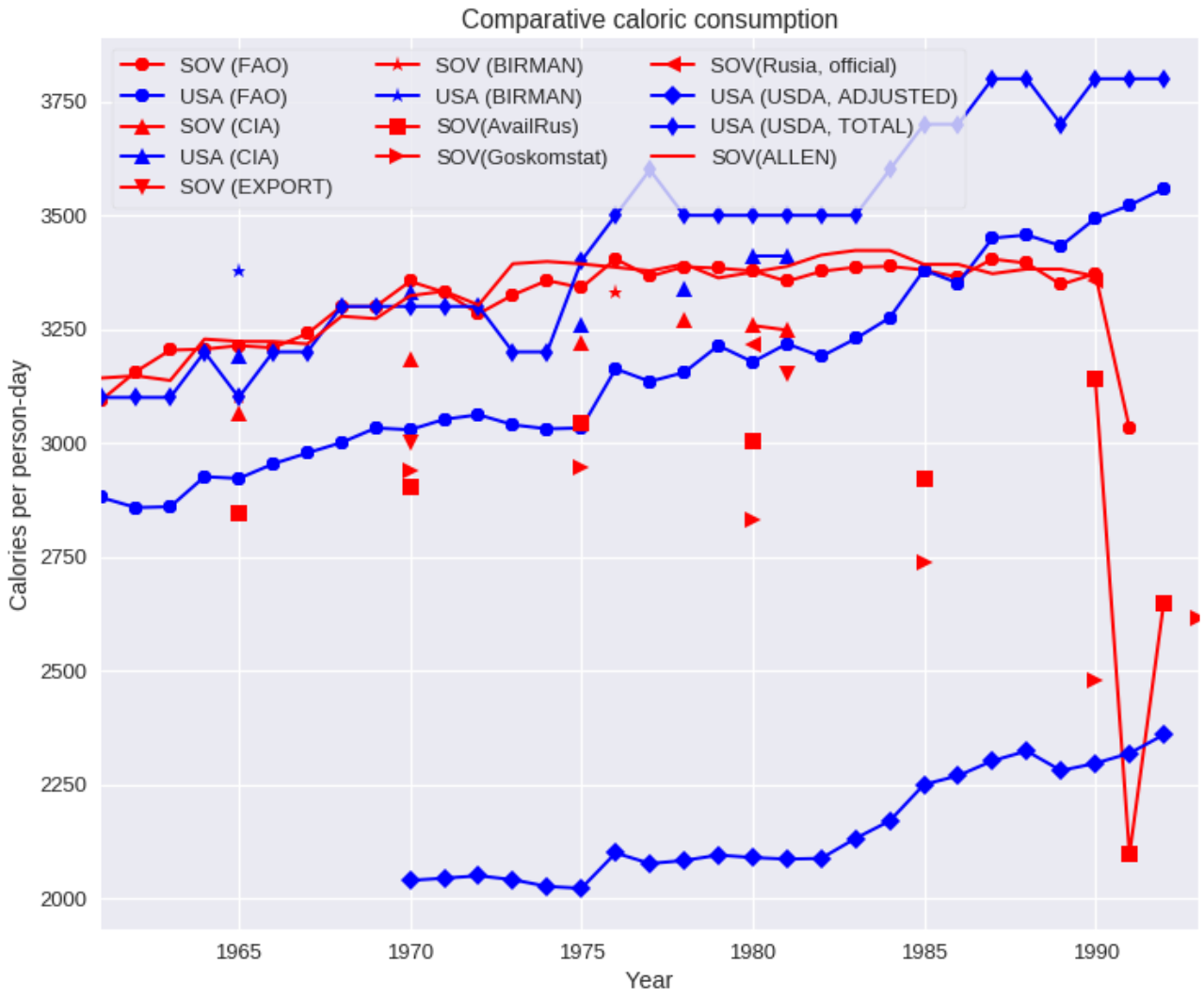


One initial explanation might be that people in cold weather climates need to consume more calories than those in warmer ones, but Finland also has lower caloric intake than

the USSR. Higher caloric intake is not necessarily a sign of wealth: Japan's is relatively low, despite being a wealthy country.

The FAO data comes from its food balance sheets series, showing annual domestic food production plus imports minus exports, plus stocks left over from the previous year. This contrasts with household surveys, in which people are asked how much they are actually eating.

In my second chart, I gathered many different sources.



There is a huge spread in the data. Below I explain where each data series comes from. FAO data comes from the mentioned Food Balances.

- CIA data comes from a report from 1984, released in 1999. The Nutrient Content of the Soviet Food Supply. Like FAO's, these figures are for food supply, not consumption, which is lower because of losses due to things like spoilage (this report says that the nutrient content of Soviet food supply matches the US's). Carbohydrate intake is higher, and fat intake is lower, but gaps were narrowing. The CIA's analysts also estimate that losses between production and consumption are higher in the USSR than in the US, and indicate that the high caloric consumption is problematic from a public health perspective. Food availability differed widely between regions in the USSR. For example, annual fruit consumption per capita in the Russian SFSR was 40 kg per person, while the Siberian region just consumed 12 kg. Meat consumption in Estonia was 80 kg, but just 31 kg in Uzbekistan. (Data for 1975-1981)

- EXPORT data comes from a report written in 1986, Soviet Foreign Trade in Foodstuffs: A measure, by Vladimir G. Treml, written for the US Bureau of the Census. Among other things, he notes the enormous increase in food imports (especially grain) that happened between 1970 and 1981. According to him, the FAO figures published then (3400 cal per day for 1975-77) overstated actual intake mainly due to wrongly calculating the nutritional composition of Soviet foodstuffs (compared to official Soviet data). The CIA data he references is higher than official Soviet data, but lower than FAO's. He discusses some funny incidents, like Novosti, the Soviet news agency, reported daily caloric consumption in the USSR by giving the CIA figure from 1980. Treml rejects FAO data as too high, and gives a range of estimates for 1970 (2900-3100) and 1981 (3000-3300). He also says that both Soviets and Western analysts are probably overestimating Soviet nutrient quality.

- BIRMAN comes from Igor Birman's book *Personal Consumption in the USSR and the USA* (1981). Birman argues that caloric consumption in the USSR is a little less than in the US, even though it should be higher due to a younger population that performs more arduous work in a colder environment. Birman gives a figure of 3330 for 1976 (vs 3380 in the US). His data comes from *Narodnoye khozyaystvo SSR v 19-9odu: statisticheskiy yezhegodnik* (a yearbook published by the Soviet Union.)

- AvailRus comes from Nutritional Risk Factors in the Former Soviet Union, a chapter in a book by the US's National Research Council. They reference data from a consumer survey made by Goskomstat, the official statistics agency in the USSR that (according to the authors) had the problem of not using a representative sample (not that it was small, as it covered 49,000 people).

- The Goskomstat item is food balance data from official Soviet sources, also from the previous sources.

- Russia (official) refers to official statistics of food consumption in kg coming from this book that references Torgovlya SSSR (another statistics yearbook), and converted to calories used coefficients developed by the US Dept. of Agriculture

- USDA adjusted and unadjusted is data from the US department of agriculture. Unadjusted can be read as 'food supply', and adjusted is accounting for food losses, trying to reflect how much people are actually eating. See figure 2.1 here. You can get the series from USDA's website.

- ALLEN is data from Robert Allen's *From Farm to Factory*. He takes raw data from FAO and calculates his own data series, explicitly accounting for food losses. The end result is identical to official FAO data. He takes other researchers

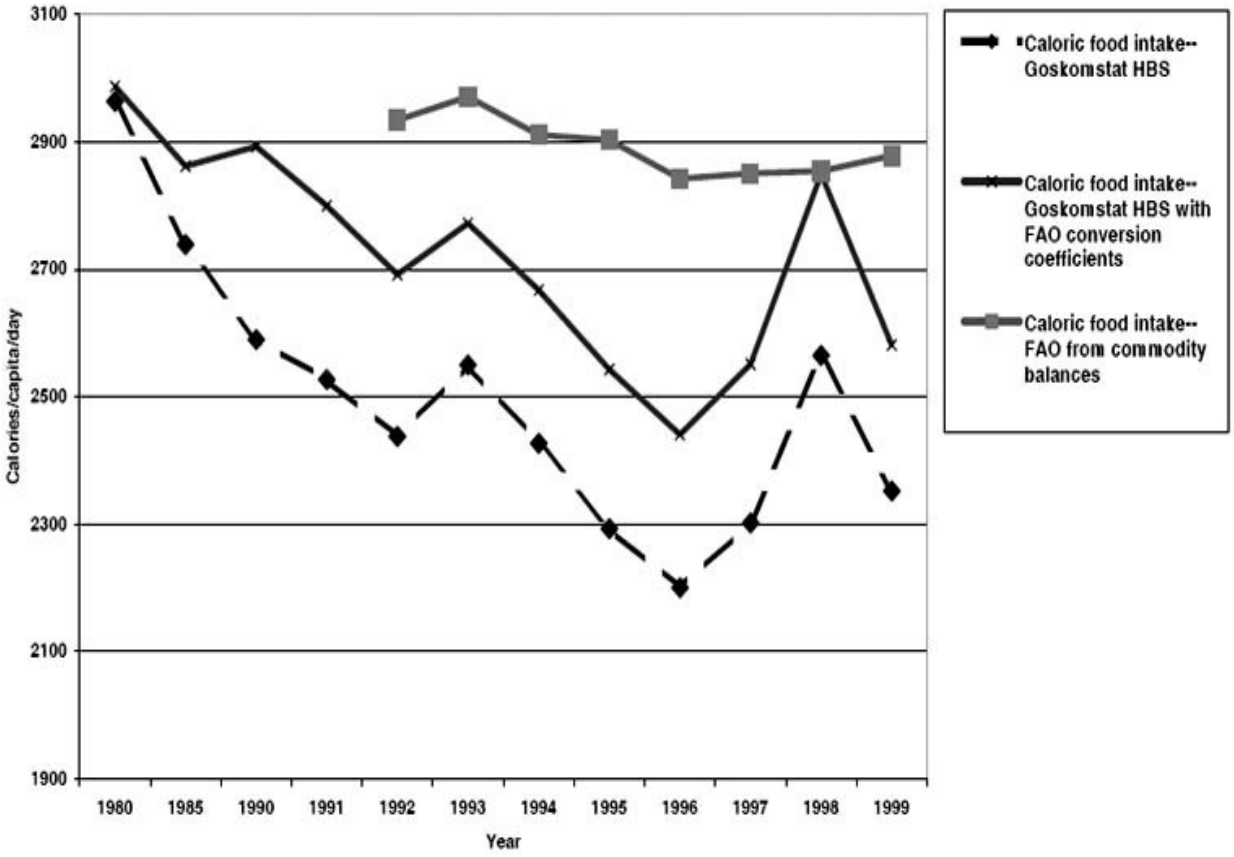
(Wheatcroft, Jasny) into consideration, so his estimate is meant to be an all-things-considered one.

The problem with this is that sources who are trying to do the same (USDA and FAO) get different results. The FAO's series looks like USDA unadjusted series. But FAO's series also look like Allen's, and Allen's are supposed to take losses into account. So someone is making a mistake somewhere. We could perhaps believe the *official* Soviet data rather than FAO's. But according to FAO[25], the Goskomstat surveys have two problems: one is that it oversamples lower income households, and that the coefficients used to convert food weight into calories are 15-20% lower than FAO's. They conclude that "with such large differences, it is difficult to say much about the level of caloric consumption with any confidence". And even if we took the official consumption data, that supposedly would be accounting for losses, it is still far from the similar figure for US intake from USDA, so differences in methodology must be present.

My conclusion is then that, based on the data above, **Soviet caloric intake was high enough** to say Soviet citizens were reasonably well fed, *in terms of calories*.

25 http://www.fao.org/docrep/007/y5069e/y5069e05.htm

Here is how the picture changes when using different coefficients to convert kg of food into calories:



The lines trending down are official Goskomstat data, consistently lower than FAO's estimates.

Explaining the paradox

A possible explanation for these diverging trends or wedges between household surveys and macro accounts is that the USSR wasted more food. There is indeed some evidence of that.

In the Soviet Interview Project, they mention that even when the USSR was the world's largest milk producer, only 60% of this milk was consumed by humans (36% was fed to animals and the remaining 4% was wasted). This number was around 90% in the case of the

US. Official Soviet sources (mentioned in pp. 491-541) also confirm the high level of waste and inefficiency in the food supply chain.

A recent dissertation (Hamm, 2012), also touches upon the topic of food waste:

> *Dronin and Bellinger (2005, 310) point out,* ***per capita consumption figures likely overstate actually available amounts, given that the Soviet Union's inadequate transportation and storage infrastructure led to frequent shortages in stores, as well as significant loss of foodstuffs and raw products due to spoilage****.*
>
> *Both foreign observers and the Soviet press repeatedly noted the discrepancies between official production statistics and actual availability of food in stores.* ***In 1988, at the height of perestroika, it was revealed that Soviet authorities had been inflating meat consumption statistics; it moreover transpired that there existed considerable inequalities in meat consumption, with the intake of the poorest socioeconomic strata actually declining by over 30 percent since 1970*** *(Dronin and Bellinger 2005).*
>
> *Throughout the Soviet era, various and seemingly persistent problems had emerged to plague the country's food system.* ***Government experts estimated that the elimination of waste and spoilage in the production, storage, and distribution of food could have increased the availability of grain by 25 percent, of fruits and vegetables by 40 percent, and of meat products by 15 percent*** (Library of Congress 1991).

Table 8.2 shows the breakdown of the diets of both the US and the USSR. Relative to the US, Soviet citizens consumed around half as much meat and two-thirds as much total (fresh and canned) fruit, about a third more in dairy products, and markedly more potatoes – around twice as much per year.

Table 8.2 **U.S.A.: Annual Food Consumption Per Capita**

(In kilograms, except as indicated)

Food	1980	1985	1986	1987	1988	1989*
Total flour and cereal products[1]	69.0	72.7	74.4	77.3	78.0	75.9
Wheat flour	53.0	56.4	56.8	58.7	58.7	55.7
Milled rice[2]	4.3	4.1	5.3	6.1	6.5	7.1
Other[3]	11.7	12.1	12.3	12.4	12.8	13.0
Total red meat[4]	81.7	79.9	78.7	76.8	78.2	75.6
Beef	46.9	48.4	48.7	46.9	46.4	44.3
Veal and Lamb	1.5	1.7	1.5	1.3	1.3	1.2
Pork	33.3	29.9	26.6	26.8	28.6	28.4
Poultry products[5]						
Chicken[5]	22.6	26.2	26.7	28.5	29.3	30.9
Turkey[5]	4.8	5.5	6.0	6.9	7.2	7.8
Eggs (units)	271.1	254.5	252.5	252.6	244.3	234.3
Dairy products, total[6]	246.7	268.8	267.7	271.7	263.5	256.5
Fats and oils, total[7]	26.0	29.1	29.1	28.5	28.5	27.6
Caloric sweeteners, total[8]	56.3	59.2	58.8	60.0	60.2	60.4
Fruits						
Fresh[9]	40.9	40.4	43.4	45.7	44.9	43.9
Canned[10]	4.6	3.8	3.9	4.0	4.0	(NA)
Dried	1.0	1.3	1.3	1.2	1.3	1.5
Citrus juices[11]	15.3	18.3	19.6	18.2	18.1	16.3
Vegetables						
Fresh[9,12]	36.7	40.1	40.1	42.2	43.7	45.1
For processing[9]	47.7	47.5	46.9	47.1	45.5	(NA)
Dry beans	2.4	3.2	3.0	2.3	2.6	(NA)
Potatoes for fresh market[9]	23.2	21.2	22.4	21.9	23.8	21.2
Potatoes for processing[9,13]	28.7	34.6	34.4	35.0	32.4	34.8

(NA) Not available. * Data for 1989 are preliminary.

NOTES: Except for fluid milk, all data are based on U.S. total population. Fluid milk data are based on resident population. Total is computed from unrounded data; therefore, components may not add to total.

[1]Data consist of most items at processing level. Excludes quantities used in alcoholic beverages and fuel.
[2]Rice consumption is for the year beginning August prior to year stated.
[3]Total less wheat flour less milled rice. Includes corn products, barley products, breakfast cereals, rye flour, and net pasta imports.
[4]Carcass weight. Includes processed meats on a fresh basis. Skeletal meats; excludes edible offals.
[5]Data for chicken and turkey on a ready-to-cook basis.
[6]Milk equivalent, milkfat basis. The fat content of butter and margarine is 80 percent of product weight.
[8]Dry weight. Includes edible syrups (maple, molasses, etc.) and honey on dry weight basis. Excludes low calorie (artificial) sweeteners.
[9]Farm weight.
[10]Product weight. Excludes apples, applesauce, cranberries, pineapples, and citrus sections.
[11]Canned, chilled, and frozen; single-strength equivalent.
[12]Farm weight.Includes lettuce, onions, tomatoes, asparagus, broccoli, carrots, cauliflower, celery, sweet corn, artichokes, garlic, and eggplant.
[13]Potatoes used for processing to produce frozen, canned, and dehydrated potato products, and for potato chips.

SOURCES: U.S. Department of Agriculture, Economics Research Service, *Food Consumption, Prices and Expenditures*, annual; and unpublished data.

Table 8.2 **U.S.S.R.: Annual Food Consumption Per Capita**

(In kilograms, except as indicated)

Food	1980	1985	1986	1987	1988	1989
Meat and meat products, in meat equivalent Total[1]	58	62	62	64	66	67
Without fat and subproducts	50	54	55	56	58	59
Milk and milk products, in milk equivalent	314	325	333	341	356	363
Eggs (units)	239	260	268	272	275	268
Fish and fish products	17.6	18.0	18.6	18.0	17.6	17.2
Sugar	44.4	42.2	44.0	47.2	46.8	42.5
Vegetable oil	8.8	9.7	9.8	10.0	10.1	10.4
Potatoes	109	104	107	105	99	98
Vegetables and melons	97	102	102	100	101	95
Fruits and berries[2]	33	41	47	44	43	41
Bread products[3]	138	133	132	132	131	129

[1]Slaughter weight basis, includes fat and sub-products. Includes poultry.
[2]Excludes fruits and berries used to produce alcoholic beverages. Includes canned fruit, juices, and other fruit products in fresh equivalents.

Of course, quality matters as much as quantity. Gertrude Schroeder, a CIA analyst who spent four months in 1967[26] in different Russian cities, reports that the quality of life and goods was worse than she had expected just from reading the literature. Queuing was prevalent at least during that year. By 1989, they were even more prevalent. (Gray, 1989 pp. 19-25). Apparently, they had begun around 1965 due to increased consumption and subsidised food prices.

There is a body of literature (MacEachin, D. J. (1996), Ellman (2002), Wilhelm (2003)) dealing with the fact that the CIA consistently overestimated Soviet's quality of life, and the health of the economic system in general. As such, we should be careful using old CIA reports, and give more weight to more recent assessments of the data if those are available.

