# Occupational change in Russia and the Soviet Union, 1897-2002

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This paper looks at occupational change in Russia over a period of slightly more than a century, which roughly coincides with Russia's industrialisation and the initial steps towards post-industrial development, triggered by the collapse of Russian industry amid the general melt-down of the Soviet system in the 1990s. It relies on two large data-sets recently made available online, and supplements them with additional data to create a more finely-tuned time-series. The data have been coded using two standard taxonomies, which assures comparability over time, and across space.

The purpose of the paper is twofold - to show what can be achieved through the combination of large data-sets and the application of standardised classification schemes, and to present a long-term perspective and broad overview of structural change in occupational and employment patterns right through Russia's twin experience of industrial and, for most of the century, non-market economic development.

From a perspective of global economic development, Russia is an exceptional outlier. As Robert Allen has recently pointed out, Russia was the sole country of its 'peer-group' in terms of GDP per capita around 1900 which had joined the ranks of the developed countries by the end of the century, the only other exception being Japan.[1] It was Soviet industrialisation which made the

1 Allen, Robert C., Farm to Factory. A reinterpretation of the Soviet Industrial Revolution. (Princeton

difference, Allen argued, and although he has subsequently been criticised for his iconoclastic, overly positive assessment of Soviet achievements[2], his original observation remains an important one. Russia's economic performance is usually compared to other European countries and its off-shoots, and from such a comparison Russia invariably emerges as backward, and as a 'late industrializer'. If compared to much of the rest of the world, however, with which it has in common at least as much as with Western Europe and North America, Russia is anything but 'late' or 'backward'.

The fact that it changed ranks, so to say, in the course of the twentieth century and ended up a middle-income country was the result of a deliberate development and industrialisation effort, started under the tsars in the late 19th century and continued by the Soviets in the twentieth century. Considerations of 'peer-group', meanwhile, were central to this development effort, considering that Russia as a state was wedged between two successful industrialisers to the West (Germany) and East (Japan), with whom it had to be able to compete militarily. Russia's industrialisation, therefore, was from the very outset on meant to 'catch up', and as such encouraged and pushed forward by the Russian state.[3]

Russian industrialisation came in two 'waves', separated from each other by a World War, a Revolution and a Civil War. The first wave was market-based and lasted from approximately the 1870s to 1914, the second one was non-capitalist in nature, starting in 1926 with a deliberate increase in industrial investment, and accelerated in 1929 with the introduction of economic planning and administrative allocation of resources.[4] Once recovered from war-related destruction, the Soviet experiment in 'planned' industrialisation carried on for a further forty-five years, with increasing systemic deficiencies, before it collapsed in the late 1980s, early 1990s.[5] Post-industrial development only really started with the collapse of the Soviet Union and the disintegration of the Soviet system after 1991.

Occupational change in this paper is measured in terms of the Primary-Secondary-Tertiary classification system developed by the Cambridge Group for the History of Population and Social Structure.[6] This is a system of occupational coding which combines a human-skills perspective with a sectoral perspective, allowing one to aggregate data both at the occupational level, at the branch level and, ultimately, at the sectoral level, distinguishing between primary, secondary and tertiary sector and measuring the labour inputs of these three sectors to GDP, ultimately offering a demand-side approach to industrialisation.

Data in this paper have been aggregated at the sectoral level (primary, secondary, tertiary), with some excursions into a lower level of breakdown by branch. The main reasons underlying this choice have to with the limitations of the data, which are meso-level census data, aggregated using different taxonomies, which generally cannot be harmonised and untangled into their composite

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and Oxford, 2003), pp. 8-9, 33-37.

2 Ellman, Michael, "Soviet Industrialization: A Remarkable Success", Slavic Review, 63(4) (2004), pp. 841-849.

3 Shanin, Teodor, Russia as a Developing Society (London, 1985), pp. 188-197.; Erlich, Alexander, The Soviet Industrialization Debate, 1924-1928 (Cambridge, Massachusetts, 1960)

4 Gregory, Paul R., Before Command: An Economic History of Russia from Emancipation to the First Five-Year Plan (Princeton, NJ, 1994), pp. 114-118.

5 Davies, R. W. et al. (eds), The Economic Transformation of the Soviet Union, 1913-1945 (Cambridge, 1994); Hanson, Philip, The rise and fall of the Soviet economy : an economic history of the USSR from 1945 (London; New York, 2003)

6 http://www.geog.cam.ac.uk/research/projects/occupations/britain19c/pst.html [as retrieved on 2 March 2016] The classification used in this paper is a modification of the original PST scheme for the purpose of international comparison: PST-I. Cf. Osamu Saito & Leigh Shaw-Taylor eds. *Occupational structure and industrialization in a comparative perspective* (forthcoming). The main difference with the original coding system is that mining and quarrying is part of the secondary, rather than the primary sector.

elements at levels of hierarchy lower than the sectoral one. Only primary records would allow for a greater level of break-down, but, with some minor exceptions, no such records have been preserved for Russian population censuses. Thus, we are by and large constrained to the sectoral level of analysis, but we would argue that this is in fact also the level most productive for a long-term birds eyes' perspective like the one adopted in this paper.

The main body of data used in this paper has been drawn from the Electronic Repository of Russian Historical Statistics, a joint Russian-Dutch on-line resource which has recently become available.[7] The aim of the Electronic Repository is to provide to the scholarly community a basic grid of indicators on the social and economic development of Russia and its regions, standardised and classified to allow for comparisons over time and across space. The data cover five broad fields - population, labour, land, capital and output. It contains data on occupations with a break-down by region for three of its five benchmark-years: 1897, 1959 and 2002. This grid was supplemented with national-level data data from intermediate censuses held in 1926, 1939, 1970, 1979 and 1989. Some of the results of these censuses have been published, but most data used for this chapter have been retrieved from archival records.[8] No comprehensive data on occupations and employment are available before 1897, which was the first-ever population census in the Russian Empire. The pre-census *revizii* or taxpayers' registers on which the Russian state relied, recorded legal position, and not occupation.[9]

In addition to the occupational data this paper draws on the data-sets compiled by the Global Collaboratory for the History of Labour Relations, a project of the International Institute of Social History in Amsterdam also presented in the framework of this session.[10] The perspective of labour relations offers a different one, focusing on the social relations under which work is performed, and relying on a much broader definition of work, including household and subsistence work. The Collaboratory data offer only two benchmarks for the period under study in this paper - 1897 and 2002 and to be able to draw up the same panel as for the occupational data we have added data for

7 G. Kessler & A. Markevich, *Electronic Repository for Russian Historical Statistics* (2014), http://ristat.org/, [as retrieved on 2 March 2016]. The data on occupations in the repository have been gathered, processed and coded by Timur Valetov and Gijs Kessler.