A CLOSER LOOK AT HOUSEHOLD SURVEYS

James R. Millar's *Politics, work, and daily life in the USSR (1987)* is based on the Soviet Interview Project's interviews of Soviet émigrés (N=922) held in the early 80s. Asking lots of people about their own experiences may be a good alternative to official statistics, whether they tell the same or a different story.

In these interviews, citizens reported daily queuing, low quality goods, and occasional supply shortages. Most respondents said that there were deficits in meat supply. However, almost everyone had some meat (as well as cheese, kefir, milk, and eggs) several times per week, and the majority had them daily. One explanation of why there was queuing and shortages while at the same time they were eating meat almost daily is that there existed a legal private market (*rynok*):

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26 Schroeder, G. E. (1968). Soviet reality sans Potemkin. *Studies in Intelligence*, *12*(2), 43-44.

Table 2.10. *Dietary frequencies: meat, cheese, kefir, milk, and eggs*

	Meat	Cheese	Kefir	Milk	Eggs
Daily					
N	575	738	635	672	514
%	62.4	80.0	68.9	72.9	55.7
Several times per week					
N	265	144	220	155	319
%	28.7	15.6	23.9	16.8	34.6
Several times per month					
N	16	14	21	25	40
%	1.7	1.5	2.3	2.7	4.3
Several times per year					
N	1	0	1	1	6
%	0	0	0	0	0.6
Missing values					
N	6.5	26	45	69	43
%	7.1	1.8	4.9	7.5	4.7
Total N	922	922	922	922	922

This doesn't tell us anything about the quality of these goods: Schroeder, the CIA analyst reported that Soviet meat, or lettuces weren't as good as Western equivalents.

An additional problem of this survey is that:

> *The SIP sample obviously was not a random, probability sample of the general population of the Soviet Union. In addition, our respondents voted with their feet and have faced the trauma of relocation in the United States. Any bias raises a question about the reliability and generalizability of survey results. […]*
>
> *The frequency distributions presented in sections 6 through 9 of The Soviet Interview Project General Survey Codebook cannot be taken as estimates of the frequency distributions that would be obtained from a probability sample of Soviet citizens. Simple-minded attempts to*

use the distributions in such a manner will be likely to yield misleading results.

Tables 4.4 and come from Philip Hanson's *The Rise and Fall of the Soviet Union* (2003:):

Table 4.4 *Some indicators of Soviet consumption, 1965–73 (physical units)*

	1965	*1970*	*1973*
Per cap. food cons. (kg p.a.)			
Meat	41	48	52
Dairy products	251	307	307
Fish	12.6	15.4	16.2
Potatoes	142	130	142
Green vegetables	72	82	85
Fruit	28	36	40
Per cap. cons. of soft goods			
Cloth (m^2)	26.5	30.4	32.7
Knitwear (units)	4.2	5.3	5.7
Footwear (pairs)	2.4	3.0	3.0
Stocks of durables (per 1,000 pop.)			
Radios	165	199	216
TVs	68	143	195
Cameras	67	77	77
Motor-cycles	17	21	23
Refrigerators	29	89	142
Washing-machines	59	141	173

Source: Schroeder 1975, Table 1.

Table 4.5 *Soviet consumption levels: selected comparative indicators, 1968–73 (food items in kg per head per year; consumer durable stocks in units per 1,000 population)*

	USSR 1973	*US 1971*	*UK 1970*	*USSR Rational cons. norms 1968*
Food consumption				
Bread	145	65	73	120.4
Potatoes	124	66	102	96.8
Meat	52	110	76	81.8
Eggs (number)	195	321	283	292
Milk	307	254	216	433.6
Stocks of durables		*US 1972*	*UK 1972*	
Radios	216	1695	340	
TVs	195	474	305	
Phones	53	627	314	

Sources: Schroeder 1975, *loc.cit.*; Bush 1975, Tables 1 and 2; rational norms: Artemova 1969.

Hanson writes that:

> *Overall, consumption as estimated by Schroeder and Denton increased at 5.2 per cent a year between 1964 and 1973, or 3.9 per cent per annum per head of population (op. cit., Tables A-1 and A-2). It was not, by West European or North American standards, a time of plenty, but it was unquestionably a time of real improvement. Schroeder (1975) provides per capita indicators as shown in Table 4.4. These improvements left the average Soviet household well ahead of people in really poor countries but still substantially behind people in the rich world. Soviet consumers were also consuming less than their own planners officially considered to be required by the 'rational consumption norms' they had devised.*
>
> *The comparatively low quality of the Soviet diet, with its heavy reliance on bread and potatoes, is clear from Table 4.5. The exception is the comparatively high figure for milk (in fact, milk*

and dairy products), but this is slightly misleading. Fresh milk remained scarce in the cities, and a very large proportion of milk output was turned into the ubiquitous, and not unpleasant, Soviet cheese: almost certainly a larger proportion than people would have freely chosen had processing, refrigeration and distribution been more advanced.

[…]

Soviet citizens, despite the general improvement in consumption levels, had to cope with pervasive inefficiency in the production and distribution of food and manufactured consumer goods. There was at this time quite extensive discussion in the Soviet press of the problem of accumulating inventories of poor-quality or simply unwanted items (Schroeder 1975). This problem coexisted with shortages of many items: in other words, demand for those items exceeded supply at the controlled retail prices. Queues and black market deals were everyday experiences for Soviet citizens in the early 1970s, just as they had been ten or twenty years earlier. Food other than bread and potatoes tended to be defitsitnyi (deficit, or in short supply). The very vocabulary, defitsitnyi, with its opposite, nedefitsitnyi (not in short supply), suggests the scale of the problem.

Finally, there is Igor Birman's *Personal Consumption in the USSR and the USA (1989)*. Birman was born in Moscow in 1928, got a PhD in Economics and was Director of Planning in three factories, until in 1974 he emigrated to the US, where he worked as a consultant on the Soviet economy.

He criticised CIA's estimates as being overgenerous to the Soviets, and apparently predicted the downfall of the Soviet economy when everyone else were still saying that such thing was almost impossible (Wilhelm 2003). His approach, which he dubbed"anecdotal economics" relied not just on formal models, but a mix of facts, logic, and intuition. By

contrast, the CIA placed more trust in the official statistics, and corrected them in more systematic ways.

> *Before taking seriously the results of calculations with models, we should first look at the data used. Unfortunately models are often much better than data. On the other hand, ideas and assertions should not be dismissed because they are not supported by models. Having lived in that country for 45 years, and having studied its economy from outside for another 11, I trust my intuition no less than models. I am not saying that all models are bad, or should not be used, but I suggest that reasoning, simple logic, and the like, which are called anecdotal economics must not be dismissed. […]*
>
> *Given what has happened and what we now know, Birman clearly did get it right. ….. some of the most 'advanced' techniques were used in studies of the Soviet economy….. But these techniques clearly did not perform as well as Birman's 'anecdotal economics' in getting the Soviet economic situation right. …..Yet if the process of scholarship is to avoid being a self-perpetuating and closed system of review and citation, which.. Birman encountered, there has to be a better arbiter than the refereed, scholarly journal. I would call it the reality test. (Wilhelm 2003)*

Birman is both reliable in general and the author of a book that devotes not one but three chapters to food. What follows is taken from the book, and since Birman already wrote what is to be said, I quote at length from him:

Table 5.1 Food consumption, 1976, kg[a]

	USSR	*US*	*USSR as percentage of US*
Grain products	141	62	227
Potatoes	119	52[b]	229
Sugar	42	43	98
Meat	46	118	39
Fish	18	6[c]	300

Table 5.2 Per capita consumption, kg[a]

	USSR		*US*
	According to rational norms	*Actual, 1979*	*Actual, 1979*
Bread and bread products[b] (flour equivalent)	110	139	71
Potatoes	97	119	54
Sugar	40	43	42
Meats and fat	82	58	122
Milk and milk products	405	319	255
Eggs (number)	292	233	283
Vegetables and melons	146	95	106
Fruits and berries	113	38	113

Rational norms here mean (unrealistic) recommendations from the Institute of Nutrition of the USSR.

Table 5.3 Calories a day per person[a]

	USSR		US
	1965	*1976*	*1976*
Total calories per day	3100	3330	3380[b]
Composition of diet, per cent			
Grain products and potatoes	54	46	22
Sugar[c]	11	12	17
Meat and fish	6	8	20
Fats and oils	9	11	18
Dairy and eggs	14	16	13
Other	6	7	10

[a][8]
[b]*AgSt-80*, p. 551, gives 3420 calories.
[c]Why the share of sugar in the US calories structure is almost one and a half times greater than the Soviet share even though their consumption figures are practically identical (Table 5.1) the authors did not tell. A significant share of sugar in the USSR goes for *samogon*, therefore life in the US is clearly sweeter, but the authors ignored *samogon* in their calculations.

The key difference here, then, is that Soviets were having more bread and potatoes, and a lot less meat and fruits, (but still a low amount in absolute terms). The first table has a lower figure for meat, because it excludes meat 'subproducts' and fats.

In what follows I quote at length from Birman's book:

> *I am not a dietitian, and it is hard to judge definitely, but apparently the average Soviet needs more calories. Many millions (several times more than in America) are still employed at heavy physical labour, the climate is more severe, people walk more, expend a lot of energy standing in lines, riding in overcrowded public transportation with transfers and long waits; and the American population is older. Therefore, although more Americans engage in sports (see Chapter 10), overall the caloric content of food in the USSR should be higher. But, as we see, it is a little less.*

Table 5.3 Calories a day per person[a]

	USSR		US
	1965	*1976*	*1976*
Total calories per day	3100	3330	3380[b]
Composition of diet, per cent			
Grain products and potatoes	54	46	22
Sugar[c]	11	12	17
Meat and fish	6	8	20
Fats and oils	9	11	18
Dairy and eggs	14	16	13
Other	6	7	10

Table 5.4 is most important and we will return to its indicators many times. It reflects not only the quantity of food and its caloric content but other qualitative characteristics. The significance of the comparison in Table 5.4, and especially the figures in the last column, should be fully understandable only to those 'laymen' who read Chapter 2 carefully.

The main thing that follows from Table 5.4 is that in spite of the essential equality of the total amount of calories, the summary indicator of the total value of food consumption in the USSR is a bit less than half (49 per cent) of the US. The explanation lies in the differences of both structure of food consumption and product quality. With respect to quality, recall that the authors reduced the prices of American products in order to take differences into account. 4 Presumably precisely for this reason, for example, the volume of consumption of potatoes in the USSR was 90 per cent of American consumption although in terms of weight American consumption was less than half (Table 5.1). In the opinion of American manufacturers the quality of almost all American products is higher. The only exceptions were dried split peas, for which the Soviet product was judged equal in quality to the American, and sugar cubes, which were rated better in quality than the American.

Table 5.4 **Per capita consumption, 1976**[a]

	USSR		*US*		*USSR as percentage of US, geometric mean*
	Rubles	*%*	*Dollars*	*%*	
Breads and cereals	60	11	110	10	96
Meat and poultry	101	18	282	25	34
Fish	17	3	48	4	67
Milk, eggs, cheese	63	12	116	10	59
Oils and fats	26	5	38	3	64
Vegetables	18	3	111	10	19
Fruit	20	4	61	5	20
Potatoes	16	3	13	1	90
Sugar and confectioneries	47	9	50	4	78
Other foods	14	2	39	4	39
Total food	382	70	868	76	49
Alcoholic beverages	138	25	133	12	119
Nonalcoholic beverages	11	2	54	5	37
Tobacco	15	3	75	7	18
Grand total	546	100	1130	100	53

(The key number in Table 5.4 is the last column. It is made by converting the Soviet figure into dollars, and the US figure in rubles and comparing USSR-dollar and US-dollar, and USSR-ruble and US-ruble, and finally doing a geometric mean of the resulting comparison. Data for eachi item (how much the average person spent) was calculated to make it comparable. It is explained in Chapter 2 of Birman's book.

In the USSR, they are happy to have found some foods; they buy what the stores offer. Here, we buy what we want. There, food expenditures are a major part of family income; here, all including retirees and the unemployed eat well. 1 1 In plant and institute cafeterias there, meatballs are made almost entirely out of bread, and a home dinner consists of soup, breaded patties, and a large amount of potatoes (or macaroni); here, dinner is a good cut of meat with some small

garnish. There, only a few people have eaten lobster, pineapple, or avocado in their entire lives. The quantities of juices, spices and various imported products cannot even be compared. There, they eat tomatoes and fresh cucumbers from August through October, plums in September, and strawberries for two weeks at the beginning of summer; here, all these and much more is available year round. There, vegetables means cabbage, beets and carrots; here, there are dozens of types. There, apples are available in the fall; here, almost any fruit is eaten year round. The appearance of the very best Moscow (Leningrad) food store (gastronom) cannot be compared visually with an ordinary supermarket in some out-of-the-way place in America. There, the consumer carries his pickles home wrapped in Pravda; American packaging is carefully planned for convenience of storage and use.

As a preliminary general remark I must say that the authors in their calculations, and in particular in establishing price ratios, clearly did not take sufficient account of differences in the quality of food, all the more so since perishable products were not shipped to America and the experts could not compare them. I will talk below about the huge waste of potatoes, other vegetables, and fruits; a significant portion of them is lost after purchase, potatoes are sometimes frost-bitten, vegetables sold unwashed and unsorted, fruits half spoiled. American milk does not get sour in weeks; Soviet milk is sometimes spoiled already in the store (and still sold). American meat cooks much faster. In the USSR frozen meat is considered bad; here the process of freezing products has achieved a high degree of perfection. Practically all American food is enriched with vitamins, while in the USSR in 1974 only 15 per cent of bread and bakery products were enriched.

Finally, the American food ration includes numerous products that have never been available in the USSR – countless spices, exotic fruits and vegetables, and those that are not so exotic for Western countries, and food of various ethnic groups (Chinese and other Oriental,

Italian, Mexican, etc.).

Incomparability of the quality of bread greatly complicates the comparison. In the unanimous opinion of all Soviet emigrants and many other Europeans, the quality of bread in America is worse.

However, first, in Moscow, Leningrad, and other major centres it is significantly better than in provincial cities. Second, bread of 'European quality' can always be bought in American supermarkets; regardless of the foreigners' opinions, we eat the bread that we like. Third, in 1974 only 6 per cent of bread and bakery products in the USSR were baked from flour of the 'highest class (vysshego sorta)

We come here to the crucial point of my entire overview. The poorer quality of Soviet meat is indisputable; such is also the opinion of the CIA economists. But how much worse? The problem is that the quality difference is difficult if not impossible to quantify; the estimate of the difference is unavoidably subjective. Strictly speaking, my subjective opinion is no more valuable than the subjective opinion of the CIA economists. In this particular case I have some arguments to substantiate my sharp disagreement with the CIA, but still I am forced to resort to a rather arbitrary estimate. I must say most decidedly that I fully recognise that many of my estimates are debatable. Lacking sufficient material, I often avoid numerical estimates (for example, in regard to publications – Chapter 8). For the same reason, I also make my final calculations (Chapter 13) in the form of a range of estimates. In most of *the cases, my estimates do not pretend to be precise; they are to show the direction and the scale of my corrections to the CIA's calculations.*

Nevertheless, I believe that all the material presented in the overview is sufficient to substantiate my final conclusions. Returning to our concrete case with meat I will say that here

we do have the possibility of making a rough estimate. In the opinion of many emigrants the quality difference of Soviet and American meat can be likened to the difference between cheap and expensive meat in each of the two countries. In other words, average Soviet meat is as much worse than average American as cheap Soviet meat is worse than expensive. Roughly, expensive American meat costs twice as much as cheap (approximately the same correlation exists in the USSR), so we can deduce that the average quality of American meat is twice as good as the Soviet. To repeat, such a deduction and estimate are rough, but I think that this approach is right in principle and that 'we hit near the mark. This is supported also by a well-known fact: even when meat is available in Soviet stores, it is much more expensive (one and a half or two times) in collective farm markets – here quality is higher.

Table 6.3 Per capita consumption of vegetables and melons, 1976, kg

	USSR[a]	*US*	
		Total[d]	*Of which, canned and frozen*[e]
Cabbage	32.2	5.2[e]	1.0
Carrots	6.5	4.1	
Beets	6.6	0.7	
Tomatoes	22.1	33.5[e]	27.7
Cucumbers	4.1	4.5[e]	2.8
Onions	5.3	7.4	
Total	76.8	55.4	
Watermelon	?	6.1[f]	
Other melons	?	3.7[g]	
Total	7.0[b]	9.8	
Garlic	?	0.2	
Beans	?	3.4	1.6
Green peas	?	5.0[e]	5.0
Sweet corn	?	12.7[e]	9.0
Head lettuce	?	11.4	
Spinach	?	0.9[e]	0.7
Asparagus	?	0.6[e]	
Broccoli and brussels sprouts	?	1.1	0.6
Green pepper	?	1.1	
Celery	?	3.6	
Other vegetables	?	7.4[h]	
Total	2.2[c]	47.4	
Grand total	86.0	112.6[i]	

[a]Calculations, except in noted instances, were made as follows. The gross harvest for all farms excluding private plots is taken from *Vestnik statistiki*, 1977, no. 9, p. 92. Calculated shares were applied to the entire gross harvest, which was then reduced for losses. The latter (11.7%) are the difference between the overall gross harvest reported (25 mil. tons) and reported consumption (per capita consumption of 86 kg multiplied by the population). Imports were ignored because they were insignificant. (The authors used a similar procedure, which distributed vegetables by type proportionally to retail sales in 1963.)

[b]The 1974 market volume (Lokshin, p. 135) multiplied by a coefficient of 1.5 to account for 'own' consumption.

[c]Differences between the total (86 kg, taken from *Narkhoz-77*, p. 430) and all 'identified' items.

[d]*StAb-78*, p. 722, except for noted items. Commercial production only, excluding own consumption on farms and that which was not grown by farmers.

[e]USDA, *Outlook and Situation, Vegetables*, July, 1981, p. 28.

Table 6.4 Per capita consumption of fruits and berries, 1976, kg

	USSR[a]	*US*[i]	
		Total	*Of which, in fresh form*
Fruits with seeds (*semyachkovyye*), total	28.2[b]	16.8[j]	9.7[j]
Apples	?	13.0	8.5
Pears	?	3.8[k]	1.2
Fruits with pits (*kostochkovyye*), total	6.2[c]	12.4[j]	4.3[j]
Cherries	?	1.1[k]	0.4
Plums	?	3.0[j]	0.6
Peaches and apricots	?	7.5[k]	2.8
Avocados	0	0.7[k]	0.4
Figs	?	0.1	0.1
Citrus, total	2.1[d]	56.1	13.2
Oranges	1.2[e]	45.0[k]	6.7
Mandarin oranges	0.9[f]		1.3
Lemons (and limes in US)		2.8[k]	1.0
Grapefruit	0	8.3[k]	4.2
Table grapes	2.3[g]	?	1.5[m]
Bananas	0.01[e]	?	8.7
Pineapples	0.02[e]	?	0.5
Papayas	0	?	0.1
Berries, total	?	?	0.8
Cranberries	0.15[h]	0.5[k]	0.1
Strawberries	?	1.2[k]	0.7
Other berries	?	?	0.05
Other fruits	0	?	0.1
Grand total	39.0	102.7	38.9

[a]Production according to *Vestnik statistiki*, 1977, no. 9, p. 92, imports from *VT-76*, p. 43. Adding all components gives a figure 3.1 kg greater than the official indicator – 39 kg (*Narkhoz-77*, p. 430). The difference was taken to be losses (8%), and was allocated to fruits with seeds (2.5) and fruits with pits (0.6), respectively.