8 Vsesoiuznaia perepis' naseleniia 1926 g. (Moskva, 1928-1935); Zhiromskaia, V.B. (ed), Vsesoiuznaya perepis' naseleniia 1939 goda. Osnovnye itogi. Rossiia (Sankt Peterburg, 1999); Itogi vsesoiuznoi perepisi naseleniia 1959 goda: RSFSR (Moskva, 1963); Itogi vsesoiuznoi perepisi naseleniia 1970 g., 7 vols. (Moskva, 1972-1974); Itogi vsesoiuznoi perepisi naseleniia 1979 g. (Moskva, 1989-1990); Itogi vsesoiuznoi perepisi naseleniia 1989 g., 12 vols. (Moskva, 1992); Itogi vserossiiskoi perepisi naseleniia 2002 g., 14 vols. (Moskva, 2004-2005); Russian State Archive for the Economy (RGAE), f. 1562 (Central Statistical Administration), op. 336, d. 1062, ll.31-60.; d. 798; ll. 8-10, 17, 23, 31-32, 40-42, 49, 55, 63-4, 72-3, 75, 82, 88, 96-7, 105-7, 114, 120, 128-9; d. 1644, ll. 28-35; d. 4884, ll. 118-156; d. 4455, ll. 10-12; d. 6735, ll. 1-21; d. 6453, ll. 25-30; d. 1166, ll. 1-75; Kratkaia sotsial'no-demograficheskaia kharakteristika naseleniia RSFSR (po dannym vsesoiuznoi perepisi naseleniia 1989 goda) (Moskva, 1991), Chast' II. Istochniki sredstv sushchestvovaniia, obshchestvennye gruppy, pp. 2-3, 44-45. Soviet censuses, with the exception of the 1926 census, do not contain data on several 'sensitive' topics, like the size and location of army units and the labour camp population, but this does not affect the data on occupational structure at the national level. For a detailed discussion of the reliability of the Soviet censuses and possible biases the data my contain, cf. Gijs Kessler and Timur Valetov, "Occupational change and industrialisation in Russia and the Soviet Union, 1897-2002", in Osamu Saito & Leigh Shaw-Taylor eds. *Occupational structure and industrialization in a comparative perspective* (forthcoming)

9 The full range of pre-census population registers has been published in: Akademiia nauk SSSR. Nauchnyi sovet po istoricheskoi geografii i kartografii & Institut istorii SSSR, Perepisi naseleniia Rossii. Itogovye materialy podvornykh perepisei i revizii naseleniia Rossii (1646-1858), 12 volumes (Moskva, 1972).

10 Global Collaboratory on the History of Labour Relations in the period 1500-2000, https://collab.iisg.nl/web/LabourRelations [as retrieved on 2 March 2016]. The data for Russia in can be found here: https://github.com/rlzijdeman/labrel/tree/master/data/Russia [as retrieved on 2 March 2016].

the 1959 population census held in the Russian federal archives.[11]

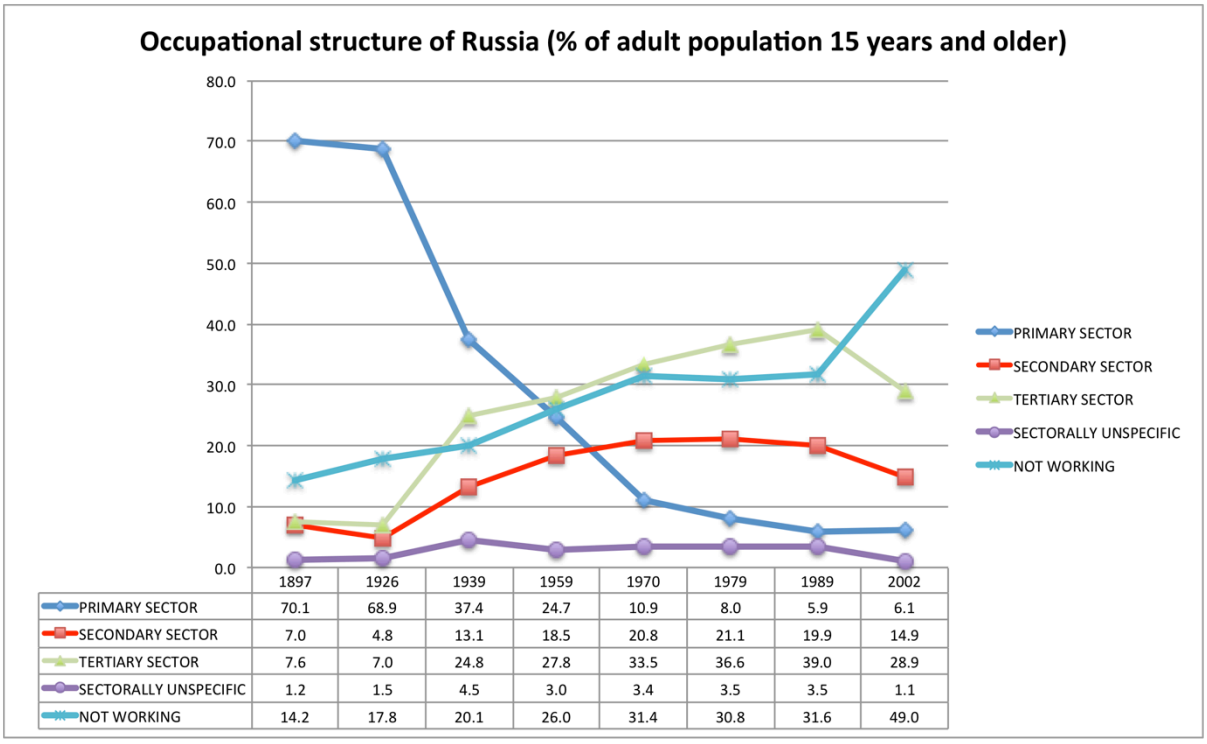
The data on occupational structure are presented in ten charts and tables, and six maps. For reasons of comparability over time they relate to the territory of the modern-day Russian Federation, i.e. leaving out the non-Russian republics of the Soviet Union. First, we look into sectoral change, both for the country as a whole and in terms of regional differentiation for agriculture, manufacturing and services. Secondly, we look at sectoral change from a gender perspective, examining changes in female labour participation rates and sectoral shifts in gendered choices of employment. The paper ends with a short section in which we examine the shifts in labour relations which accompanied the process of occupational change before proceeding to a conclusion, which summarises our findings and addresses the question whether, on the basis of the cumulative evidence, we can differentiate between the effects of market and non-market industrialisation.

## Sectoral change, 1897 – 2002

### *National shifts*

The charts 1 and 2 present the main evidence for this chapter. Chart 1 provides a breakdown of the adult population of 15 years and older between those who are not working, and those who are part of the labour force, with the latter subdivided between the three principal sectors of the economy and those whose occupation cannot be attributed to any of these three sectors. Chart 2 is built on the same data, but excludes those who are not part of the labour force.