Table 7.1 Correction of food consumption indicators

Subgroup	*USSR consumption as % of US*			*Amount of consumption*			
				Soviet, rubles		*American, dollars*	
	CIA estimate (geom. mean)[a]	*My correction*	*'Final' estimate*	*CIA*[a]	*With correction*	*CIA*[a]	*With correction*
Bread and cereals	96	0	96	60	60	110	110
Meat and poultry	34	− 50	17	101	51	282	564
Fish	67	− 50	34	17	8	48	96
Milk, eggs, cheese	59	− 7	55	63	59	116	125
Oils and fats	64	0	64	26	26	38	38
Vegetables	19	− 20	15	18	14	110	138
Fruit	20	− 25	15	20	15	61	81
Potatoes	90	+ 10	99	16	18	14	13
Sugar and confectioneries	78	0	78	47	47	50	50
Other foods	39	0	39	14	14	39	39
Alcoholic beverages	119	0	119	138	138	133	133
Non-alcoholic beverages	37	− 33	25	11	7	54	81
Tobacco	18	+ 100	36	15	30	75	38
Total	53		43	546	487	1130	1506

I must say most clearly that no great faith should be placed in this estimate. Once again I remind the reader that, while persistently criticising the CIA figures, I was forced to base my calculations largely on them; in particular, I did not determine price ratios and parities myself. Many things could not be checked because not all details are given in the CIA report. Moreover, the extent of my corrections is arbitrary: they should give no more than an impression of the direction and scale of the corrections needed. And, of course, my critique is far from over. As the reader will see in Chapter 12, there is still a whole series of comments that relate directly to calculations for food.

One of the first readers of the manuscript noted that my overall estimate does not very seriously change the CIA estimate, especially in rubles. If the present reader has formed the same opinion, it is mistaken. The point is not only that for individual subgroups the difference is great, but that, I repeat, not seeing many details, we may presume that there are other mistakes. At the same time I should repeat once again – in no way do I pretend that my corrections are precise. My purpose is to ascertain their direction and scale. For example, in reducing the authors' estimate for Soviet consumption of meat and meat products by 50 per cent, I cannot guarantee that in fact it could not be 40 or 60 per cent. However, I assert that, first the estimate must be

reduced, and secondly, that the reduction must be very significant. In sum, considering the factors of which we will speak in Chapter 12, the overall CIA estimate for the group must be substantially corrected.

Summarising, I will repeat my basic conclusion – the Soviet living standard, Soviet consumption, is less than American by at least a factor of 4.5. *This conclusion can be used as a sort of rough estimate. 7 In no way do I want to, and indeed I cannot, idealise our American standard of living. I am not closing my eyes to much that is, so to speak, not too wonderful. New York slums are horrible. I have seen beggars in New York and Washington and know that spending the night on a pile of old papers is not something Soviet journalists dreamed up. Though America has moved far ahead of the USSR, there are some houses that do not have telephones or even running water, air conditioners, or televisions. Far from every house that I have seen in visiting half of the states looks like a dream. In a remote valley of West Virginia, the television received only one channel. Not every good or service is necessarily of the highest quality. Trains run late. A snowfall paralyses life in the capital. Fresh fruits and vegetables in Europe (Western!) are tastier. Unemployment is certainly not a gift, just as finishing life on the meagre benefits for the poor is no present. The list of 'not too wonderful' things in America could easily be continued; instead I will say that pointing out each of them will only enhance the significance of my conclusions – that although some things may not be so good about the American standard of living, in spite of our shortcomings, life in the Soviet Union, the Soviet standard of living, is 4.5 times worse.*

Conclusion

The popular idea of the Soviet Union as perpetually stricken by famines, is mostly based on the first half of the USSR's life, during which time enormous, catastrophic famines like the Holodomor took took place.. But though the last major famine happened in in 1947, shortages and lengthy queuing for food did persist. There wasn't formal rationing, and in theory people were able to go to supermarkets and buy what they wanted, but often what they wanted simply wasn't available. The legal private market helped people obtain some missing goods.

The analysis undertaken here reveals that Soviet citizens had a caloric intake high enough for health, but most likely not as high as in the US, *pace* FAO. The picture that emerges from the analysis, taking Table 7.1 above for a representative comparison is one of different composition of diet (many more potatoes, and much less meat), and foodstuff of less quality. The coefficients used to convert food mass to nutrients that Goskomstat employed were thus lower than FAO's, and FAO themselves do not assign much confidence to their own preferred set of conversion coefficients, as they say[27] that based on the quality of the data "*it is difficult to say much about the level of caloric consumption with any confidence.*"

This also applies to this analysis. I have tried to compile what is currently the state of the art about this subject, and still then our conclusion is not one that is unequivocally true. Nevertheless, the picture I have painted of Soviet food consumption is likely to be the most accurate one available based on the existing data. The calorie, and with this framework in mind, we can explain the paradox is not much of a paradox: when: common sense was right, after all, once one accounts for both quantity and quality and variety are factored in, sometimes less is more...

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27 http://www.fao.org/docrep/007/y5069e/y5069e05.htm

CHAPTER 7: DURABLE GOODS

In the previous chapter we lookedlooked at some statistics beyond the scope of the chapter itself, about broad trends in consumption in general, and durable goods (things like fridges, sewing machines, watches and automobiles) specifically. This chapters expands on that. What were Soviet household appliances and other consumer goods like? Was the Nixon-Khrushchev 'Kitchen debate', where the two leaders publicly debated whether the American lead in durable goods would be surpassed by the Soviets, based on fact or fiction? For this chapter I draw again on Birman's Personal Consumption in the USSR and USA (1989, ch. 9).

Early on, Birmanwarnsthat comparisons are difficult given the qualitative difference between the products available in both countries:

> *Determining price ratios and parities for this group is hampered by the fact that many goods are not comparable, and very far from all exist in the USSR.* ***In the opinion of experts [4], a typical contemporary Soviet sewing machine is similar to one used in the US 60 years ago. The standard Soviet one-door refrigerator is not produced in the US now. There are essentially no fully automatic washing machines, electric (or gas) clothes dryers, toasters, or air conditioners in the USSR*** *(2).*
>
> *(2) This was the opinion of American experts. In the words of lzvestiya, 3 April 1979, p.3, Soviet vacuum cleaners 'are 20 years behind modern standards'. Home air conditioners recently began to appear, but their quality is bad. The people have not been quick to buy them*

(Kommercheskiy vestnik, 1982, no. 6, p. 6), although there are no central systems in apartment buildings. Toasters have also begun to appear, but they are not selling well either.

[4] This refers to Consumption in the USSR: An international comparison(Schroeder, G.E. & Edwards, I. 1981) which draws from official Soviet data, Soviet and Western journals, and CIA estimates.

Total durable consumption in the USSR was one eighth the level in the US[28]. Within both countries consumer's budgets, Soviets allocated more money to highly needed 'basic' goods while Americans could afford less essential equipment (recreational goods, sports equipment, cars…). Curiously, Soviets consume a large amount of jewellery and watches, but Birman is not very convinced by this figure.

But yearly consumption figures do not tell us exactly how many durable goods people are actually enjoying if items wear out more rapidly in one country than another:

Americans already have a huge amount of durables and buy new items primarily to replace what has worn out or one out of style. The Soviet people are at a significantly lower absolute level of consumption of durables and the rate (not absolute amount!) of their purchases is higher. Therefore, judging volume of consumption of durables on the basis of the amount of purchases during the year substantially distorts the results of the comparison in favour of the USSR.

In 1976, only two thirds of Soviet families had a rrefrigerator,only two thirds a sewing machine, and only two thirds a washing machine. Only one fifth had a vacuum cleaner. The number of coffee grinders and pressure cookers was also low. In contrast, most fami-

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28 This figure is obtained by taking expenditures in both countries in rubles and dollars, and taking the geometric average, then computing the ratio. The details and justification for this method is explained in Birman's book.

lies in the US enjoy these appliances. And as mentioned before, there were differences in quality:

> *The difference in the quality of equipment is colossaI. The freezing compartment of Soviet refrigerators is small and there are no automatic ice-cube makers. American washing machines operate automatically and on different cycles, while Soviet machines merely spin the clothes – the difference is like that between silent movies in the 1920s and modern cinema.*

There were 223 TV sets per thousand residents in the USSR (vs 571 in the US) in 1976. **People in Moscow had three channels they could watch and people in Washington had seven. Only 10% of Soviet televisions were in colour**, and one fifth of the country could not receive colour broadcasts. 31% of Soviets could only watch one channel.

Soviets were still producing tube based radio receivers (those were not in production in the US anymore) and total production was less than in the US, 8.5 million vs 44.1 million.

For a similar population, the US had 98 million passenger cars vs just 5 million in the USSR. This is not because of a difference in preferences. According to Birman, most Soviet citizens dreamed about owning their own personal automobile.

Another thing that must be mentioned is the differences in ownership of durable goods between cities and the rural areas. The relevant numbers here are the per family numbers, in the table below. Rural areas, as one might expect, lagged behind cities in ownership of various goods.

Table 9.2 Number of various durables in the USSR, 1976[a], units

	Per 100 families			*Per 1000 persons*		
	Total	*City*	*Country*	*Total*	*City*	*Country*
Watches[b]	470	519	381	1362	1567	1030
Radios[c]	81	86	71	235	261	192
Televisions[d]	77	84	64	223	253	174
Cameras	27	36	13	78	110	35
Refrigerators	67	82	39	194	248	106
Washing machines	67	78	49	195	234	131
Vacuum cleaners	20	26	9	58	79	23
Motorcycles and motor-scooters	9	6	15	26	17	40
Bicycles and mopeds	53	42	71	153	128	193
Sewing machines	62	60	66	181	182	179
Tape recorders	13	?	?	39	?	?
Cars	6	?	?	18	?	?

[a]Data (for the end of the year) from *Narkhoz-77*, pp. 431–2; tape recorders from Ya. L. Orlov, *Torgovlya i proizvodstvo*, M., 1977, p. 159; cars estimated.
[b]This, of course, is not only wrist watches but also alarm clocks, grandfather clocks, etc. In 1976, 58% of all watches produced were wrist watches (*Narkhoz-77*, p. 189). Judging from this correlation for other years also (e.g., 63% in 1960, *Narkhoz-60*, p. 237), there were no more than 800 wrist watches per thousand persons in 1976 and probably many fewer (not everything is clear with exports).
[c]In 1976 only a little less than two-thirds of total production was made with semiconductors (*Narkhoz-77*, p. 189); we must assume the rest were tube-type.
[d]Not more than 5–6% of them were colour sets.

Regarding other durables, the percentages of the total number of American homes (households) equipped with various electric durable goods in 1976 were:[24]

Air conditioners (by number of rooms)	54.4
Dishwashers	39.6
Frying pans	63.6
Steam and steam/spray irons	97.7
Can openers	56.4
Coffeemakers	99.4
Food waste disposers	40.7
Microwave ovens	5.1
Mixers	91.1
Refrigerators	99.8
Home freezers	44.4
Televisions	99.9
of which, colour	77.7
Washing machines	72.5
Clothes dryer (including gas)	58.6
Vacuum cleaners	99.5

In addition to everything else, reliable comparisons for durables are made very difficult by the fact that in the US there are many types of them that do not exist in the USSR: personal airplanes, numerous different kinds of yachts, video tape recorders and TV cameras, telephone answering devices, home computers, and much, much more.

The summary table in the books shows the above mentioned figure of one eighth.

Table 4.1 **Per capita consumption, 1976[a]**

	In rubles			*In dollars*			*Geometric mean*
	USSR	*US*	*USSR as percentage of US*	*USSR*	*US*	*USSR as percentage of US*	*USSR as percentage of US*
Food	546	1092	50	651	1131	58	54
Soft goods	240	740	32	312	652	48	39
Durables	102	1031	10	133	749	18	13
All goods	888	2863	31	1096	2532	43	37
Household services	116	822	14	438	1956	22	18
All goods and household services	1004	3685	27	1534	4488	34	30
Education	70	111	63	457	491	93	77
Health	42	243	17	405	620	65	33
Total	112	354	32	862	1111	78	50
Grand total	1116	4039	28	2396	5599	43	34

[a][6] Due to rounding and regrouping, these figures may differ slightly from those in the source.

We can also examine how the situation was in 1985-7, a few years later. From Bergson (1991):

Table 3

Inventories of Selected Durables Specified Countries and Years

(per 1000 persons)

	Passenger cars, 1985	*Radio receivers, 1987*	*TV receivers, 1987*
USSR	36	685	314
USA	552	2,119	811
Germany	412	954	385
France	380	893	396
Japan	226	863	587
United Kingdom	305	1,145	434
Italy	376	786	423
Finland	315	991	481
Austria	335	573	480
Spain	241	295	368
Ireland	202	580	290
Greece	127	411	175
Portugal	151	212	159
Turkey	19	160	172

Sources: Passenger cars: Total cars, United Nations Statistical Office (1988); population, OECD (1990b) and Stephen Rapawy and W. W. Kingkade (1988). *Radio receivers in use*: Unesco (1989); for Austria, extrapolated from 1980 by reference to receivers licensed. *TV receivers in use*: Unesco (1989); for France, Italy, Finland and Ireland, extrapolated from 1980 by reference to receivers licensed; for Germany, Greece and Portugal, receivers licensed.

We also have data for 1957, from Knox (1959). This paper is older, and so its quality is not as good:

TABLE I

Consumers' Durable Goods: Numbers per 100 of Population, 1957

	Motor Cars	*Motor Cycles*[1]	*Tele-phones*	*Radio Sets*	*Televi-sion Sets*	*Refrig-erators*	*Washing Machines*
U.S.A.	31.7	0.3	33.7	78.8	25.7	26.5	23.5
Canada	19.5	0.2	26.3	36.2	16.8	17.8	17.3
New Zealand	18.8	1.1	25.6	23.5	—	13.2	14.4
Australia	15.8	1.3	18.5	21.8	0.9	19.7	10.4
Sweden	10.5	4.3	31.5	35.0	5.3	18.7	11.9
United Kingdom	7.7	2.6	14.0	28.5	16.9	3.7	9.7
France	7.7	4.1	7.8	21.6	13.9	4.9	5.6
Switzerland	6.3	3.1	24.3	25.3	5.3	9.8	3.9
Belgium	5.8	2.3	10.4	22.5	22.2	5.3	15.1
Denmark	5.5	2.8	20.5	31.3	22.2	5.0	4.0
Ireland	4.8	1.0	4.3	16.5	—	1.4	2.0
South Africa	4.5	0.2	5.4	5.9	—	3.2	0.9
West Germany	4.0	4.8	8.3	27.5	18.9	3.9	4.5
Norway	3.8	2.2	17.8	27.9	—	7.3	11.2
Netherlands	3.3	1.6	11.2	22.7	17.7	1.0	10.4
Austria	2.7	4.7	7.7	26.1	2.1	6.5	3.4
Finland	2.6	1.5	11.3	25.4	0.9	2.8	6.9
Venezuela	2.5	0.2	1.9	3.7	3.1	—	—
Italy	2.1	4.3	5.4	13.2	12.7	2.0	0.6
Argentina	1.7	0.2	5.9	15.1	5.0	—	—
Mexico	0.9	0.02	1.2	5.2	7.7	1.1	0.6
Czechoslovakia	0.7	2.6	2.9	22.3	9.8	1.5	6.3
Brazil	0.6	0.05	1.4	5.7	6.7	1.1	0.1
Spain	0.5	0.3	4.1	6.4	0.2	—	—
Greece	0.3	0.1	1.7	6.8	—	—	—
U.S.S.R.	0.2	0.4	—	14.8	14.3	—	—
Japan	0.17	0.6	3.8	15.8	7.0	2.7	0.4
Turkey	0.14	0.07	0.7	5.2	—	—	—
Yugoslavia	0.07	0.09	1.0	3.9	0.3	—	—
India	0.04	0.01	0.08	0.2	—	—	—
Pakistan	0.04	0.01	0.06	0.1	—	—	—
China	0.007	—	0.05	0.02	—	—	—

[1] *Motor Cycles* includes mopeds.

If take both Bergson and Knox's datasets together, we can see how the ownership of cars, radio receivers and TV receivers evolved. Compared to other countries, growth in the ownership of cars was quite low For TV it was somewhat low, and for radio receivers it was roughly on trend.

Chernyshova (2011) discusses quality of goods, and the process of buying them, plus the perceived higher quality of Western goods by Soviet consumers, which matches what

Birman and the CIA reported:

Insufficient output and frustrations of the retail network meant that shopping for desired gadgets, whether a washing machine, a mixer, or a television set, never really became as simple or straightforward in the USSR as it was in the West. …While goods varied in availability, the majority of purchases involved queuing, which ranged in length from several hours to several years; often they required physical endurance and just sheer luck. *The case of refrigerators is particularly telling: they were sold through the system of waiting lists and postal notifications, which had been designed to make trade in high--demand goods more efficient, but, coupled with the absurdities of Soviet retail practices, turned out to be downright Kafkaesque. One shop in L'viv gave customers only a one-hour slot between 5 p.m. and 6 p.m., during which they could sign up to buy a refrigerator, despite the fact that the store was virtually empty for the rest of the day. During that special hour, one assistant had the task of taking down names of about a hundred clients, which resulted in mayhem. The narrowly designated time slot was likely a method of restricting the number of people signing up for a refrigerator; the demand exceeded supply, despite the waiting time of one year. But lapses in organization, which accompanied the process, were unlikely to have been intentional. The L'vov shop failed to inform its patrons that in order to sign up they had to bring along a blank postcard to be used to notify them when their refrigerator arrived in the shop. Having reached the counter, customers had to drop their place in the queue and rush about the neighboring streets in search of a place to buy a postcard, making the entire endeavor even more stressful.*

Successful registration got one only halfway to the desired refrigerator. ***After months and even years of waiting, when the long-awaited postcard arrived, the lucky buyer had to rush to the store to pick up the item in person. […]****A 1986 collection of articles on "rational consumption," for instance, stated bluntly that* ***"many [Soviet-made] products are infe-***

rior to the best of their foreign counterparts in terms of key technical and consumer characteristics[…].”[…]

Electrical durables were among the goods that caused the most trouble to their owners and most often broke down. The implementation of innovation was often slow due to the cumbersome planning system, which became particularly noticeable as consumer demand and standards rose, prompting the newspaper Moskovskaia pravda to complain in 1975 that by the time a new device entered the market it was already thoroughly outdated and “failed to satisfy the contemporary requirements of technical aesthetics.” *This did not bode well for the competition with the West in providing modern home technology.*

Buying cars was even more difficult than for less expensive goods,

Waits were legendarily long, sometimes ten years, but usually in the range of four to six. *Problems of determining which organization’s or institution’s queues had priority, the maintenance of individual’s’ place in the queue, and illegal (bribe-induced) queue jumping were endemic, especially as it was well known that “members of ‘elite’ groups . . . receive special consideration in the allocation of cars.” Aside from high-ranking party officials, this would have included members of prestigious organizations such as the Academy of Sciences and the Writers’ Union; industrial executives; outstanding artists, actors, professional athletes, and other recipients of honors and medals; and disabled veterans of World War II. […]*

“In Russia,” wrote the authors of a book on “automania,” “they say that owning a car brings joy twice in an owner’s life—when it is bought and when it is sold. In between there is only torture.” Siegelbaum (2006))

In the next sections, to compare the quality of Soviet and Western goods, we draw

from Malcolm & McKay's *Soviet Product Quality* (1988).