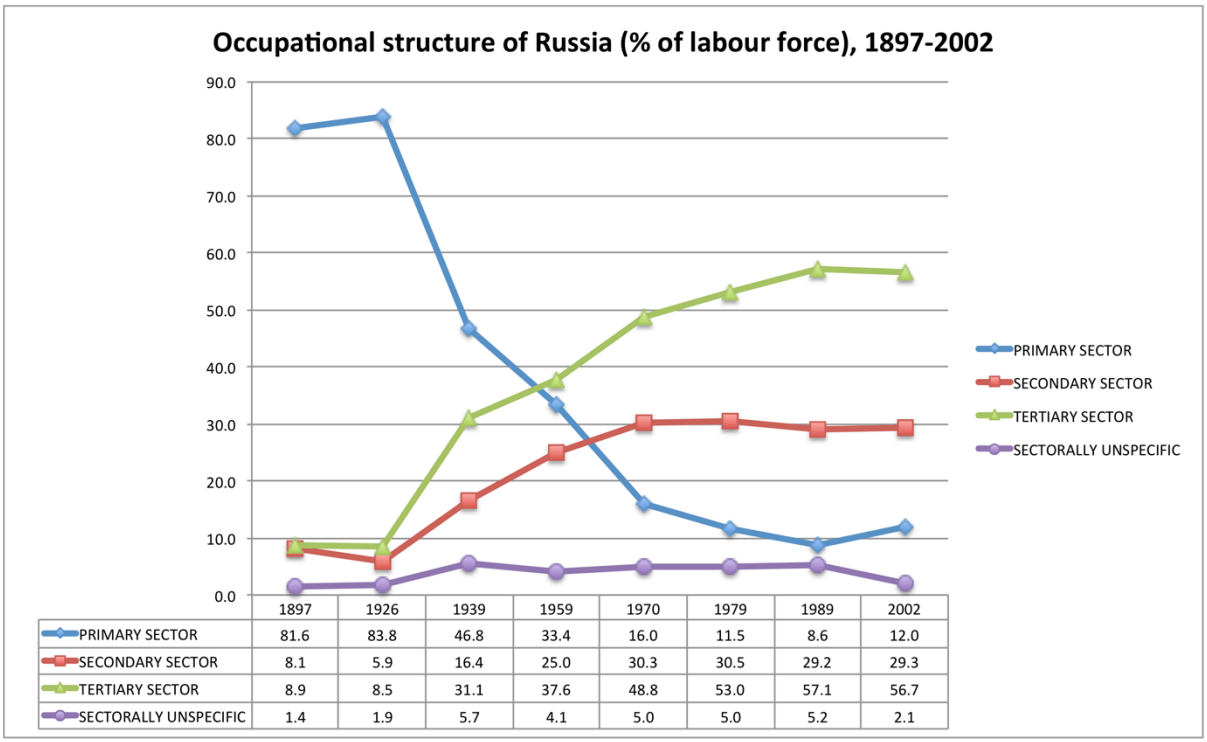
### Chart 1: Occupational structure of Russia (% of adult population 15 years and older), 1897 – 2002




| | 1897 | 1926 | 1939 | 1959 | 1970 | 1979 | 1989 | 2002 |
|---|---|---|---|---|---|---|---|---|
| PRIMARY SECTOR | 70.1 | 68.9 | 37.4 | 24.7 | 10.9 | 8.0 | 5.9 | 6.1 |
| SECONDARY SECTOR | 7.0 | 4.8 | 13.1 | 18.5 | 20.8 | 21.1 | 19.9 | 14.9 |
| TERTIARY SECTOR | 7.6 | 7.0 | 24.8 | 27.8 | 33.5 | 36.6 | 39.0 | 28.9 |
| SECTORALLY UNSPECIFIC | 1.2 | 1.5 | 4.5 | 3.0 | 3.4 | 3.5 | 3.5 | 1.1 |
| NOT WORKING | 14.2 | 17.8 | 20.1 | 26.0 | 31.4 | 30.8 | 31.6 | 49.0 |

11 Russian State Archive for the Economy (RGAE), f. 1562 (Central Statistical Administration), op. 336, d. 1644, ll. 28-35.

Chart 2: Occupational structure of Russia (% of the labour force 15 years and older)




| | 1897 | 1926 | 1939 | 1959 | 1970 | 1979 | 1989 | 2002 |
|---|---|---|---|---|---|---|---|---|
| PRIMARY SECTOR | 81.6 | 83.8 | 46.8 | 33.4 | 16.0 | 11.5 | 8.6 | 12.0 |
| SECONDARY SECTOR | 8.1 | 5.9 | 16.4 | 25.0 | 30.3 | 30.5 | 29.2 | 29.3 |
| TERTIARY SECTOR | 8.9 | 8.5 | 31.1 | 37.6 | 48.8 | 53.0 | 57.1 | 56.7 |
| SECTORALLY UNSPECIFIC | 1.4 | 1.9 | 5.7 | 4.1 | 5.0 | 5.0 | 5.2 | 2.1 |

A first comment to these two charts is that the main structural change can be clearly seen to have taken place between 1926 and 1939, that is during the years of Stalinist industrialisation, when the structure of Soviet society and economy was put on a fundamentally different course of development.

The industrialisation strategy chosen by the Bolshevik leadership was that of a forced transfer of resources from the agricultural to the industrial sector, initially through the imposition on the peasantry of unequal terms of trade, and when this failed to produce the desired result, through the forced collectivisation of agriculture, which forced peasants to part with a larger share of their produce at a lower price than they had been willing to under the semi-market conditions of the 1920s. Industrialisation was pushed forward by mass investment, with a square focus on heavy industry. Growth was largely extensive, fuelled by extra factor inputs of capital, through administrative allocation of resources, and of labour, through the sustained out-migration of labour from a countryside mercilessly exploited throughout the Stalin years.[12]

What is more surprising if we look at the charts 1 and 2, is that the extent of change in occupational structure between 1897 and 1926 is almost negligible. Indeed, the change that can be observed from the graphs is actually counter-intuitive, because what we see in terms of occupational change could be termed regression, i.e. a stagnation or even slight decline in the

12 Fitzpatrick, Sheila, "The Great Departure: Rural-Urban Migration in the Soviet Union, 1929-33", in Rosenberg, William G. and Siegelbaum, Lewis H. (eds), Social Dimensions of Soviet Industrialization (Bloomington, 1993), pp. 15-40.; Siegelbaum, Lewis H. and Moch, Leslie Page, Broad Is My Native Land. Repertoires and regimes of migration in Russia's twentieth century (Ithaca and London, 2014), p. Chapter 3.

importance of the secondary and tertiary sectors in favour of the primary sector, despite the industrial take-off and related structural change between 1870 and 1914.[13] The explanation should be seen in the deleterious effect of the revolution and Civil War of the years 1917 to 1922, which literally threw back the country on its peasant roots, causing an actual de-urbanisation.[14]

Therefore, in the absence of any comprehensive data on occupational structure on the eve of the revolutionary turmoil, we have no way of gauging the structural change brought forth by the thirty-odd years of Russia's capitalist industrial take-off. As for the changes brought by Russia's return to capitalism between 1989 and 2002, the data provide evidence of some change after the fall of the soviet system, although not as structural as the one which occurred with the onset of socialism.

Switching to the principal subdivision between those in and outside of the labour force in chart 1, we can see that the share of the non-working increases over time, a process which is above all attributable to the introduction of general, obligatory school education and old age retirement schemes. This trend flattens off after 1970, when a basic age-determined subdivision of the population had been reached between those too young and too old to work (under 15 and over the retirement age of 55 for women and 60 for men), and the economically active (15-54/59). Labour force participation among the population of working-age was universal by that time - employment was both a right and duty of both Soviet men and women. For men universal employment had been reached already by the late 1930s. For women it came later. They had been encouraged to enter the labour force from the 1920s on, as part of the emancipatory rhetoric of the Bolshevik revolution, but only by the 1960s can it be argued that women started to seek out-of-the-house employment as the default behaviour.[15]

During the post-soviet period the share of the non-working shows a sudden and rather drastic increase. Several things would appear to be at hand here. To some extent there might be a data-issue, related to different counting methods in Soviet and post-Soviet censuses, which makes the increase particularly sharp. But other processes played out as well over these years. To start with, this is the plain demographic process associated with the ageing of the population, which progressively reduces the labour force, a process which had started to make itself felt in the 1980s already, but gained in weight over the following decade.[16] Secondly, during the economic downturn of the 1990s many people in lowly-paid jobs quit employment altogether and relied on the income of other household members, perhaps substituting household work and child care for out-door employment. In Soviet years it had been obligatory for all men and women to work, but with the ideological changes of the 1990s such other options became a possibility. The data suggest that these were predominantly people in service sector employment. This is not implausible, because the lowliest paid jobs in these long and arduous years of transition were state jobs. And, finally, some people who were actually working in small and medium informal businesses might have felt it prudent to describe themselves as not gainfully employed in the census out of fear of tax issues.

13 Gregory, Before Command, pp. 24-28.

14 Koenker, Diane P., "Urbanization and Deurbanization in the Russian Revolution and Civil War", in Koenker, Diane et al. (eds), Party, state, and society in the Russian Civil War : explorations in social history, Indiana-Michigan series in Russian and East European studies (Bloomington, 1989), pp. 81-104.

15 Cf. Kessler, Gijs, "Work and the household in the inter-war Soviet Union", Continuity and Change, 20(3) (2005), pp. 409-442.; Markevich, Andrei, "Soviet urban households and the road to universal employment, from the end of the 1930s to the end of the 1960s", Continuity and Change, 20(3) (2005), pp. 443-473.; Yanowitch, Murray, Social and economic inequality in the Soviet Union : six studies (New York, 1977), pp. 166-167.

16 Hanson, The rise and fall of the Soviet economy : an economic history of the USSR from 1945, pp. 272-273.

If we now turn to the changes in terms of the share of the different sectors in the labour force (chart 2), predictably, the primary sector declined from 81.6% in 1897 to 16% in 1970, and bottomed out at below the 10% benchmark by 1989, slightly increasing again to 12% by 2002. Again, the main structural shift in terms of agricultural employment occurred between 1926 and 1939 and was linked to the tumultuous collectivisation of agriculture of the Stalin years. But during the later soviet decades as well the relative attraction of the countryside remained low and industrialisation made further inroads on agricultural employment. Soviet industrialisation relied to a very large extent on the continuous growth of factor inputs, both capital and labour, and as far as the latter is concerned, this growth of inputs was primarily achieved through a continuous transfer from the agricultural sector, until labour reserves had been exhausted there as well and migration rates decelerated from the 1970s onwards.[17]

Its precipitous decline notwithstanding, the primary sector nevertheless remained the largest sector in terms of employment until 1959, when it had dropped to second position, after services, and only fell behind manufacturing in the course of the 1960s. This relatively large share of agricultural employment is a significant finding in the light of two circumstances. To start with, the agricultural sector had by the 1960s already started to exhibit some of the structural difficulties which progressively turned it into a major source of concern for the Soviet leadership. The problem was the following. Collectivisation had not only destroyed a viable and thriving system of agricultural production, it had also starved it of resources throughout the further years of industrialisation. By the time of Stalin's death this had become impossible to sustain, both because of the abysmal living standards in the village which resulted from it, and because the sector was less able to produce the food necessary to feed an urban population which was increasing at a rapid pace due to the sustained out-migration from the countryside.

One of the first things which Stalin's successors did, therefore, was to divert more resources and investment to the agricultural sector so as to increase food production, a policy which would be continued throughout the further Soviet period, without, however, producing substantial results. Although agricultural production increased, investment into the sector increased even faster, and each gain in total output was therefore achieved at a rising marginal cost. What is more, despite increased investment the Soviet agricultural sector was not even able to produce enough food to feed its population, and from the 1960s on the country had to regularly resort to grain and fodder imports to make up the difference, a practice which ate away scarce hard-currency reserves, and was therefore a drain on the economic performance in general, and a major headache for the Soviet leadership.[18]

Against this background the large share of employment in the primary sector of chart 3 is a tell-tale sign of the inefficiency and structural problems of the agricultural sector, which was unable to deliver what was expected of it, despite locking in a large share of the labour force. There is a further twist to this story, though. The Soviet agricultural sector combined production on large-scale collective farms with the small-scale efforts of the rural population on the tiny private plots they were allowed to have under the provisions of the collective farm charter. Until 1958 part of the produce from these private plots had to be delivered to the state, but most of it was consumed, or could be sold. Given these incentives, efforts of the rural population on these plots were intense, and the plots accounted for a disproportionate share of total farm production.[19] More importantly, it fed a sizeable share of the population, who therefore laid no claim on the food produced at ever