Automobiles

Various soviet and Western cars were tested, and

> *Hence an overall assessment of the car [Moskvish 412] from Motor's road test points towards a 1.5 litre car capable of adequate performance, with large passenger space, well equipped for driver maintenance, but lacking in good finish.* These characteristics *would point well towards Soviet requirements for a car intended for public transport and some private use by drivers trained in car maintenance, although poor ventilation and bodywork finish may lead to shortcomings in use in the Russian climate.*
>
> *although one Soviet source considered the Moskvich 412 to be equivalent to the Vauxhall Victor 1600 in terms of several technical characteristics (see Table 5.2 above), CA tests suggested that it was far below this 1962 British-designed model in terms of general safety.*

Of the Lada or Zhiguli cars, he says:

> ***The road test reported in the Autocar magazine compared the performance of the Lada, in terms of top speed, acceleration and fuel consumption, with four then contemporary UK manufactured cars of 1300 cc engine capacity (Ford Escort 1300 XL, Hillman Avenger 1300 GL, Morris Marina 1.3 and Vauxhall Viva DL). It was found to have the highest top speed of the four models tested, and was ranked in third place for economy of fuel consumption. Its rate of acceleration was found to be lower than the majority of the models tested, but not substantially lower to prevent Autocar from rating the Lada's performance as 'perfectly satisfactory'.***
>
> *[…]*

the Lada really came into its own on rough unmade roads where it could cope with almost anything. There was little pitch or roll, and the Lada felt extraordinarily stable.'This good performance under rugged conditions, however, was obtained at the expense of lightness of handling under normal road conditions. The performance of the brakes was also found to be satisfactory, although their lack of sensitivity to feel ('totally dead feel') was considered to be a disadvantageous characteristic which could have been corrected by the fitting of a vacuum servo. […]

The main criticism of the car, in addition to those of heavy steering and insensitive braking referred to above, were aimed at the lack of driver support provided by the front seats, and the poor performance of the light bulbs provided with the car. It was also noted that although the car performed admirably under rugged conditions, inadequate protection of the handbrake central lever caused the rear brakes of the test car to be locked on when travelling over rough roads.

The magazine concluded its road test with the comment that ***'we must congratulate the Russians on catching up so quickly (albeit with Italian advice and assistance) with the rest of the world's motor industry. The Lada 1200 is a thoroughly sound car, let down perhaps by sticking steering and dead brakes. But these are matters which can be rectified with a minimum of cost.'***

Hence, Soviet cars can be judged asas being adequate, but technologically lagging behind the West. They did begin from a lower technological level, but they also got assistance from Fiat, so judging whether they can be used to make any broader judgement about Soviet technological expertise is difficult. In addition to this, we have seen that Soviet production of automobiles was not high enough to meet its demand.

Refrigerators

Malcolm & McKay discuss both the matching between demand and supply, and the overall quality. Regarding demand and supply, in 1978, 77% of Soviet families owned a refrigerator (90% in 1984), but they argue there was a mismatch between the types of refrigerators being produced and those being bought: 60% of the total demand was for large capacity refrigerators, yet only 24% of total production were large capacity. In rural areas, the unmet demand was even higher.

Regarding quality, the authors compared the specifications of range of refrigerator models ("Byrusa") intended for exportation, and this model appeared to be similar in specifications and quality to Western products. However, they mention that this wouldn't be a fair comparison: This is an export model, not a model intended for domestic production, and the factory producing had ties to the defence sector, implying that this would enable them to source better quality materials and use the best available manufacturing techniques. In addition to comparing specifications, the authors also directly inspected and compared one such export model that was available for sale in the UK, finding it to be of somewhat inferior quality, but competitive in price.

The book concludes that it was their aim to examine the claim that Soviet products were generally of lower quality than those found in the West. The products they examined they judge as adequate, and robust, and easy to maintain.

However, their design made them less convenient to use than Western products, they were more prone to failure, and their control systems was not adequate.

Conclusion

For some household appliances (like refrigerators, TVs, and radios), people in the Soviet Union did have ownership rates on a par with comparable countries. But for other goods, like juicers, microwaves, sewing machines, washing machines, or vacuum cleaners, ownership levels were lower. Apparently refrigerators, TVs, and radios were given priority to make statistics look better. Automobile ownership was very low, not because of a lack of demand, but of supply. And overall consumption of durable goods is estimated, by Igor Birman and the CIA, to have been around one eighth of US levels, as measured by the averaging procedure described above..

In general, quality levels seem to range from almost on par with Western standards (for automobiles) to slightly behind (refrigerators) to far behind (vacuum cleaners).

All in all, the consumer experience (for durable goods) of the Soviet consumer was worse than their Western counterpart. They had to go through long waiting lists or queues, sometimes or years in the case of cars. Then they had to visit the shop at a specified time to actually receive the good in question. Usability and aesthetics in general were well below Western standards. Durability is less clear – Soviet devices had a longer lifespan, but this seems likely to be because replacement was difficult and expensive, so ongoing maintenance was more economical than in the West, where buying a new model was often more practical when a device wore down.

CHAPTER 8: HEALTHCARE

Soviet healthcare has not been widely discussed, and even in the literature, the reports that we have are not as extensive as for other areas.

Most, if not all, academic work gives a negative view of the system. So if this chapter seems slanted, it is not because of cherrypicking – this extremely negative overview is reflective of the academic consensus. Though some in the 1970s claimed that the system worked well, before those in the West had access to reliable data, today no one considers those claims plausible.

Here's what the Soviet Union promised its citizens:

> ***Article 42.*** Citizens of the USSR have the right to health protection.
>
> *This right is ensured by free, qualified medical care provided by state health institutions; by extension of the network of therapeutic and health-building institutions; by the development and improvement of safety and hygiene in industry; by carrying out broad prophylactic measures; by measures to improve the environment; by special care for the health of the rising generation, including prohibition of child labour, excluding the work done by children as part of the school curriculum; and by developing research to prevent and reduce the incidence of disease and ensure citizens a long and active life. (Soviet Constitution, 1936)*

The system itself, known as the Semashko system (in comparison to the Bismarck and Beveridge models of welfare states) is described below in some of the articles referenced. Overall, it was centrally planned, and had a tiered, hierarchical structure. It was free for every citizen. Two of its most remarkable features, which have been widely cited by nonexperts as proof that the Soviet system worked, are the high number of hospital beds and the high number of physicians. These, however, are not measures of effectiveness (outputs), but of costs (inputs). Healthcare systems must be judged by the outcomes they produce, relative to the resources they use, not by the resources they use alone.

It will be argued in this chapter that the system performed poorly, and was inefficient considering the resources used. The system was stagnant from the 1950s until the demise of the Soviet Union. In the 1980s, attempts were made to decentralise the system to make it more flexible, without much success.

Overall assessment

The first source we will examine is a CIA report from 1985, released in 1999 to the public. The report is highly critical of the Soviet system in general, highlighting underfunding and widespread supply and personnel shortages. In terms of outcomes, the system was not able to stop increasing mortality and decreasing life expectancy. The healthcare system for high ranking party members, however, offered better quality.

A few legal fee-for-service clinics existed, and were heavily used to access better healthcare. Bribes for the same purpose were also common.

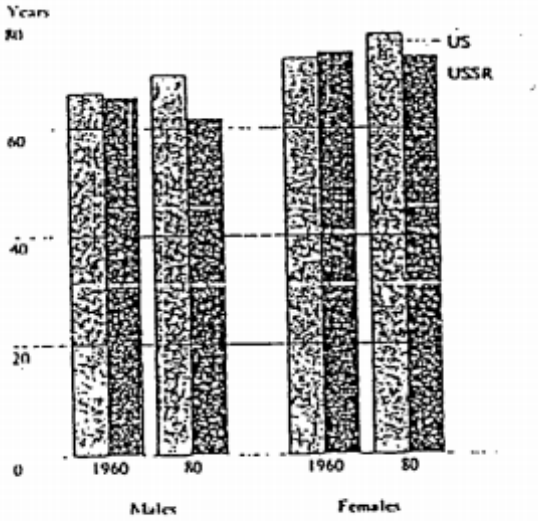
Table 12
US and USSR: Change in Mortality by Age Between 1966 and 1976

Deaths per 1,000

	US	USSR *
0-1	−7.4	5.0
0-4	−1.7	1.8
5-9	−0.1	−0.1
10-14	−0.1	−0.1
15-19	0	0
20-24	0	0.1
25-29	−0.1	0.1
30-34	−0.3	0.4
35-39	−0.4	0.6
40-44	−0.5	1.4
45-49	−0.8	1.8
50-54	−1.4	1.4
55-59	−2.2	2.3
60-64	−2.2	1.7
65-69	−6.1	2.5
70+	−11.8	9.2

* The last year for which the USSR published mortality data by age was 1976. Soviet data are given as two-year averages—for example, 1965-66 for 1966; from Murray Feshbach, *The Soviet Union: Population Trends and Dilemmas*, Population Reference Bureau, Vol. 37, No. 3, August 1982.

Figure 47
Life Expectancy, 1960 and 1980



[Source: CIA report]

The Soviet system was apparently focused on curing disease, rather than on prevention. The typhoid fever rate in 1979 was thirty times the US's, and measles rate was twenty times higher. Only 40% of cervical cancer cases in the USSR were diagnosed before becoming terminal, compared to 70% in the US. Everything the CIA says is backed by the literature that came after it, so their judgements at the state of Soviet healthcare seem to have been fairly accurate.

Early Assessments

In 1984, Mark G. Field published some brief notes as part of a conference report about the quality of life in the Soviet Union.

It is ironic that a new society whose great ideological appeal is equality should have spawned a multi-class medical system.. Soviet society has given rise to an elaborate system of rankings and distinctions, which are followed quite closely in the provision of medical services. The health care system in the Soviet Union is divided, broadly speaking, in to two unequal categories: territoria1 networks and closed networks. Territorial networks serve the general population and are accessible by virtue of residence. Closed networks, on the. other hand, are reserved for special groups.

At the lowest level, there are facilities reserved for workers of industries with over a certain number of personnel. Next, there are special facilities for certain agencies of ministries, such as the armed forces, or the Ministry of Internal Affairs. Another network is reserved for intellectual elites, such as members of the Academy of Sciences or leading artists. Finally, at the apex of the Soviet medical (and socio-political) pyramid is the network of medical institutions and rest homes, etc., reserved for the Kremlin elite and their families. . Needless to say, medical facilities reserved for the elites are better equipped than those in the ordinary networks.

The Soviet press repeatedly reports complaints received by readers about the rigidities of the medical system. Hospitals;, for example, will not admit new patients after a specified time of day. Every disease is tariffed according to the number of hospitalization days it is permitted. A delivery is usually nine days; an appendectomy is ten days. Even if the patient is well enough to be discharged earlier, this is not allowed. Patients will be subjected to routinized procedures whether they need them or not. Bureaucratically determined rules overload physicians in outpatient clinics, thus reducing the time available for those who really need a doctor. While meaningless rules are enforced as to what one can bring into a hospital, sterility is poorly observed in operating rooms. As a result, the incidence of post-operative infections is very high, affecting about one-third of all patients oper-

ated on. The rigidities of the Soviet health care system are epitomized by the extensive use of quotas. Hospitals are assigned "death quotas," and investigations will follow if they exceed these quotas. The result is that hospitals often refuse to admit terminally ill patients, placing the burden entirely on their families. There are also quotas for all types of operations and hospital occupancy rates. The result in this case is the widespread tendency to falsify records and statistics. . […]

Given the fact that the health care system is not a high priority area in the Soviet economy, it suffers the same shortages and erratic distribution patterns as the rest of the economy. A review of Soviet materials reveals an extremely inefficient system, riddled by bureaucracy, poor quality and severe problems of production and distribution. Shortages of medical supplies are chronic, and the system works poorly to inform physicians of new medical products and techniques. Although drug retail prices are very low, the patient is often unable to obtain prescription and non-prescription items, or only with great difficulty.

With its plethora of physicians and hospital beds, the Soviet medicine system seems impressive at first glance. But indeed, in some instances, it resembles the medical systems one sees in lesser developed nations. The level of infant mortality is certainly not what one might expect of a highly industrialized nation with an economy second in size only to the United States. With the exception of the elites, the population in general receives a kind of mass medical care which pays scant attention to detail, quality or the personal feelings of patients.

Friedsenberg (1987) describes a visit to Leningrad (modern day St. Petersburg) and interviews with physicians and medical students, visits to polyclinics and interviews with people about their experience with their healthcare system. The report only describes the health system of Leningrad during that year, Soviet Union's second largest city, and so it may be taken as the best the USSR had to offer in healthcare.

Polyclinics were medical facilities (for outpatient care) located in neighbourhoods, which people attended for free, by a physician that was assigned to them. These facilities served to treat simple illnesses, provide vaccinations, and do checkups. Then there were larger regional polyclinics, staffed with specialists, to deal with particular illnesses and were furnished with more advanced equipment. Some equipment like magnetic resonance and computed tomographic imaging devices were almost non-existent. Advanced medical techniques like 'coronary artery bypass grafting, carotid endarterectomy and angioplasty' also weren't generally available.

Many people reported that they had little confidence in polyclinic physicians, and that they usually visited them to get a sick note for work. Medicines were usually imported from outside the USSR, but people were able to purchase them at low prices from pharmacies, if they were able to find them during shortages. To reduce costs, supplies like needles, gloves, intravenous tubing or catheters were reused in polyclinics. In regional polyclinics, there were long waiting lists for elective operations.

Overall, Friedsenberg considers Leningrad's healthcare as "somewhat behind" western standards at that time, but an improvement on previous years.

Massell (1987) comments on Friedenberg's, and says that he witnessed a vascular surgical procedure in Moscow in 1969 and in 1984. The equipment quality at the centre visited in 1984 was comparable to the United States' best.

Zelicoff (1987) point out that despite Friedenberg's explicit declaration that his article applies just to Leningrad's system, he generalises it to the whole USSR in his conclusion. He doubts that is true even in Leningrad itself. He comments on the practice of bribing lowly paid physicians to get adequate treatment.

Also writing in that time, Albrecht & Salmon (1987) confirm the previous accounts, giving some extra information on how the Soviet system was structured. They suggest their emergency assistance service was exemplary, highlighting that ambulances were able to reach most citizens in around 15 minutes. Every citizen had access to "reasonable quality care". They are the only authors that praise a component of Soviet healthcare, the emergency assistance service, but as they only focus on larger cities, so absent more information we shouldn't think that this was also the norm in rural areas throughout the USSR.These sources also mention that there were differences in the quality of healthcare provided: those high in the Communist Party hierarchy had access to better services, and some people bribed physicians to access better care.

Raferty & Schultz (1988) comment on Friedenberg's article, saying that the Soviet system was even worse than he described, with rising infant and overall mortality rates, and prevalent technological backwardness that resulted. Poor quality, corruption, and bribes to have operations done were widespread.

Gananian (1988), who worked some time in Georgia, comments on Rafeirty & Schultz (who served in Kiev and Rostov). Like them, Gananian thinks the Soviet healthcare system was worse than Friedsenberg think it was.

Later Assessments

Bernstein & Shuval (1994) provide an evaluation of the Soviet healthcare system by means of asking a thousand of soviet Jewish physicians who emigrated to Israel in 1990.

The article opens by saying that during the previous 20 years, the health of the population in the USSR had declined. Infant mortality first declined from 35.3 per 1000 births (1960) to 22.9 (1971), but then increased to 31.1 (1976). It then dropped again, and rose again to

25.4 (1989). These figures are two or three times higher than other industrialised nations.

Life expectancy dropped from 67 (1964) to 63 (1980s), and then it increased to 65 (1987), compared to 71.5 in the US, 72.7 in Italy, 74.2 in Sweden, and 75.5 in Japan. Healthcare spending decreased from 6.5% of GDP (1965) to 6% (1970s) to 4.5% (1985) to 4% (1987), making the USSR one lowest spending industrialised countries on healthcare in the world.

This decline was also recognised by E.N. Chazov, Soviet Minister of Health between 1987 and 1990, who complained about the lack of funding for healthcare. In rural areas, only 35% of hospitals had hot water, 27% had no sewage system, and 17% had no running water. The Council of Ministers answered by promising to double healthcare spending by the year 2000, and introduce elements of private enterprise into the healthcare system.

The USSR had the highest physician-patient ratio in the world (42 per 10000 population), compared to 13 in the UK, 19 in the US, 24 in Denmark and Sweden. But according to Chazov, this need not be an indicator of quality: many medical school graduates were not able to, for example, read an electrocardiogram.

Soviet physicians received little pay for their work: 82% of average wages (1965), which had fallen to 70% of the average industrial wage by 1985. Gorbachev raised their salaries 30-35%. In 1960, 76% of physicians were women, but active measures were taken to recruit more men into medicine, lowering the number to 66%. However, lower-ranking positions, like primary care, were still mostly staffed by women (88%).

Out of the interviewed Jewish physicians, 98% were specialists, with half of them having two fields of specialisation. 85% of specialists became so via 3-6 month courses.

Most (90%) of them reported being dissatisfied with the drugs available to them, 84% were

dissatisfied with the availability of medical equipment, and 75% were dissatisfied with their salaries. During the perestroika era, these indicators didn't improve, and they worsened in some cases.

Rowland & Telyukov (1991) again confirm the statistics mentioned before: poor life expectancy, high mortality rates, underfunding (3.4% of GDP vs 11.4% for US in 1989), antiquated facilities, old equipment, low morale, and dissatisfaction. High inequality in healthcare quality existed between individual republics, and between rural and urban areas.