17 Hanson, The rise and fall of the Soviet economy : an economic history of the USSR from 1945, p. 139.

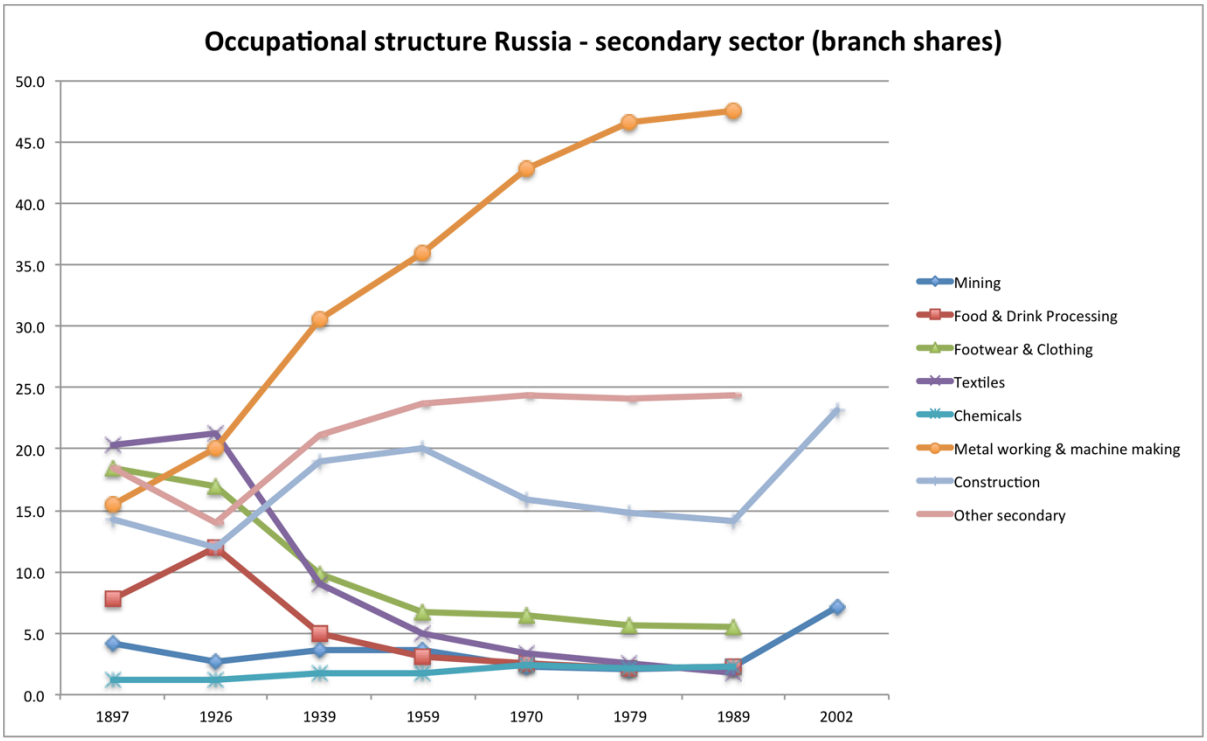
18 Hanson, The rise and fall of the Soviet economy : an economic history of the USSR from 1945, pp. 51-54, 112-114, 149-154, 162-163, 192.

19 Gregory, Paul R. and Stuart, Robert C., Soviet Economic Structure and Performance (New York, 1990), pp. 294-299.

greater cost by the same people on the state and collective farms. The large share of the primary sector among the labour force in chart 3 should therefore also be seen as a rough indicator of the part of the labour force which was effectively self-sufficient and in terms of its needs.

Turning to the secondary sector, the share in total employment dropped (cf. chart 2) from 8.1% in 1897 to a low of 5.9% of the workforce in 1926 and increased rapidly afterwards, almost tripling over the next decade to 16.4% in 1939, and levelling off by 1970 around 30% of the workforce, not even being noticeably affected by the transition of the 1990s, or indeed having picked up again to pre-transition levels by 2002, after three years of renewed economic growth in Russia. A subdivision of employment in manufacturing by branch is shown in chart 3:

## Chart 3: Occupational structure Russia – secondary sector (branch shares)




Again, the main structural change occurs between 1926 and 1939 – the trends which set in during this first decade of Soviet industrialisation continue during the remainder of the Soviet period. Crucially, they were a steep increase in the shares of metal working and machine making (heavy industry, in short) as well as construction, and a decline of all the light industries, i.e. food & drink processing, footwear & clothing, and textiles. After 1959 the share of construction started to decline, and the shares of the light industries stabilised. Construction and mining show a spike in the first post-soviet decade, which is entirely explainable for mining, as the Russian economy came to rely increasingly on the extraction of natural resources, but is more puzzling for construction, which especially boomed during the period of economic high tide in the early 2000s, but might have in fact started to grow earlier, as is suggested by the partial data for 2002 in chart 3.

The main outstanding feature of chart 3, however, is the steep increase and dominance of employment in metal working and machine making, heavy industry in short, which unfortunately due to the classifications adhered to in the censuses, we cannot separate into metalworking (i.e. production of raw materials and semi-finished products) and machine making (i.e. finished

products). Nonetheless, the steep increase of the combined category, which starts already before 1926, of course accurately reflects the Soviet leadership's extreme focus on the development of heavy industry, at the expense of practically other sectors of the economy.

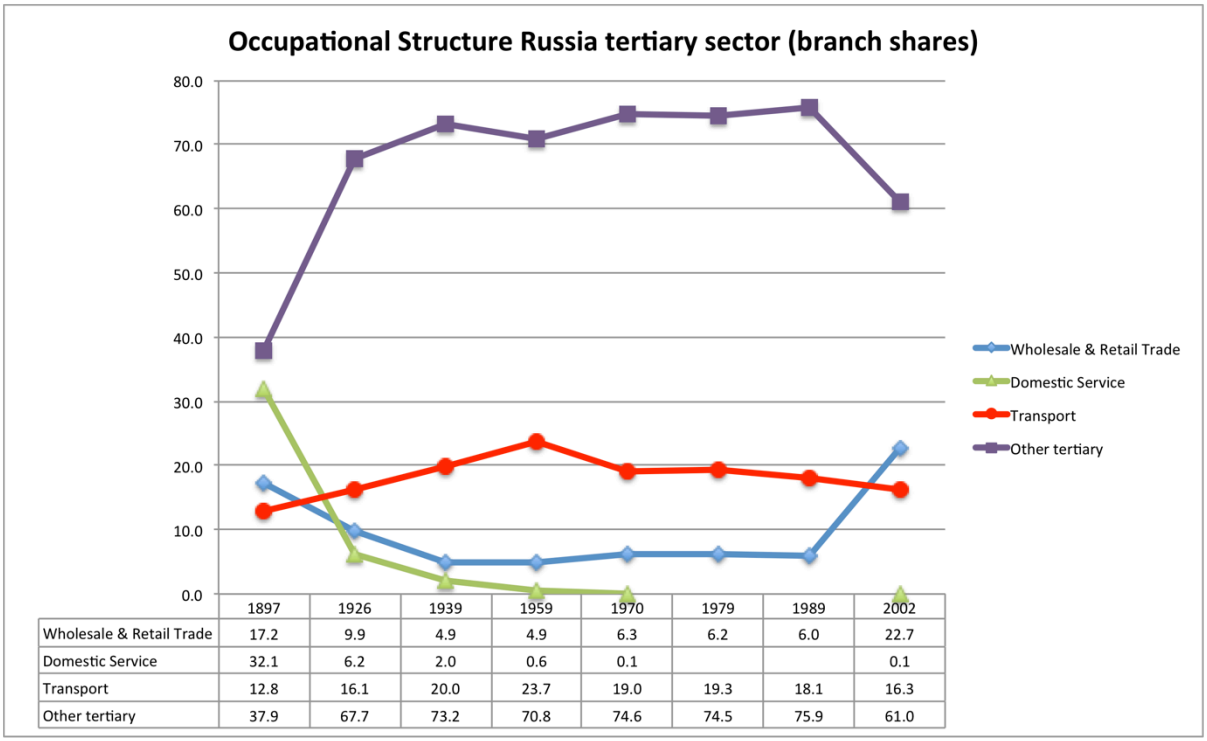
In fact, the share of the labour force in metalworking and machine-making is so disproportional to the other industries that Chart 3 probably cannot be understood without taking into account foreign trade, because otherwise there is no explaining how the Soviet Union actually managed to cloth, feed and water its population. We cannot go into detail here, but we have already referred to grain purchases abroad, mainly made on the world market, but in addition there was trade within the Soviet bloc, the Council for Mutual Economic Assistance (CMEA), where consumer items played a larger role, partly because there was a de facto division of labour between the countries, in which the Soviet Union focused on heavy industry, including armaments, and the other countries would be engaged more in light industry, which was strategically less important under Soviet priorities. So it seems likely that the extremely low shares of employment of the light industries in Chart 3 were, at least in part, compensated by Polish, Hungarian, Czech, Yugoslav and Bulgarian workers producing shoes, socks, shirts and seasoning for the Soviet 'market'.[20] Be this as it may, the structure of the industrial workforce in the Soviet Union testifies to a severe imbalance and over-specialisation on certain industries and certain skills.

To return to the larger picture of the balance between the sectors, the biggest surprise of Chart 2 is the relative position of the tertiary and the secondary sectors. Already as early as 1897, i.e. against the general background of an overwhelmingly agricultural economy, employment in the tertiary sector surpassed that in manufacturing, and this ranking persisted throughout the twentieth century. What is more, Soviet industrialisation of the 1930s in fact widened the gap, which is counter-intuitive considering the emphasis on industrial build-up of those years. A second widening of the gap followed after 1959, which can be considered more in line with expectation, reflecting the general maturing of the economy after the initial industrial build-up, as well as the expansion of education and other social services, like health care.

How can we explain this early lead of the tertiary sector, and its continued prominence in an economic system with such an outspoken ideological focus on industrial development? In search of an explanation Chart 4 shows us the breakdown of tertiary sector employment into four subcategories - trade, domestic service, transport and other services.

20 On Soviet foreign trade patterns, cf. Hanson, The rise and fall of the Soviet economy : an economic history of the USSR from 1945, pp. 154-162.

Chart 4: Occupational Structure Russia tertiary sector (branch shares)

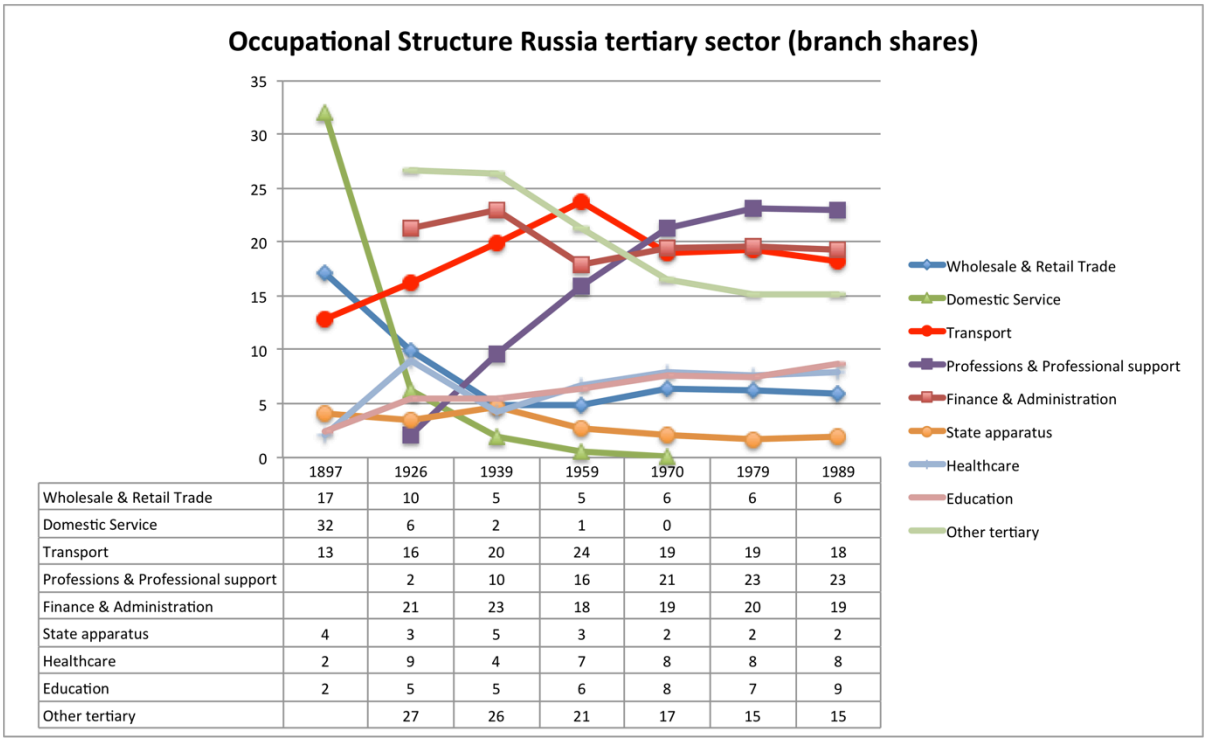



| | 1897 | 1926 | 1939 | 1959 | 1970 | 1979 | 1989 | 2002 |
|---|---|---|---|---|---|---|---|---|
| Wholesale & Retail Trade | 17.2 | 9.9 | 4.9 | 4.9 | 6.3 | 6.2 | 6.0 | 22.7 |
| Domestic Service | 32.1 | 6.2 | 2.0 | 0.6 | 0.1 | | | 0.1 |
| Transport | 12.8 | 16.1 | 20.0 | 23.7 | 19.0 | 19.3 | 18.1 | 16.3 |
| Other tertiary | 37.9 | 67.7 | 73.2 | 70.8 | 74.6 | 74.5 | 75.9 | 61.0 |

As we can see, the shares of domestic service and trade declined over the course of the Soviet century, with trade predictably picking up in the first post-soviet decade of capitalism, and transport accounted for a more or less stable percentage.[21] The overwhelming increase of service sector employment therefore falls on the category "other tertiary" occupations. Let us see if we can meaningfully unpack this amalgamate category (cf. Chart 5).

21 Before the revolution the wealthy classes employed domestic labour on a large scale, with most domestic servants being of peasant origin, even when working in the towns. Cf. Engel, Barbara Alpern, Between the fields and the city: women, work and family in Russia 1861-1914 (Cambridge and New York, 1994)

Chart 5: Occupational Structure Russia tertiary sector (branch shares)




| | 1897 | 1926 | 1939 | 1959 | 1970 | 1979 | 1989 |
|---|---|---|---|---|---|---|---|
| Wholesale & Retail Trade | 17 | 10 | 5 | 5 | 6 | 6 | 6 |
| Domestic Service | 32 | 6 | 2 | 1 | 0 | | |
| Transport | 13 | 16 | 20 | 24 | 19 | 19 | 18 |
| Professions & Professional support | | 2 | 10 | 16 | 21 | 23 | 23 |
| Finance & Administration | | 21 | 23 | 18 | 19 | 20 | 19 |
| State apparatus | 4 | 3 | 5 | 3 | 2 | 2 | 2 |
| Healthcare | 2 | 9 | 4 | 7 | 8 | 8 | 8 |
| Education | 2 | 5 | 5 | 6 | 8 | 7 | 9 |
| Other tertiary | | 27 | 26 | 21 | 17 | 15 | 15 |

What stands out from this somewhat messy graph is that there was one clear riser - the category Professions & Professional Support, and one category which was just as important as transport in terms of its share of employment - the category “Finance and Administration”. What we will argue here is that in the soviet state-run economy the large share of these branches should not be understood so much as the rise of a service sector, but rather as a function of the expansion of the state apparatus. The ‘professions’ in the group of that name are doctors, teachers, engineers and scientists, all of whom would be state-employed in the Soviet Union, as well as the auxiliary workers in the ‘professional support’-group who assisted these qualified professionals. Financial services and professions as well could by definition exist only within the state-sector of the economy in the Soviet Union and it is in this category that we find the planners, state bankers and accountants of the command-administrative economy.