Exhibit 1
Health Indicators And Characteristics. Soviet Union And United States. 1986

Characteristics	Soviet Union	United States
Population		
Total population	280 million	241 million
Age distribution		
Percent under age 15	25%	22%
Percent 65 and over	9	
Percent female	53	50
Percent rural (1980)	37	26
Health resources		
Number of hospitals (1980)	23,100	6,229
Resources per 100,000 population		
Hospital beds	1,307	410
Physicians	429	225
Nurses	606	661
Midwives	114	1
Health financing		
Total medical expenditures (1979)	$27.9 billion[a]	$2 12 billion
Percent of medical expenditures paid by government (1979)	92%	43%
Percent of GNP for health (1989)	3.4%	11.4%
Health status		
Life expectancy at birth, total (years)	69.8	74.8
Male	64.2	71.3
Female	73.3	78.3
Life expectancy at age 65, total (years)	15.1	16.8
Male	12.3	14.7
Female	15.8	18.6
Infant mortality (deaths per 1,000 live births)	25.1	10.4
Maternal mortality (deaths per 1,000 live births)	47.7	7.2

Sources: World Health Organization, European Regional Office, Health for All database; Health, United States, 1989; and A.V. Telyukov. "Soviet Health Data" (Staff paper, Institute for Economic Studies, Moscow, 1990).
[a] U.S. dollar equivalent; the amount in rubles is 18 billion.

[Source: Rowland & Telyukov (1991)]

This happened even when the Soviet Union had larger numbers of health personnel (twice per capita as the US), number of hospital beds (three times per capita as the US), and facilities.

For most causes, mortality rates from disease were higher in the USSR than the US in 1988. Life expectancy not only was lower in the USSR, but for females it was virtually stagnant during most of the post-war period, and for males it actually declined 1958-1978, before eventually returning to its previous peak.

Some reasons for this, besides the poor quality of the system, are a high number of smokers and alcoholics, low levels of physical fitness, poor diet, and a having a sizable (15%) fraction of the population living in areas with pollution ten times higher than 'normal' levels.

The Soviets were aware of these deficiencies (in part due to the glasnost [openness] policy) by the 1980s and were trying to implement some measures to fix the system. This proposed set of measures included devolving control of healthcare to the individual republics instead of having USSR-wide control, relying on state-enterprises to provide healthcare in the workplace, and experiments with health insurance. Hospitals would be communitarised, or privatised to communities: instead of being government-owned, they would be nonprofits run by local communities. Other ideas were to copy the US HMO system, and reward competence and productivity to motivate physicians. Overall, the idea was to decentralise the system.

Schultz & Rafferty (1990) describe the state of soviet healthcare, and Gorbachev's plans for reform in the perestroika period. They are in agreement with the authors above.

> *Contrary to its stated principles,'0 the Soviet medical care system is neither unified nor egalitarian. Most people get care in hospitals and clinics operated and funded by the Ministry of*

Health, a system of free care that includes 94 percent of all health care facilities. A parallel "closed" system is maintained by certain elite government ministries and by large factories. This "closed" system is considered to be of higher quality than the "public" one and draws a disproportionate share of all health funding. Doctors find work in this system attractive; half of all doctors in Moscow work in just 30 "closed" clinics where their workload is lighter and their pay higher than that of doctors in the public system.

Also contrary to its design, Soviet health care is not free. Patients treated in the public system are often required to pay doctors and nurses under the table in order to assure that medications be administered or that an operation be performed. A Soviet newspaper recently published some sample "prices": 500 rubles for an operation or delivery (the average monthly salary in the USSR is 200 rubles), 300 rubles for a 20-day hospital stay, 25 rubles or the donation of a unit of blood by a relative to assure admission to the hospital. Most patients must purchase medications and appliances at prices that include "surcharges" demanded by sellers who manage to overcome bureaucratic obstacles and short supplies.

[…]

. Drugs, especially antibiotics and cardiovascular preparations, are in short supply, of poor quality, and archaic. For example, a 1987 textbook of internal medicine suggests the use of leeches to treat malignant hypertension

We were struck by the low intensity of care on medical and surgical wards in tertiary care teaching hospitals, particularly the lack of nurses and monitoring equipment. The Minister of Health has acknowledged that many hospitals are "little more than places to sleep," and lengths of stay average 17-18 days as patients await diagnostic studies utilizing outdated, broken, or inefficient equipment.

This led to some proposed changes:

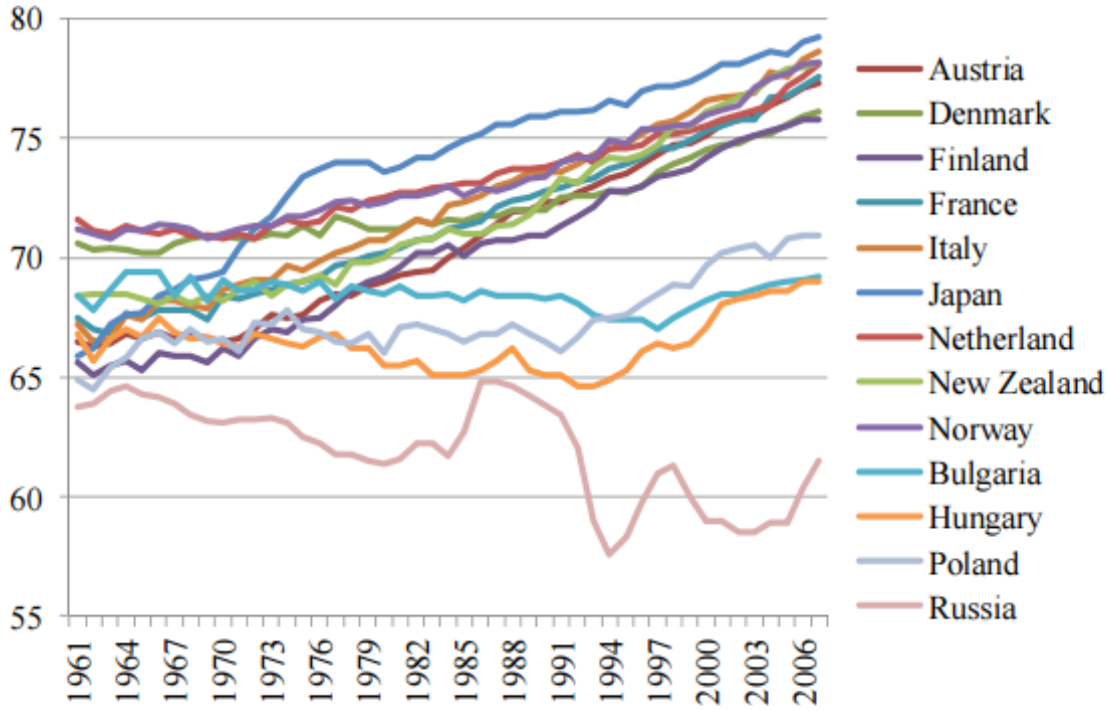
> *There is much popular skepticism (still expressed privately) about perestroika,49 and many Soviets we asked expressed skepticism about the leadership's commitment to reform health care in particular, since the bureaucrats and party bosses, sheltered by a network of exclusive clinics and hospitals, have not suffered the consequences of their inattention to the public system. The failure of Gorbachev's first program directed at health, the 1985 campaign against alcoholism,8 has increased suspicion that government planners are not capable of organizing successful health care programs. In conclusion, the resolution of the current economic crisis in the Soviet Union will determine its relevance as a world economic power into the twenty-first century. There is a crisis in the health sector, too; the record of declining health indices, the lack of technological sophistication, and the poor quality of medical care are well known in the West. We have added our own observations about that record and speculate that because of inadequate funding, scant access to Western capital, and constraints placed on the development of alternatives to the state health care system, real improvements in this area may not appear soon. A year after the announcement of plans to reform the Soviet health care system, Chazov challenged the timidity of the reforms at a special Communist Party conference: "If we (the Soviet Government) truly want to resolve the problems of health care, we must immediately change the standards by which that care is planned and financed." Future improvements in the general Soviet economy and greater administrative flexibility will determine whether the Soviet health care system will improve.*

Field (1990) is somewhat less harsh in his critique than Rafferty and Schultz, but he is far from praising its achievements.

Mortality rates and life expectancy

Kumo (2013) surveys research on mortality trends and other indicators in Russia. Regarding life expectancy, a figure summarises trends from 1961 to the end of the USSR:

Figure 2. Male Life Expectancy at Birth (Year)

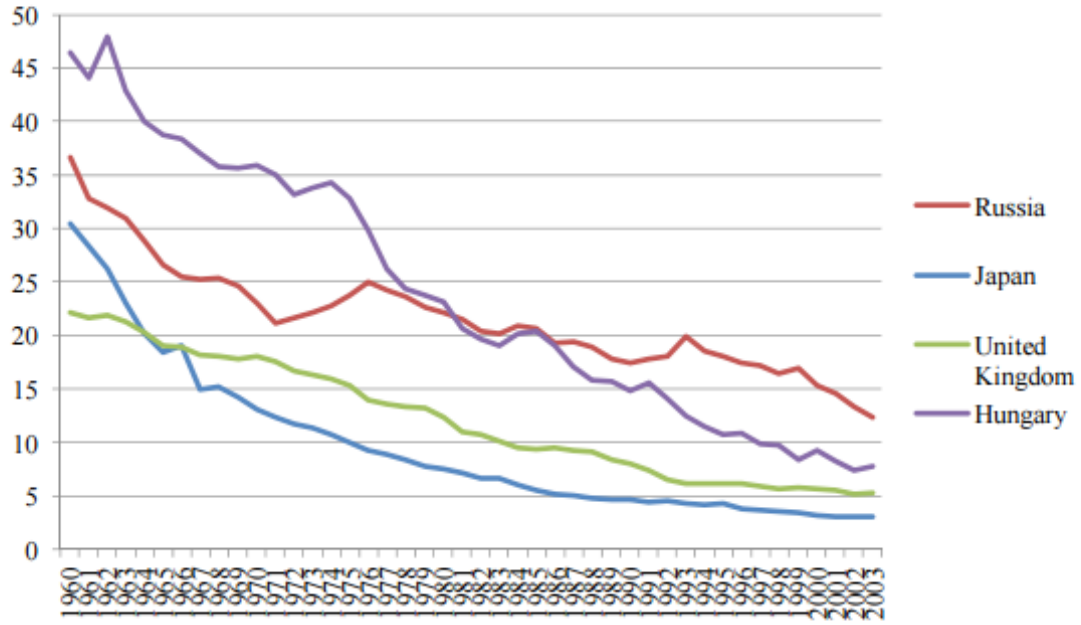


(Prepared by the author from World Bank, *World Development Indicators 2009* and Rosstat, *Demograficheskii ezhegodnik Rossii*, various years)

[Source: Kumo (2013)]

The increase in life expectancy in the 80s was, according to the author, due to Gorbachev's anti-alcohol campaign.

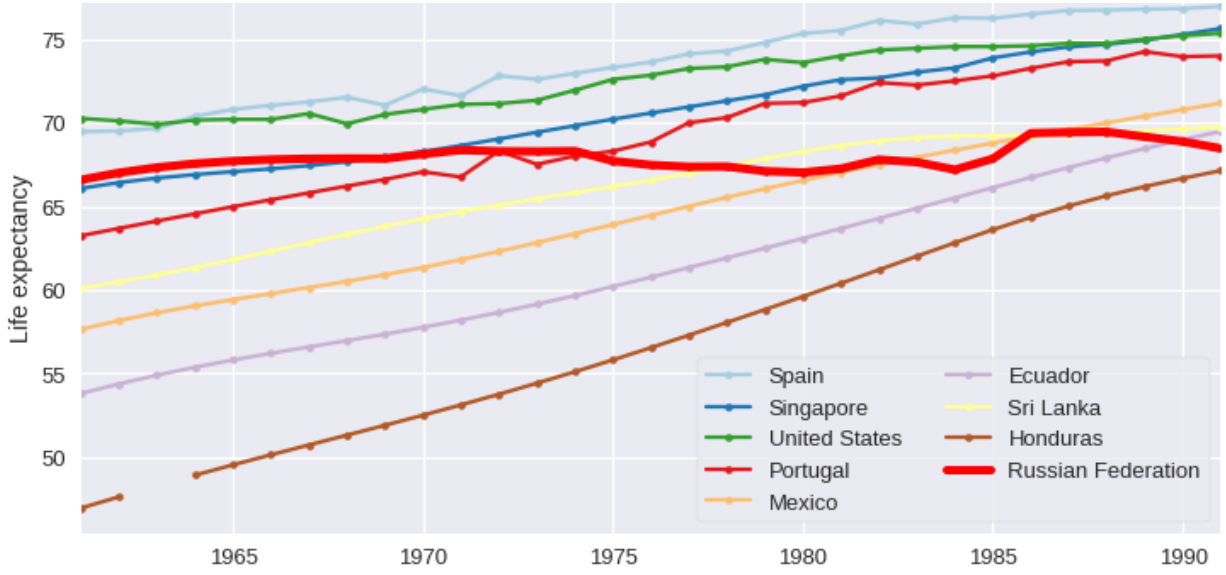
Figure 3. Infant Mortality Rate, 1960-2003, 1/1000.



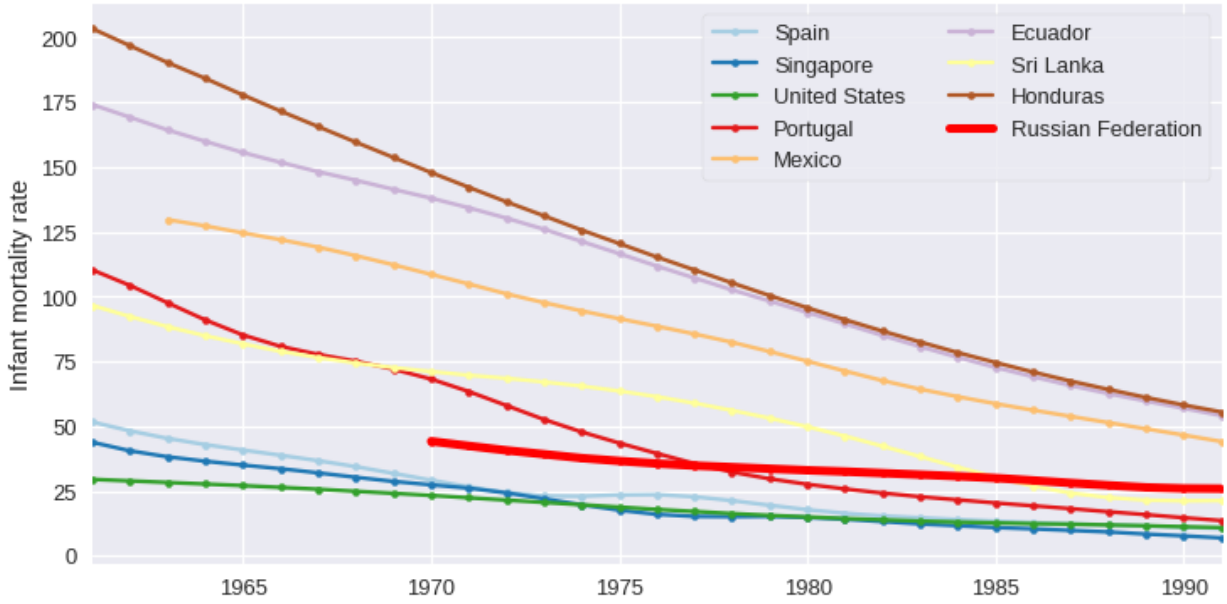
(Prepared by the author from World Bank, *World Development Indicators 2009* and Rosstat, *Demograficheskii ezhegodnik Rossii*, various years)

[Source: Kumo (2013)]

We can make the comparison clearer by using the same countries that back in 1922 had the same GDP per capita as the Soviet Union,



[Source: World Bank]



[Source: World bank]

From the plots above, it is clear that the rate of increase (for life expectancy) and the rate of decrease (for infant mortality) of the USSR does not compare favourably to other countries that in 1922 had a similar level of wealth. Life expectancy, for example, stayed almost flat from 1960 to 1985. In that same time, Spain gained more than five years.

Kumo comments on the high number of hospital beds and doctors,

> *In the Soviet Union medical services were provided for free, and in terms of quantitative indicators such as the number of doctors, nurses, and hospital beds, the level of medical care was superior to that of developed nations. This much is widely known, and can also be seen in official statistics from the Soviet era (Levin, 1979; Kotryarskaya, 1990; Cromley and Craumer, 1990, 1992). From the Soviet era to the present day, the number of doctors and nurses has been high compared with developed nations. In 1985, during the Soviet era, there were 3.9 doctors for every 1,000 people7. In the same year in the U.S., there were 1.7, while in Japan the figure was 1.5. Even in 2000, Russia had 4.2 doctors for every 1,000 people, a figure that was only sur-*

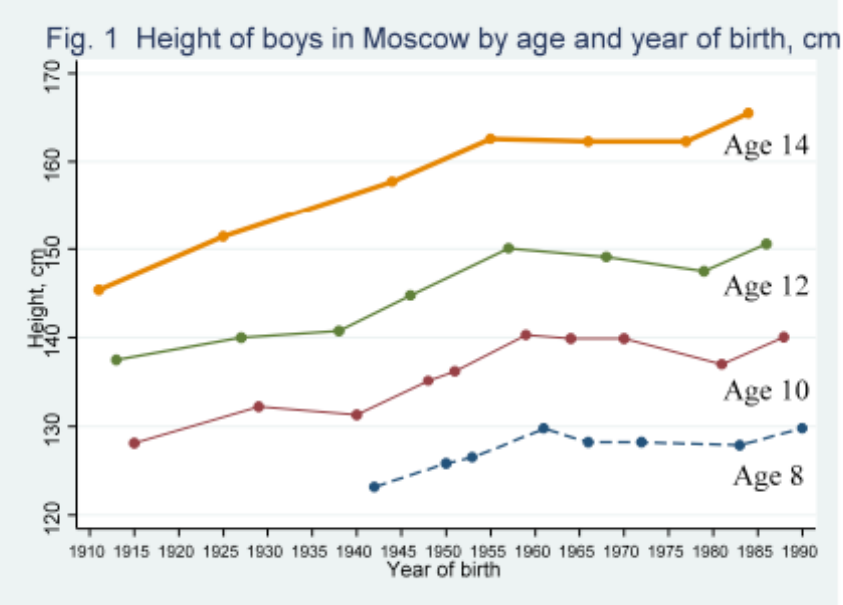
passed by Greece (with 4.3) among the OECD nations.

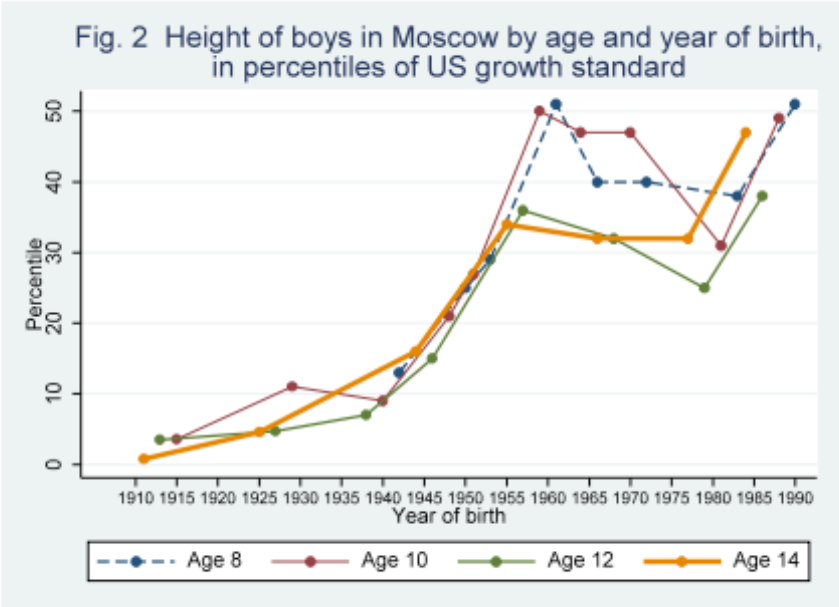
He then says that the rise in mortality rates were not due to worsening healthcare or increases in pollution, but to increased levels of alcoholism. However, he doesn't cite much evidence to support this claim. For healthcare, he says that it's not plausible that healthcare deteriorated if there was economic growth until the 80s, and that in 1961, Japan was able to import 10 million vaccines for polio from the USSR. This is inconsistent with the picture the other researchers show, both qualitatively and quantitatively: even if there was growth, healthcare spending went down. And then, it is possible for quality to go down as spending is constant.