A few words are in order here to clarify the occupations included in these categories, because we had to join and divide certain groups in PST to be able to make this graph. The category Professions and Professional Support in chart 6 consists of the PST groups 5_35 and 5_36 without those working in health and education, which we have plotted separately, plus those employed in entertainment (PST groups 5_15 and 5_16). From this it follows that the people included in the category “professions & professional support” in chart 6 were working in research and development, the legal profession, as well as in architecture and engineering, plus supportive staff. Particularly engineering accounted of course for a large share of the workforce, something which mirrors the large share of machine making among secondary sector employment. Indeed, health care and education, as well as actual government service (“State apparatus”) all accounted for relatively modest shares in total service sector employment. Therefore, it was neither bureaucracy which accounted for the dominant position of the service sector in Soviet occupational structure, nor a service sector catering to consumers, but the educated professionals required to keep Soviet

industry running and the planned economy functioning.[22]

As far as the early lead of the service sector in 1897 is concerned, chart 6 unfortunately can only tells us part of the story, because the data do not allow us to isolate the categories 'Professions & Professional Support', 'Finance and Administration' and 'Unspecified', together accounting for 30% of total employment in the sector, that is, excluding health care and education, which we were able to calculate separately like for the other years. For about a third of service sector employment we are therefore in the dark what the exact occupational structure was, apart from the fact that we can exclude certain possibilities, which we were able to count separately, i.e. government service, health care and education, trade and domestic service. This makes it very difficult to try and find an explanation for the early lead of the service sector in late nineteenth century Russia. Given the overwhelmingly agrarian profile of the Russian economy at this stage, and the fact that industrialisation and urbanisation were still very much in their very first phases, we can however make the conjecture that it is extremely unlikely that the large share of the tertiary sector among the labour force is a function of a process of commercialisation, modernisation and structural change.

This largely leaves us with only one possible explanation: the large footprint of the Russian state in terms of employment. Again, it is not so much government service itself, which accounted for a relatively modest 4% of service sector employment, but the professionals and supporting staff hired by the state to carry out its basic functions, including military ones. For an empire the size of Russia this should of course to a certain extent not be too much of a surprising finding, particularly if we realise that, in comparison for example to Great Britain or France, this was a land-based empire, which meant that the entire military, as well as the colonial administration in the outer-lying parts of the empire would show up in national employment figures, unlike for example the British overseas administration and colonial troops. Additional evidence for the large role of the state in the service sector at this time is provided by Andrei Markevich in a recent reconstruction of Gross Regional Products for the 1897 Russian Empire, which shows very high per capita income levels in some of the border provinces, almost entirely due to state spending in these regions, above all on the military.[23]

## *Regional shifts*

Having analysed the main trends in occupational change over time at the national level, this section looks at these changes from a regional perspective. It relies on regional-level data on occupational structure for two benchmark years - 1897 and 1959, available from the Electronic Repository of Russian Historical Statistics.[24] These two benchmark years provide a snapshot of regional differentiation in occupational structure during, respectively, Russia's first and second wave of industrialisation.[25] In the Figures 1-6 the geographical distribution of sectoral employment is

22 This finding runs counter to what has hitherto been assumed in the literature. Davies e.a. argued for example in their 1994 standard reference work on Soviet industrialisation that a comparison of the 1926 and 1939 censuses shows a smaller expansion of administrative staff than one would have expected, and conclude that "The concentration of the labour force on the capital goods industries was partly secured by restricting the expansion of the administrative and other services." Cf. Davies et al., Economic Transformation, pp. 90-91.

23 Markevich, Andrei, Economic Development of the Late Russian Empire in a Regional Perspective (December 25, 2014). Available at SSRN: http://ssrn.com/abstract=2555273 [Retrieved on 18 February 2016]

24 G. Kessler & A. Markevich, *Electronic Repository for Russian Historical Statistics* (2014), http://ristat.org, [as retrieved on 19 February 2016]. The data on occupations in the repository have been gathered, processed and coded by Timur Valetov and Gijs Kessler.

25 Regional-level data are known to be available for the other censuses used in this chapter, but would require a substantial further data-mining effort to add.

presented for the three main sectors of PST – primary, secondary and tertiary. The values plotted in these maps are weighted figures, calculated as the share of a particular region in the national workforce per sector, divided by the share of the particular region in the national labour force. If a region is represented among the workforce in this sector entirely proportional to its share in the total population this coefficient equals 1. Consequently, a value lower than 1 means employment in the sector concerned is lower than one would expect, and a value higher than 1 means that employment in this sector has an above average significance in the region concerned.

The figures 1 and 2 focus on the single most important group in both 1897 and 1959 – the primary sector. It is the decline of the primary sector which fuels the growth in all other sectors, and therefore we wanted to find out whether this was a universal process, or that some regions experienced a more rapid outflow from agriculture than others. The maps show the entire territory of the Russian state in these two years, but data are available only for those regions falling within the boundaries of the modern-day Russian Federation – these are the coloured regions. Regions in white, to the contrary, fall outside of the boundaries of the modern Russian state.[26]