Antropometric data

Brainerd (2008) studies anthropometric data, and concludes that initially, the rate of growth in children's height compared favourably to that of similarly developed nations in the pre-1970 period, but that it stagnated afterwards.

But data for 14-year olds cannot rule out the hypothesis that this growth rates were just continuations of the trends that had been present in the Russian Empire.





[Source: Brainerd (2008)]

Brainerd concludes:

While the Soviet experiment of the twentieth century clearly failed and in countless ways harmed the lives of Soviet citizens, the record of Soviet health achievement prior to 1970 remains impressive.

Mironov & A'Hearn (2008) study anthropometric evidence from the Saratov province region in the tsarist era. The first provide previous estimates, shown in the chart below.

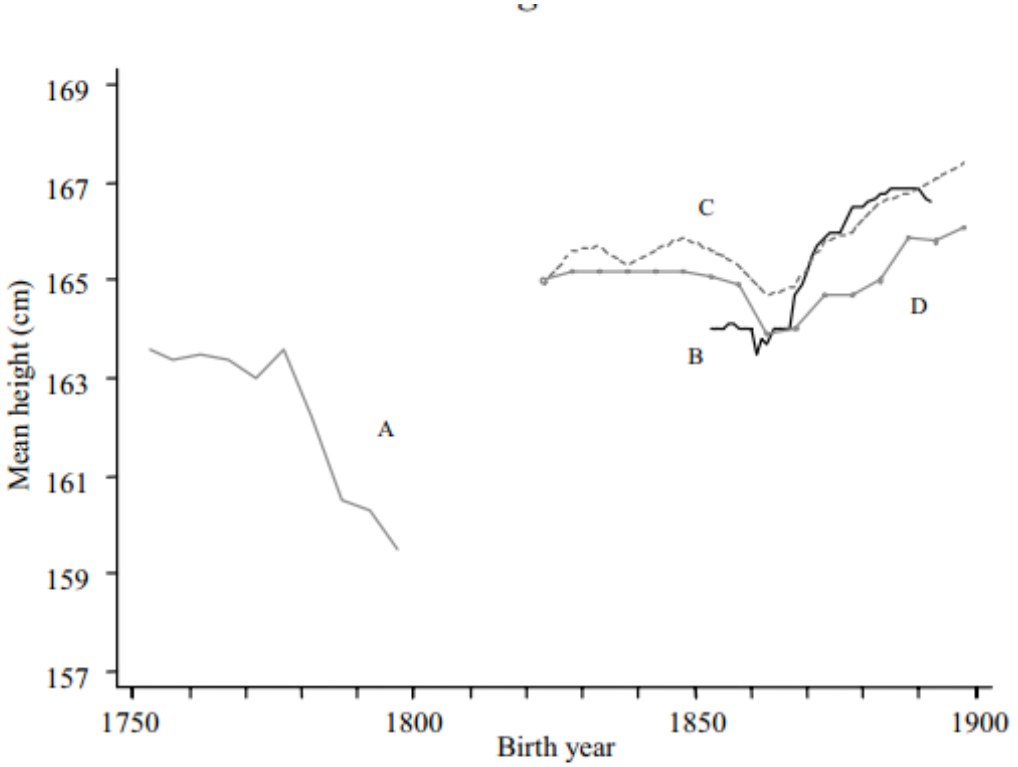


FIGURE 1
PREVIOUS ESTIMATES OF ADULT MALE HEIGHT IN RUSSIA

Notes: (A) Individual navy and artillery recruit data; (B) army conscript data; (C) Moscow workers; (D) central Russian rural workers. Series A, C, and D by 5-year birth cohorts; Series B annual.
Sources: (A) Mironov, "*Burden*"; (B, C, and D) Mironov, *Sotsial'naia istoria*, pp. 338, 345. Series B has been uniformly increased by 1.8 cm to correct an error in the source.

Source: Miranov & A'Hearn (2008)

They then introduce new measurements from the Saratov province:

FIGURE 2
ESTIMATED MEAN HEIGHT OF 21-YEAR-OLD MALES, SARATOV PROVINCE

Notes: (1) Individual-data estimates by birth cohort from Table 3, joined by solid line; shaded area denotes two standard error band; markers placed at the sample mean birth year for each cohort. (2) Aggregate-data estimates from Table 4, annual frequency. (3) Linear time trend fitted to Series 2.

Source: Miranov & A'Hearn (2008)

This confirms the rising trends present in the Russian Empire, therefore giving more plausibility to the thesis that height increase in the early USSR was a continuation of previous trends, not due to special improvements in healthcare or nutrition caused by the revolution.

In a recent review of heights and their relation to health, by Steckel (2009) mentions work by Komlos (1999), who argues that improvements in health in Russia (as measured by height) were not particularly good, not only after 1960, but even before, in comparison with Mexico, Philippines, Spain, Chile or Jamaica.

Conclusion

The Soviet healthcare system heavily underperformed most of the countries that we can use as meaningful comparators. Relative to other countries that began from the same situation of poverty as the USSR, its performance was no better than the systems of those countries. After the 70s, health outcomes deteriorated, and the utter failure of the system became apparent.

Despite the high number of hospital beds and physicians, the Soviet Union wasn't able to deliver better healthcare outcomes to its population, relative to developed countries, though it did make substantial improvements in the 1920-1950s period. This should make us wary of making hasty comparisons based on individual indicators instead of a consideration of the whole picture.

CHAPTER 9: POVERTY & INEQUALITY

The last chapter hinted at some inequality in the access to healthcare. Here we look at more typical measures of inequality, focusing mostly on aggregate data.

The USSR Constitution of 1977 said

> ***Article 19.*** The social basis of the USSR is the unbreakable alliance of the workers, peasants, and intelligentsia.
>
> ***The state helps enhance the social homogeneity of society, namely the elimination of class differences and of the essential distinctions between town and country and between mental and physical labour,*** *and the all-round development and drawing together of all the nations and nationalities of the USSR.*

One would thus expect the Soviet Union to be a relatively equal society, and one would expect little amounts of poverty. Alas, it wasn't quite like that.

One possible defence of the Soviet Union's general failings is to appeal to equality and basic needs. Maybe the system performed worse on average than the market economies of the West, but what really matters is to cover basic needs first. What use, the argument goes, is having an economy that allows the existence of super-rich people and supermarkets that sell five different kinds of hummus when there are other people that are destitute?

Our analysis begins with an article published in 1977 by Alastair McAuley, *The Distribution of Earnings and Incomes in the Soviet Union*, for no other reason than that this article was

one of the first to tackle the question. The data he uses in his article comes from official Soviet sources, with a peculiar twist: the Soviet government didn't directly publish any income distribution statistics itself. McAuley has to compile the series from several other sources: household budget surveys, income surveys, earnings censuses, and earnings surveys.

He finds that inequality as measured by the ratio of the earnings of the top tenth to the bottom tenth dipped 40% between 1956 and 1965, driven by more rapid relative rises in the incomes of the poor (144%) than those of the rich (38%). According to this data the absolute gain was equal across society. By 1967-68, the decile ratio was around 3, meaning that the richest citizens, on average, were earning three times as much as the poorest ones, which seems quite equal. By contrast, the UK had a ratio of 3.4 in those same years.

The article also provides an estimate of how many families were in poverty, as defined by the 1974 government subsidy for needy families (those that earned under 50 rubles per month). This, together with the fact that inflation rates were low, allowed McAuley to work backwards to calculate poverty rates in 1967, as he has income distribution data for that year. The result is staggering: according to his most conservative estimate, including state farm workers, around 40% of the entire population in 1967 were poor by the Soviet standards of 1974.

The next paper of relevance is the clearly named "Income Inequality Under Soviet Socialism" by Abram Bergson (1984). Like McAuley, he spends quite a few dozen pages discussing methodological issues and the tricks one has to go through in order to provide a reasonable estimate of the income distribution in the USSR. In the paper he produces two Gini coefficients, using different data, methods, and different years. Both his estimates reinforce the idea that the Soviet Union had low inequality when compared with Western

countries, indeed even lower than the Nordic social-democracies of its time.

TABLE 6

INCOME SHARES OF SELECTED PERCENTILE GROUPS AND GINI COEFFICIENTS, DISTRIBUTIONS OF HOUSEHOLDS BY PER CAPITA HOUSEHOLD INCOME, AND GDP PER CAPITA, USSR AND WESTERN COUNTRIES, SPECIFIED YEARS

Distribution, Country and Year	GDP per capita (U.S. = 100)	Income Share (%) of				Gini Coefficient
		Lowest 10%	Lowest 20%	Highest 20%	Highest 10%	
Nonfarm households, pre-tax						
USSR, 1967 (McAuley)	38	4.4	10.4	33.8	19.9	229
Urban households, post-tax						
USSR, 1972–1974 (Ofer-Vinokur)	48	3.4	8.7	38.5	24.1	.288
All households, pre-tax						
Australia, 1966–1967	56	3.5	8.3	41.0	25.6	.317
Norway, 1970	64	3.5	8.2	39.0	23.5	.306
U.K., 1973	66	3.5	8.3	39.9	23.9	.308
France, 1970	68	2.0	5.8	47.2	31.8	.398
Canada, 1969	74	2.2	6.2	43.6	27.8	.363
U.S., 1972	99	1.8	5.5	44.4	28.6	.376
All households, post-tax						
Sweden, 1972	80	3.5	9.3	35.2	20.5	.254

Sources: GDP per capita as in Table 3. Income shares for USSR 1967 calculated from frequency distribution in McAuley (1979, p. 57); for USSR, 1972–1974, see Ofer and Vinokur (1980a). For all Western countries, income shares from Sawyer (1976, p. 17). For comparability, all Gini coefficients computed from income shares of decile groups. Ofer-Vinokur coefficient in source, apparently calculated from frequency distribution, was .293.

Section IX of Bergson's paper discusses the so called elite-classes of the USSR.

Who were the elite earners in the Soviet Union? Following Matthews (1978), Bergson defines them as those earning 400-500 rubles a month, four times the average 1972 pay of all Soviet wage earners and salaried workers (WESW), then they made up about 0.2%-1% of the population. 0.2% is a lower bound, because it includes only main occupations, and we know second sources of earnings (through e.g. dentistry or retailing) were prevalent. Bergson also notes that 10% of WESW had earnings below the official minimum wage of 60-70 rubles per month in the 1971-73 period.What occupations did elites have? Bergson

provides us with a table from Matthew's book. For comparison, the distribution of occupations of high earners in the US is also shown:

TABLE 10

ELITE PERSONNEL BY OCCUPATIONAL STATUS, USSR, NOTIONAL ESTIMATES FOR THE SEVENTIES

Occupation	Number of Persons (thous.)
Enterprise directors	17
Intelligentsia, all	40
Academicians, university and institute directors, et al.	10
Leaders in arts and arts bureaucracy	4
Editors, senior journalists	17
Other	9
Government, komsomol and trade union officials	60
Military, police and diplomatic personnel	30
Party officials	80
All	227

Source: Drawn, with the permission of the author and publisher, from Matthews (1978, p. 31).

TABLE 12

OCCUPATIONS OF PERSONS EARNING OVER $50,000 PER YEAR, U.S., 1969

Occupation	Number of Persons (thous.)
Salaried managers, construction, manufacturing, transport, trade	49.6
Physicians, dentists, et al.	53.2
Lawyers, judges	18.8
Managers (self-employed)	12.5
Craftsmen and kindred workers	6.5
Brokers	5.8
Insurance, real estate and finance executives; sales employees	16.1
Sales workers, n.e.c.	11.8
Writers, artists, entertainers	5.0
Others	59.2
All	238.5

Source: USDC, Bureau of the Census (1973b, pp. 16ff) after Matthews (1978, p. 181).

The USSR thus had a slightly smaller number of "elites" compared to the US, especially when considering that the USSR had a larger population. But while in the US most of the high earners were employed in the private sector, in the Soviet Union at least 70% of those elites had direct government affiliation, validating the popular idea that the Soviet government did bestow substantial benefits upon those with close ties to it.

Bergson finds some degree of intergenerational transmission of elite status, but not because of inherited wealth. The USSR did allow inheritance, subject to some taxation, but there weren't many opportunities to make anything worth passing down. But we can consider and measure status far more broadly—income, type of job, scientific publications, quality of housing— as for example Gregory Clark does for Sweden or the UK.

In agreement with Clark's key facts for other countries, Bergson finds that children of elite

personnel, and high skilled workers such as engineers, who comprised around 14% of the population, accounted for 31.5-51% of enrolment in the universities for which data is available. Conversely, the children of manual workers and collective farmers were substantially under-represented in the university population. And this came about despite the Soviet state deliberately trying to equalise access to university:

> *The disproportionately low enrolment of children of manual workers in the universities represents a dramatic denouement to early post-Revolutionary efforts to assure their predominance. After a protracted period of preoccupation with merit under Stalin, measures to "rectify" the university social structure were initiated by his successors, but seemingly with only limited effect.*

What's more, the children of those in skilled occupations tended also to find themselves in skilled occupations:

> *Something is known also about selected groups of specialists. Although reference is still not necessarily to elite personnel, it is illuminating that 62.9 percent of persons employed in "skilled mental work" or serving as "managerial personnel" in a Leningrad machinery factory in 1967 were children of specialists with higher education; 78.0 percent of the children of managerial personnel and 62.9 percent of the children of highly-skilled scientific technical personnel in Leningrad machinery enterprises in 1970 were either specialists or full-time students in advanced institutions; and 49.0 percent of "highly skilled personnel in. creative occupations" and 45.8 percent of personnel in "highly skilled scientific and technical work" in the city of Kazan in 1967 were children of employees in posts requiring specialized or higher education (Yanowich 1977, pp. 114ff; 0. I. Shkaratan 1973, p. 297).*

Not very surprisingly, the children of the most elite personnel of all, the members of the

Politburo, and also their spouses have tended to find "jobs which place them in the upper ranks of the intelligentsia, but not necessarily over the elite threshold".

While this persistence of status across time goes against the principles of socialism, its extent was lower than in the West, claims Bergson. In addition to higher income, as we have said, "elites" in the USSR also enjoyed other non-monetary benefits, benefits that wouldn't appear in measures of inequality that rely on income like the Gini coefficient.. To fully understand the status of elites in the former USSR, we need to take into consideration non-material benefits. But because of their nature and data scarcity, they are hard to quantify.

Regional inequality

So far we have seen an overview of inequality across the USSR as a whole. But in terms of population, the USSR is mostly Russia and Ukraine. What does the data look like between and within constituent republics?

The Soviet Union not only tried to equalise incomes across the USSR, but also in theory between different republics. Ozornoy (1992) suggests that such a trend did exist until the 1950s, but after then, little further convergence happened. This is in spite of economic growth: birth-rates in the poorer republics outpaced it, leading to less per person even while the total pot went up. Part of this was down to centralised investment planning.

> *The pattern of investment distribution among the union republics during the period 1976-88 does not reveal any systematic effort to use the allocation of investment as a policy tool for reducing development disparities, particularly when allowance is made for the differing rates of population growth. Rather, the pattern suggests that the federal government, while providing an increment in investment to ensure some development in all republics, based its spatial invest-*

ment allocation decisions on an assortment of general economic and geographical considerations, such as resource and energy development in Asiatic RSFSR, rates of return on capital, accessibility to markets and geopolitical factors. The primacy of the 'state as a whole' considerations over equity considerations in the investment shifts may be seen as a perfectly logical approach by decision-makers within the federal administration which actually pronounced that the task of inter-republican equalization had been resolved!

In the late 80s, this is how the USSR looked like in its republics:

Table 1. Indicators of levels of development of Union Republics in the late 1980s

	GNP proxy per capita (1988)	Urban population as percentage of total (12 January 1989)	Percent of labour force in: Agriculture (1987)	Industry and construction (1987)	Infant mortality per 1,000 births (1988)
RSFSR	100	73·5	14	42	18·9
Ukraine	77	66·9	20	40	14·2
Belorussia	91	64·7	22	40	13·1
Moldavia	78	46·9	35	28	23·0
Baltics					
Estonia	108	71·6	13	42	12·4
Latvia	95	71·2	15	40	11·0
Lithuania	100	68·0	18	41	11·5
Transcaucasus					
Georgia	83	55·7	27	29	21·9
Armenia	65	68·8	19	39	25·3
Azerbaijan	59	53·8	34	26	27·0
Central Asia					
Kazakhstan	81	57·2	23	31	29·2
Uzbekistan	54	40·7	38	24	43·3
Kirghizia	56	38·2	34	27	36·8
Tadzhikistan	46	32·6	42	21	48·9
Turkmenia	65	45·4	41	21	53·3

Sources: GNP proxy per capita is the sum of estimates of consumption, published data on gross fixed investment, and estimates of expenditures on most government services. The latter are calculated in the same way as is done for GNP as a whole and described by Schroeder in US CONGRESS, 1982, pp. 137–40.
Share of urban population – *Izvestiia*, 29 April 1989, pp. 1–3.
Shares of labour force in agriculture and industry – GOSKOMSTAT SSSR, 1988c, pp. 16–17.
Infant mortality – GOSKOMSTAT SSSR, 1988a, p. 29.

Though this is by no means as unequal as the modern USA, EU or even Britain, the richest republics are more than twice as rich as the poorest, a pattern that is to some extent it mirrored today in their post-USSR development. The richest republics were the Baltics; the poorest were in Central Asian republics. A look at salaries reveals the same picture, so our

intuitive inference of average consumer income from per capita GDP is merited.

This issue was well known and discussed during Gorbachev's era, but not much had been done. In 1989, with the rise of nationalist tensions, Gorbachev finally acknowledges the problem

> *At the September (1989) CPSU plenum on nationality, he admitted: 'Despite impressive progress in "evening out the differences", serious problems still remain in this area' (ibid.). He vaguely suggested the setting up some kind of mechanism for using state (federal) budget funds 'to resolve consistently the pressing problems of those regions that are lagging behind'. The plenum's resolution was formulated inore specific language: 'The country must have a system of economic levers and incentives which enables the USSR government, on the basis of the efficient use of state budget resources, to work in conjunction with the republics in pursuit of a purposeful line aimed at eliminating the lag in the economic development of individual regions due to objective factors and also to create an all-union fund to provide aid to regions affected by natural disasters and ecological catastrophes, and for the development of new territories' (REZOLIUTSIIA, . . ., 1989)*

These gaps didn´t close, as the USSR fell some years layer. This regional inequality can be visualised in the table from Alexeev (1993) that I reproduce overleaf.

TABLE 2A

DISTRIBUTION OF U.S.S.R. POPULATION BY PER CAPITA HOUSEHOLD INCOME IN 1988, BY REPUBLIC

(% in each income interval)

	Rubles Per Month				
	Under 75	75–100	100–150	150–200	Over 200
U.S.S.R.	12.6	15.7	33.3	21.2	17.2
RSFSR	6.3	13.1	34.0	24.6	22.0
Ukraine	8.1	16.8	38.5	22.4	14.2
Belarus	5.0	12.9	36.8	25.8	19.5
Uzbekistan	44.7	23.9	22.2	6.4	2.8
Kazakhstan	15.9	19.3	33.7	18.1	13.0
Georgia	16.3	17.4	31.6	18.1	16.6
Azerbaijan	33.3	22.2	27.3	10.9	6.3
Lithuania	3.6	10.7	34.6	27.1	24.0
Moldova	13.0	19.8	37.3	18.9	11.0
Latvia	3.2	9.5	31.8	27.2	28.3
Kyrgyzstan	37.1	23.1	26.0	9.2	4.6
Tajikistan	58.6	20.7	15.5	3.8	1.4
Armenia	18.1	21.5	34.7	16.2	9.5
Turkmenistan	36.6	23.0	25.8	9.4	5.2
Estonia	3.9	9.0	28.0	25.5	33.6

TABLE 3

MINIMUM AND MEAN INCOMES AND ESTIMATED INEQUALITY COEFFICIENTS FOR U.S.S.R. PER CAPITA INCOME—1980, 1985, 1988, 1989, 1990

	Minimum Income	Mean Income	Gini	Atkinson indices		
				$A=0.5$	$A=2$	$A=3$
1980[a]	12.6	112	0.290	0.171	0.327	0.414
1985[a,b]	13.8	127	0.284	0.165	0.316	0.400
1988[a]	14.4	147	0.290	0.158	0.315	0.403
1989[b]	14.6	151.3	0.275	0.150	0.294	0.376
1990[b]	14.8	171	0.281	0.144	0.295	0.381

[a]Estimates based on data in left-hand panel of Table 1.

[b]Estimates based on data in right-hand panel of Table 1. The Gini coefficients and Atkinson indices were derived by using a minimum Kolmogorov-Smirnov estimator to fit a lognormal curve, constrained by the exogenously supplied means and minima shown above, to the data in Table 1. The means for 1980, 1985, 1988 are given in *Ekonomicheskaya gazeta*, No. 25, 1989. The means for 1989 and 1990 are given in Goskomstat press release No. 175 of June 10, 1991. The minimum incomes for all years were estimated by the method explained in Alexeev and Gaddy (1991).

TABLE 4A

MEAN INCOME, INEQUALITY MEASURES, AND FAMILY SIZE FOR REPUBLICS OF THE U.S.S.R., 1988

	Mean Income	Gini	Atkinson indices			Family Size
			$A=0.5$	$A=2$	$A=3$	
1. Tajikistan	78	0.318	0.304	0.459	0.543	6.1
2. Uzbekistan	91	0.306	0.269	0.420	0.503	5.5
3. Kyrgyzstan	101	0.312	0.253	0.414	0.501	4.6
4. Turkmenistan	102	0.316	0.253	0.418	0.506	5.6
5. Azerbaijan	107	0.317	0.246	0.413	0.503	4.7
6. Armenia	125	0.280	0.208	0.347	0.426	5.5
7. Kazakhstan	134	0.291	0.203	0.354	0.438	3.8
8. Moldova	132	0.264	0.194	0.321	0.393	3.1
9. Georgia	141	0.313	0.194	0.368	0.463	3.9
10. Ukraine	142	0.248	0.179	0.294	0.361	3.0
11. Belarus	155	0.242	0.172	0.283	0.348	2.9
12. Russia	159	0.264	0.176	0.305	0.380	2.9
13. Lithuania	164	0.244	0.166	0.278	0.345	2.9
14. Latvia	174	0.250	0.157	0.276	0.347	2.7
15. Estonia	186	0.278	0.161	0.307	0.390	2.6

Poverty

Most of what is known about poverty in the Soviet Union is gathered into a single book, bearing the descriptive title *of Poverty in the Soviet Union*, by Mervyn Matthews (1986). Here I concern myself with Part I of the book, which focuses specifically on what it meant to be poor in the USSR. Matthews, like the other authors, tries to put together his data from several sources, including not only scarce official reports, but also individual Soviet research papers, emigres surveys, and even *samizdat*.

In it we learn that in **1967**, two Soviet economists, Sarkisyan and Kuznestova, drafted basic budgets for a series of families, representing the basic needs of people in different parts of the country. These minimum budgets suggested a figure of 51.4 roubles per person for a family of two with two children, or 205.6 roubles per family.

But in 1965 the average wage in the Soviet Union was 87.8 roubles (175.7 for two earners), so Matthews concludes they conclude that by these figures, more than half of the population would count as poor.

They also designed a 'prospective minimum budget', representing what a poor family would be able to consume in a few years due to increases in production of consumer goods. That budget required earnings of 2×133.2 roubles, and this figure matched the average gross wage by 1976. They also designed a 'rational' budget, costing 153.3 roubles per capita, putting it beyond the reach of the average family, as even by 1980, the average wage was 168.9 roubles. This was barely enough to sustain two people under the rational budget.

If we settle for a poverty threshold of 60 roubles in **1978** (the "minimum budget" for that year), then a sociological study carried out by Soviet economists finds that 23% of the population was poor (based on a sample size of 62,000 family budgets, towns of origin not specified). In Moscow, a poverty rate of 12-15% was found (based on a sample size of 100-388 families in 1977 and 1979). In Estonia, one of the richest Republics, 18% of families with children were found to be poor. Other surveys show even greater rates in the Tuvan Autonomous Republic, populated by Tuvans, a Turkic people, and the city of Novosibirsk.

Matthews also notes that using the US poverty threshold, 32.8% of median income, which is a relative poverty measure, would put *most* of the Soviet population in the category of poor. This sounds as an unfair comparison: perhaps the poor in the USSR still enjoyed better conditions of living given that the State massively subsidised education, housing, healthcare, and pretty much everything else. This is dubious, though, given the rest of this book, but I will comment further on it below. Some corrections would also have to be made for inflation (increasing poverty above measured levels) and illegal job activity (decreasing it). Matthews attempts the exercise and comes up with revised figures for some cases,

but the deviation is not substantial, although it slightly increases the number of people in poverty.

What did this poverty amount to, in practical terms? In terms of food, Sarkisian and Kuznestova calculated the food that the average family described above needed, which column one of the table below shows:

Table 3.1. *Food consumption patterns (Kilos, per capita, per annum)*

Foods, (Soviet categorisation)	1 Current minimum diet, 1965	2 Average Soviet diet, 1965	3 Average Soviet diet, 1979	4 Average US diet, 1979	5 Prospective minimum diet	6 Emigre sample diet[a]	7 USDA 'Thrifty Food Plan', 1974[b]
Meat, meat products animal fat, conserves	44.0	41.0	58.0	120.4	75.0	38.4	50.5
Fish and fish products	23.0	12.6	16.3	6.1	19.8	8.8	
Milk and milk products	146.0	251.0	319.0	151.2	184.0	289.5	171.4
Eggs (units)	124.0	124.0	235.0	283.0	153.0	130.4	192.0
Sugar	30.0	34.2	42.8	41.4	40.44	12.0	17.9
Vegetable oil	16.0	7.0	8.4	12.2	10.0	5.4	14.9
Potatoes	137.0	142.0	115.0	66.6	126.4	59.8	35.9
Vegetables	121.0	72.0	98.0	89.2	164.0	60.0	136.9
Fruit and berries	28.6	28.0	38.0	62.2	81.0	31.8	
Bread, macaroni, flour	145.0	165.0	139.0	89.9	174.0	90.0	100.7

[a] The returns from the emigre sample, relating mainly to the years 1977–9, are medians and should be regarded as indicative only.
[b] The 'Thrifty Food Plan' of the US Department of Agriculture has been converted into kilos per annum (milk products included), and rearranged as well as the categories permitted. It included 24.8 kilos of 'accessories', omitted here.
Sources: Sarkisyan and Kuznetsova, pp. 58, 105ff, 139ff (Columns 1, 5), *Nar. khoz.*, 1979, p. 432; 1980, p. 405 (Column 4), *SAUS*, 1981, p. 126 (Columns 2, 3). B. Peterkin, p. 125 (Column 7).

Matthews does not fully believe that this minimum diet (column 1) was an average diet for the poor, as if you compare with column 3, the average diet for the whole USSR decades later was in many categories behind the minimum diet of 1965. In addition, scarcity of supply would have meant that not all of those items could have been purchased By those with less resources.

He claims that deriving the actual figures from official data is close to impossible. One way of getting it is asking émigrés what they were actually eating (column 6), and this diet was behind the national averages for 1980 and the prospective minimum diet. Note that

the emigré column is the median of the whole sample, not of the poorest, so at most this is an upper bound on what the actual poor were eating. Compare with column 7, based on a sample of what poor New York families had for diet. Both the emigré sample and the model budgets do point that Soviet consumption of fruit, vegetables, and meat was even below the average for poor New York families.

Under-provision of clothing is another aspect of poverty that Matthews discusses. As with food, the model budgets allocate a certain amount of money to a certain amount of clothing. Clothing was quite expensive in the Soviet Union, and a winter coat, which seems like a basic thing to have if you happen to live in Russia, was extremely expensive, and could consume a whole month worth of salary or more for an average worker (120-200 roubles). A shirt was more reasonably priced, at 8-12 roubles. But still, if one considers that such an amount supposes 10% of a wage, it is still extremely expensive. To put it into perspective, for the average monthly UK wage in 2017, around £1700 after tax, it would mean an average shirt would cost about £170. Not surprisingly, 22% of the emigré sample had no winter coat and 25% had no fur hat. 97% of the surveyed considered the situation around clothing costs to be a problem or an acute problem. And this is, remember, a sample of mainly Jewish emigrés from an urban setting, not of poor people in particular. From this Matthews infers that the situation for the poor must have been worse.

Housing may not seem to be particularly problematic for the poor, because as mentioned before, it was heavily subsidised. Housing was divided in houses provided by different public bodies (government, corporations, and so on) and private housing (housing cooperatives and dachas[29]). No one was allowed to have more than one house, except for dachas, but those were only legally usable in summer.

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29 A country house in Russia typically used during holidays

This system, while ruthlessly egalitarian on first sight, in practice was not:

A system such as this, oriented towards the provision of standard amounts of housing for all, with strict financial restraints, might be regarded as protective of poor people's interests. One might further imagine that the relationship between poverty and slum-dwelling, so characteristic of' capitalist' lands, would be weakened. This has not happened for several cogent reasons. Firstly, Soviet towns have always been characterised by acute housing shortages from which most people suffer.

Secondly, the provision of superior accommodation has long been used as a reward for service to the state, or as an incentive to work harder. The sharp fall in the per capita provision of urban housing during the first Five Year Plans, for example, necessitated special provision for managers and outstanding workers. The destruction wrought by the Second World War, and the neglect of the sector in the post-war decade, had the same effect. The Khrushchev leadership endeavoured to increase housing stocks, but it still had to urbanise rapidly in the interests of economic growth, and most housing privileges were retained. When the rate of urbanisation began to slow in the mid-sixties, the housing sector, though lacking the variety found in capitalist society, was still characterised by a good deal of differentiation. The Brezhnev leadership adopted a highly protective attitude to most forms of privilege, and maintained the existing accommodation benefits.

Thirdly, the allocation system has over time developed subtle informal mechanisms which work to the detriment of the less privileged citizens. The poor, for instance, have fewer chances of acquiring the better-quality accommodation erected by powerful organisations or enterprises, and are more likely to end up in meaner flats belonging to local Soviets. Poor people cannot usually buy living space in cooperative housing projects because, compared with the nominal rents in the state sector, such housing is extremely expensive. If they do so, the space they acquire is (to

judge from our sample returns) close to the minimum, and mortgage repayments greatly exacerbate their financial difficulties. The poor have less of the political influence needed to speed progress through the local waiting lists (see Chapter Six).

The problem of Soviet slums has, of course, always been veiled in secrecy. The term, like 'poverty' still cannot be officially ascribed to any Soviet dwelling. But such dwellings continue to exist and are likely to house the poorest members of society.

And in addition to this, many flats were communal, where multiple families were forced to live together –19% of the families from the emigré sample were in this situation. 60% of the respondents in the sample thought that their space was rather inadequate or grossly inadequate. Basic equipment like sanitation or water supply improved throughout the decades, but still hadn't reached everyone by 1975, especially those in smaller and more remote towns. While in larger settlements in Russia (1975) 87.6% of housing had cold tap water, only 10.3% of smaller settlements enjoyed this. For the masses of poor peasants and workers in smaller towns, this would have been even worse.

Table 3.6. *Living space equipped with domestic amenities (percentages)*

Size of settlement	Sanitation	Cold water supply	Hot water supply	Central heating
	White Russia, 1975			
Up to 5,000	12.8	10.3	1.8	14.6
5,000–10,000	13.7	15.7	5.4	15.0
50,000–100,000	55.2	56.0	37.0	52.3
Over 500,000	86.9	87.6	67.5	91.6
Average, all settlements	62.1	63.9	45.5	58.3

	Stavropol' Krai		Kalmyk ASSR	
	1970	1980	1970	1980
Sanitation	62	82	20	84
Water	64	85	20	84
Central heating	57	78	22	86
Bath or shower	50	76	19	84
Gas	87	93	26	94

Sources: White Russia: L. V. Kozlovskaya, p. 161. *Stavropol' Krai*: N. V. Tsogoev (ed.) p. 159. *Kalmyk ASSR*: Sh. M. Nalaev (ed.) p. 139.

The budgets are an endless source of detail, and also contain guidelines for what a minimum supply of household durables was, down to the number of chairs (eight), cupboards (three), and kitchen stools (four).

But Matthews again says that it is implausible that the poorest would have afforded this minimum budget. The cost of the furniture was around 1000 roubles, and that of 'cultural goods' (TV, radio, television, refrigeration, bicycle, camera, watches, and sport items) was around 400 roubles (In 1979). Eight years' worth of wages would have been required to acquire all of this, assuming that nothing broke or deteriorated.

Obtaining loans was extremely hard, and the State Bank did not offer them to individuals, so acquiring all of these elements would have been rather difficult.if one lived in the west. One could argue that a person lacking eight chairs and a television is not poor, that we should look only at food, water, housing and other core essentials, but even then, these basics did not fully reach everyone.

Finally, it is worth looking at what the poorer and richer citizens of the USSR did with their leisure time, which to some extent mirrors patterns found in the West. Richer citizens preferred intellectual and active pasttimes (study, art, scientific hobbies, and reading), while the poorer citizens preferred less intellectual and more passive activities (e.g. radio and television)One might wonder why this was the case. Why, despite having the explicit goal of ending poverty, and the Soviet state commanding the entire resources of the economy, it still didn't manage to end poverty.

From the analysis here and throughout this book, it seems that it was an issue of miscalculation: thinking that the poor were better off than they were, and that they were able to acquire the resources that they needed with the money that they had. To end poverty, the government would have needed to lower prices, which would have caused further shortages, or implement a rationing scheme, like in contemporary Cuba.

The fact that the study of poverty wasn't an ongoing activity – because, like unemployment, officially poverty did not exist in the Soviet Union – surely made it more difficult for the State to deliver on their promises of a guaranteed existence for everyone.

Part of this might be a consequence of the low representation of the poor in Soviet politics. In the Central Committee in 1981, one of the highest organs of Soviet politics, only 4.2% of 472 members were workers, 1.7% were peasants and 0.4% were low grade employees. In

lower ranks of the State, there were more poor citizens in their composition, but in none were they an established bloc.

Conclusion

The USSR managed to reduce inequality and poverty with respect to Tsarist times, and it did deliver in bringing a level of equality comparable to that of Nordic social democracies. However, it was totally unsuccessful at eliminating poverty, inequalities between Soviet republics, differences between urban and rural areas, or even the 'distinctions between physical and mental work'.

It was commonly regarded across social classes in the USSR that 'mental' jobs were of higher status and more desired than physical jobs. Regardless of the ownership of the means of production, someone has to flip the burgers and sweep the floors, and this work was still considered to be low status in the USSR.

It could be easily argued that the reason why these changes did not happen was the lack of political will. Could a mixed rationing/market system for consumer goods have solved poverty while keeping freedom of choice? Well, maybe. Would it have been possible to, through massive State investment, reduce the differences between the republics? Again, maybe. But in doing so, resources would have been drawn from elsewhere. Even if a rationing system ensuring 100% coverage could have been implemented, it would have severely affected the portion of production dedicated to individual choice. There simply wasn't enough to go round.

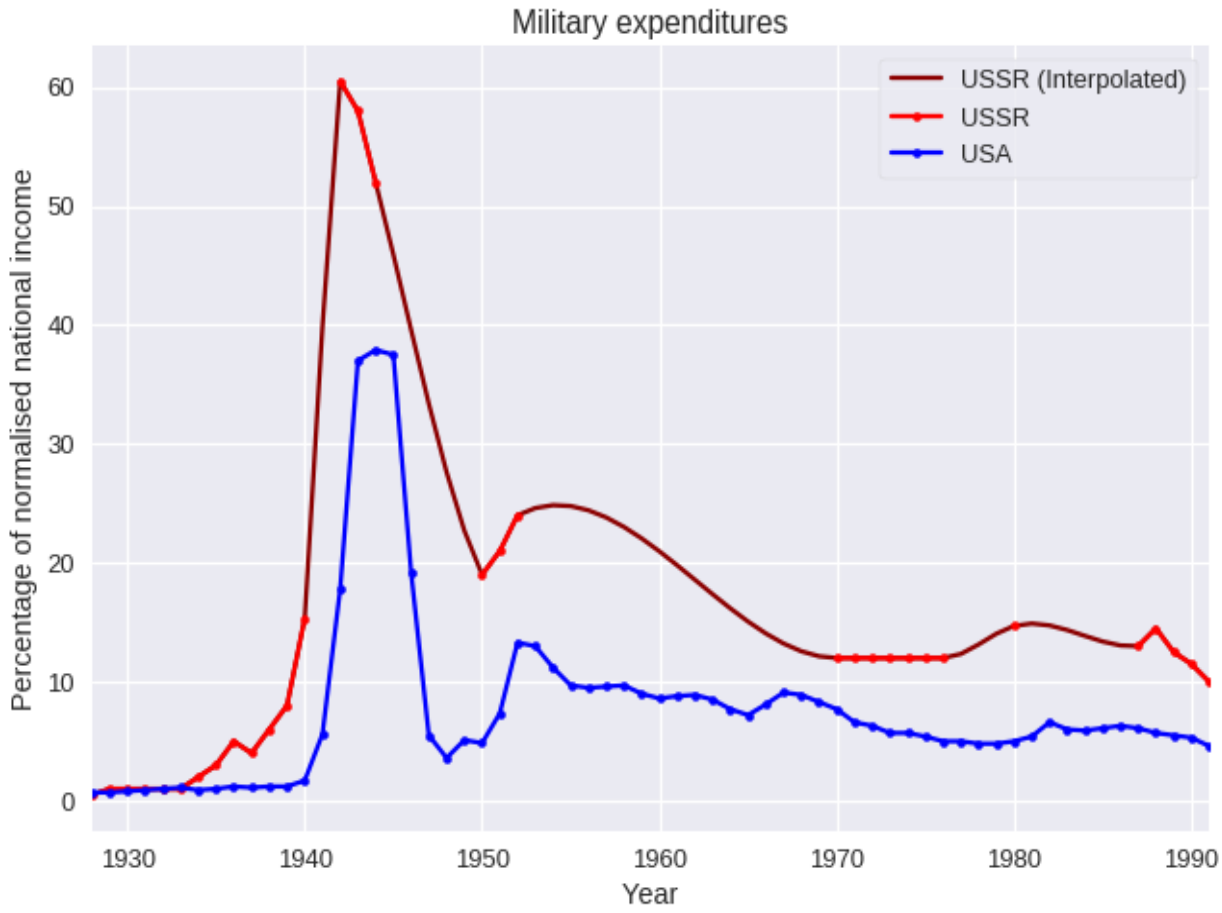
Notes

*WESW: Wage Earners and Salaried Workers. See the paper for the precise meaning of this.

APPENDICES

MILITARY EXPENDITURES

The Cold War might have been cold, but it was still a war, and it involved enormous investments from both sides. In this chapter, we quantify their extent. The main result is in the chart below.



Note that this chart is put together from different sources. I used % of National Income (GDP for USA, and NMP[30] converted to GDP for the Soviet Union) for both countries, but different procedures for computing Soviet GDP will yield different estimates.

Even today we don't have fully reliable numbers on Soviet military spending. During the Cold War there was a whole literature (Dudkin & Vasilevsky 1987, Noren 1995, Steinberg

30 This is Net Material Product, the Soviet equivalent of GDP. It considers only the production of material, tangible, products, and so it excludes the service sector. It is calculated by substracting the value of the inputs to the material-producing industries from the value of their outputs. To get GDP, this has to be greatly corrected, task which was undertaken by Maddison and others.

1990) devoted to working out these estimates. One example from Noren's paper shows some of these estimates and their evolution from the 1950s onwards.

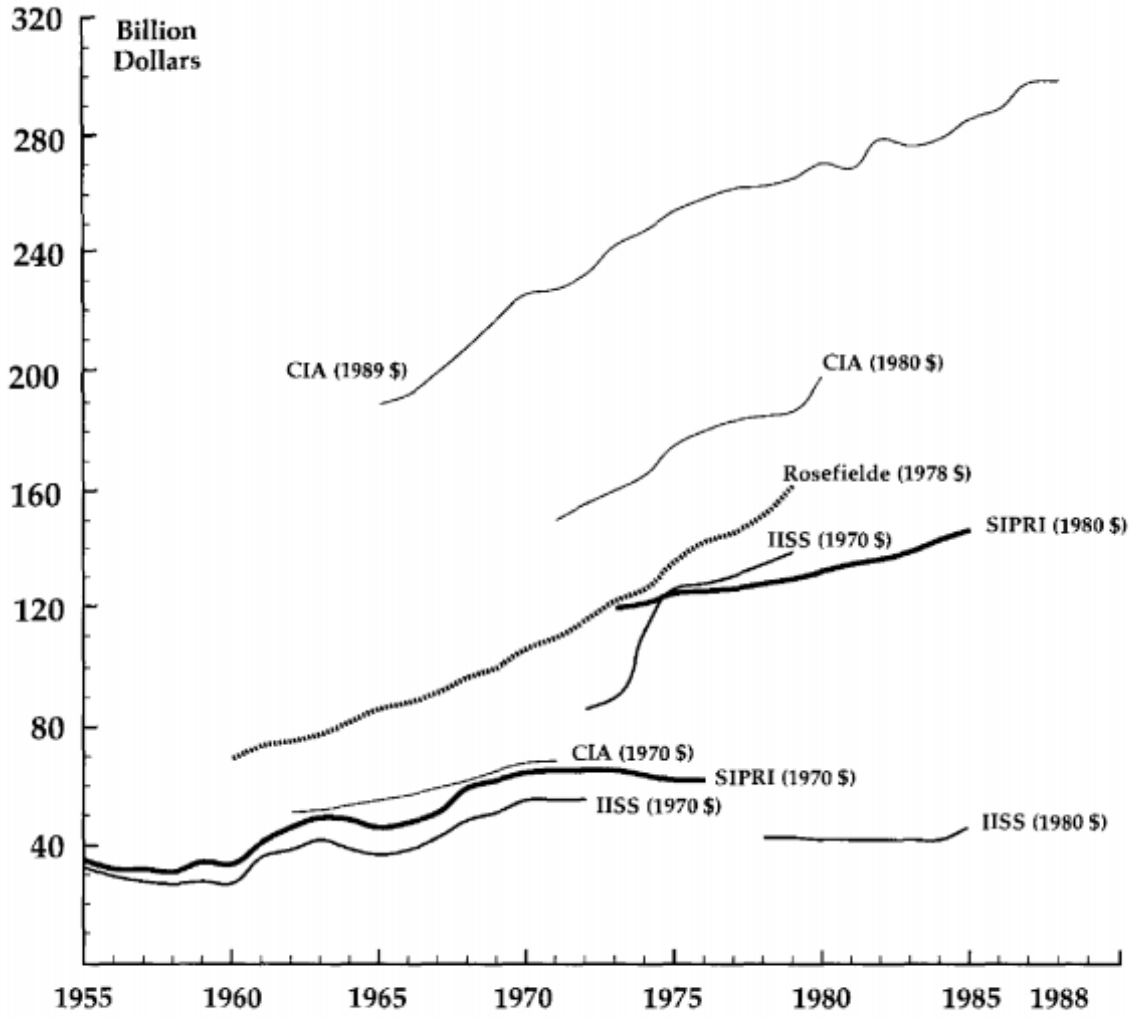
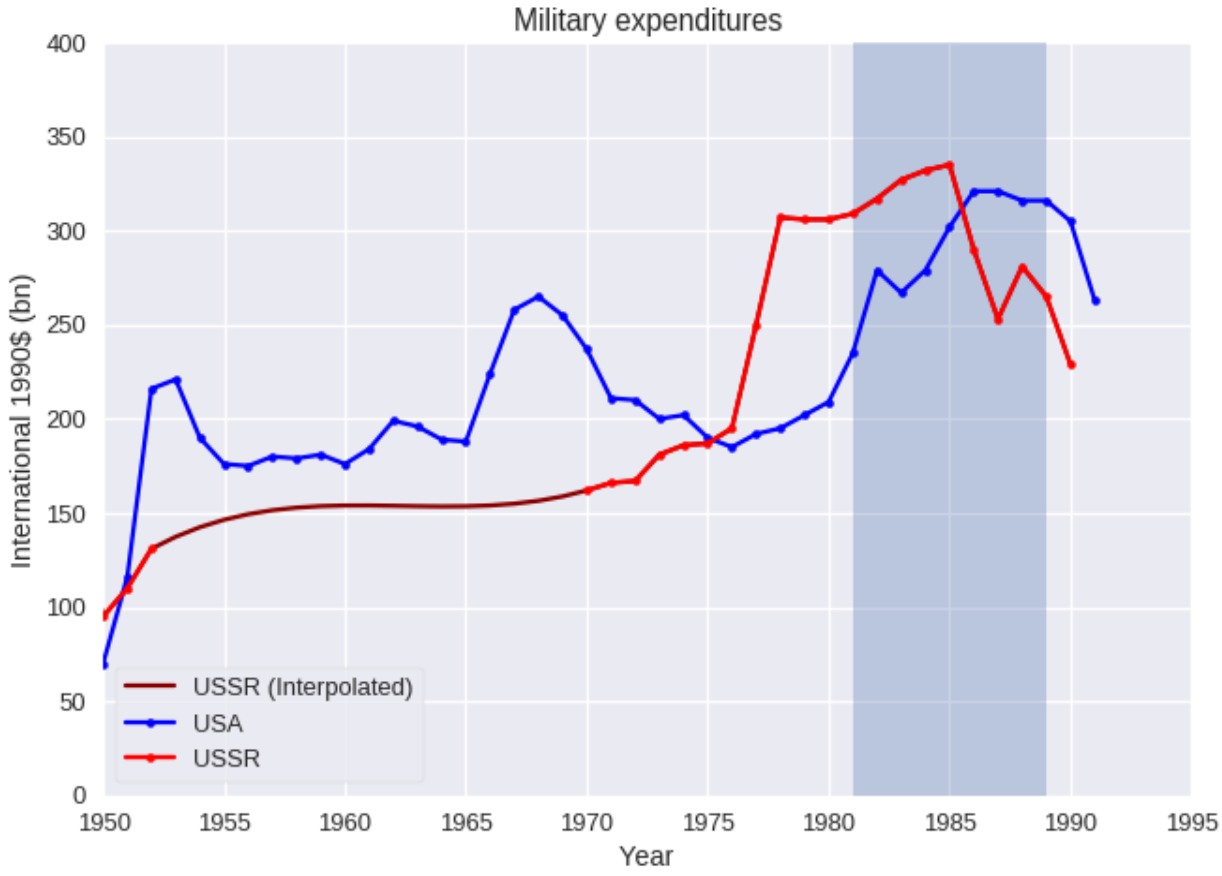


Fig. 4. Estimates of Soviet military spending in dollars.

The first conclusion that comes out of this data is that the CIA progressively increased their estimates. But other analysts did not –the International Institute for Strategic Studies offered a lower estimate, and this gap with the CIA reports increased as the CIA revised their estimates upward. For my own estimates, I have chosen the latest available data for each year. For the USSR, I put together data from Allen (2003), Harrison (1988, 2003), Cooper (1998), Nove (1992), and CIA and FAS[31] reports. For the US, the data comes from

31 Federation of American Scientists

the CRS Reports[32], and SIPRI[33].



Accounting now for the differences in population and absolute GDP, it is possible to get absolute magnitudes, shown in the plot below. It shows that, in absolute terms, the US still managed to spend more than the USSR even when the USSR had twice the national income devoted to the defence sector. It also shows that one commonly believed explanation Union (see Busch 1997 and Dobson 2005.[34]) for the collapse of the USSR, that Reagan (his terms highlighted in blue) induced a military buildup in the USSR that ultimately caused it to collapse (through straining its productive system) is not likely to be true. What happened is that he reacted to a prior increase in spending from the soviets.

Now perhaps it wasn't Reagan's policies in particular that caused a build-up; suppose that

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32 Congressional Research Service

33 Stockholm International Peace Research Institute

34 There is quite an interesting discussion about the topic here https://www.reddit.com/r/AskHistorians/comments/4cn9e8/how_actually_responsible_was_ronald_reagan_for/

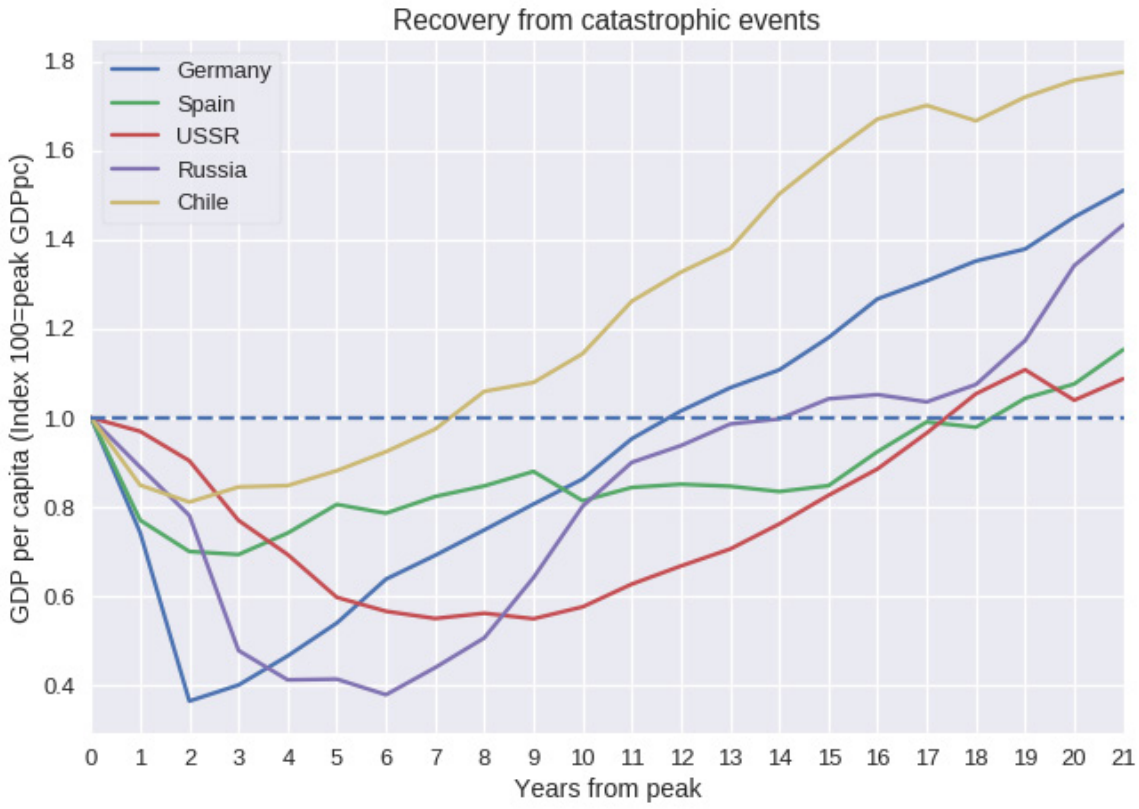
the cold war in general required a high level of Soviet military expenditure that their economy could not cope with. The trend in the chart does not seem to sustain such an explanation: had the USSR had US levels of GDP per capita, it would have managed in the same way the USA did—indeed, with many more people it may have been in a stronger position.

But, summing up, the accepted explanations for the fall of the USSR do not include late-period changes in military expenditures as a major causal factor (Stoner & McFaul, 2009). The discussion here supports the consensus view.

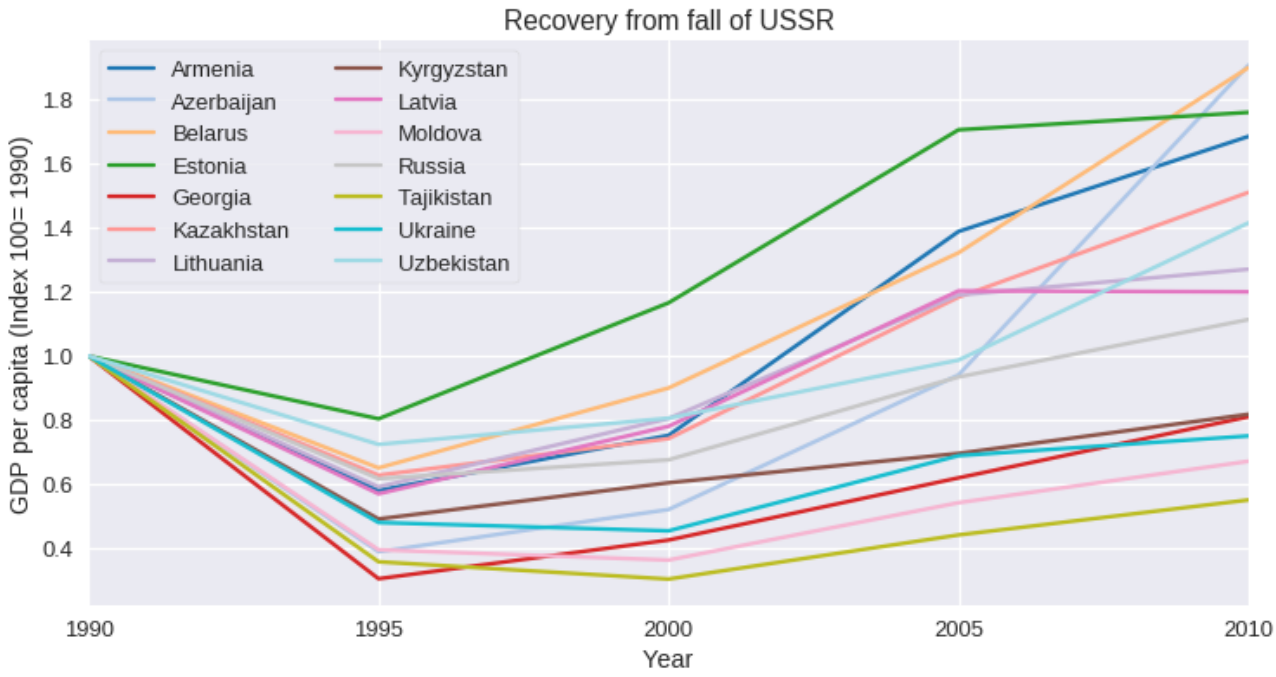
BRIEF REMARKS ON THE TRANSITION TO CAPITALISM

When the Soviet Union fell, the GDP of its member regions imploded. This much is clear from the charts in the first chapter. But how does this implosion compare with other catastrophic shocks to GDP. Have there been other events that required a country 18 years to recover?

Here we compared the post-Soviet economic transition with Chile (near the end of the Pinochet regime in 1982), Spain (just after the Civil War, 1935), Germany (just after the end of WWII, 1944), and Tsarist Russia (just after WWI, and immediately afterwards the 1917 revolution).



The point here is that transitions between systems can be brutal, and it can take time for the system to recover In the case of the Soviet Union, the short term pain can be greatly offset by the long term gain. Two extra points of growth per year may not look like much, but imagine an economy that grows at a rate of 0.5% can choose between a one-off 50% drop in GDP and then a growth rate of 2%, or continuing along its current path. In 35 years the country with the shock will have recovered to its pre-shock level; in 12 more (47 in total) it will have overtaken the one growing at 0.5%. In a century's time, the economy that went for the short term pain but faster long term growth will be twice as rich as the slower growing economy.



Some of the republics, like the Baltics and Belarus, recovered quite quickly. Russia itself, the largest member republic of the old USSR, ranks around the middle, while Tajikistan, Moldova, and Ukraine still remain far below the output per capita they had in the USSR. This does not necessarily mean that they are worse off now: they have more choice, a smaller military burden, and less forced investment into heavy industry. But, whether or not that is true, it's clear that different policies, different endowments of natural resources,

and different geopolitical issues can make a big difference in recovery rates from a very similar shock (Havrylyshyn (2007), IMF (2014))[35]

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35 http://www.imf.org/external/region/bal/rr/2014/25_years_of_transition.pdf