Figure 1: Primary sector employment by region – Russia, 1897

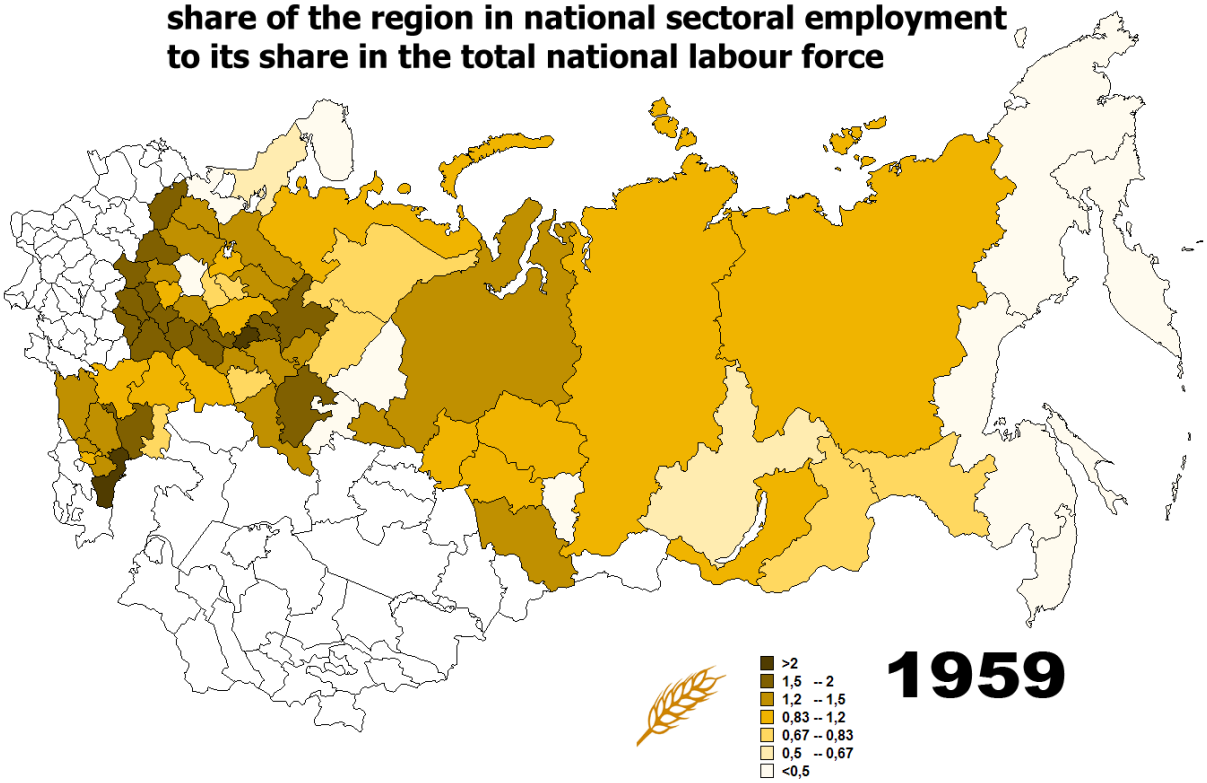

Source: Calculated by authors from G. Kessler & A. Markevich, Electronic Repository for Russian Historical Statistics (2014), http://ristat.org/; *Pervaia vseobschaia perepis' naseleniia Rossiiskoi imperii 28 ianvaria 1897 goda*, 86 vols. (St. Petersburg, 1905); *Obshchii svod po imperii rezul'tatov razrabotki dannykh pervoi vseobshchei perepisi naseleniia, proizvedennoi 28 ianvaria 1897 goda*, 2 vols. (St. Petersburg, 1905).

The 1897 map for primary sector employment conforms to what one would expect, considering the

26 To ensure the comparability of data over time we have excluded two regions which are part of the current Russian Federation, but were not part of the Russian Empire in 1897 – Tuva and the Kaliningrad province.

fact that the overwhelming part of the population was engaged in agriculture (cf. charts 1 and 2). Almost all regions show a value of around 1, meaning that they contribute to overall employment in this sector proportional to their share in the total labour force. The only outliers are the Russian Far East and the Vladimir province east of Moscow, which show employment in agriculture lower than one would expect, as well as the Moscow and St. Petersburg provinces, where primary sector employment is less than half the average. For the Moscow, St. Petersburg and Vladimir regions, which were home to significant industries and trades, this result is not difficult to explain - for the Russian Far East it is more surprising, given the fact that these were among the target areas for agricultural resettlement from the Russian heartland, but results might be less robust here due to very low overall population size.

Figure 2: Primary sector employment by region – Russia, 1959




Source: Calculated by authors from G. Kessler & A. Markevich, Electronic Repository for Russian Historical Statistics (2014), http://ristat.org/

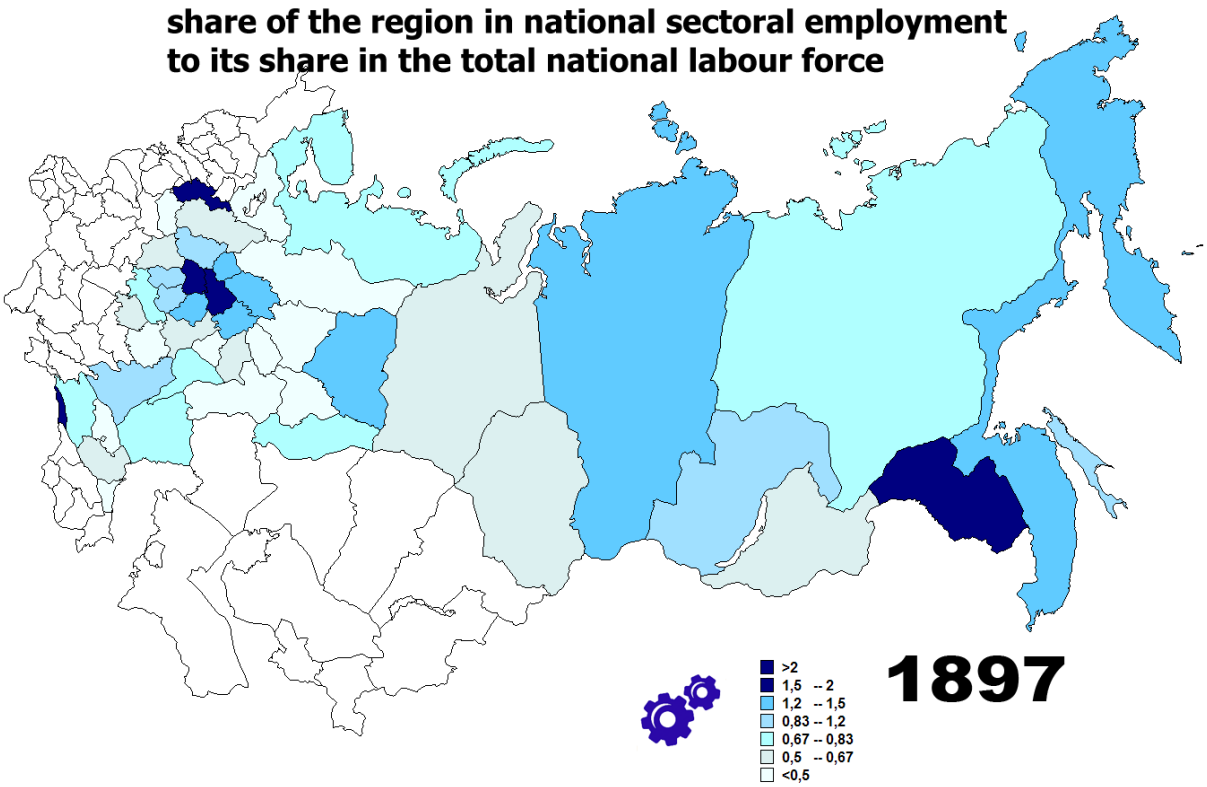
By 1959 we have a completely different picture. Primary sector employment is clearly concentrated in certain areas, almost all located in European Russia – the fertile steppe areas of the North Caucasus in the south, the traditional agricultural heartland of Russia in the Black-Earth zones south of Moscow and along the Volga river, the less fertile region between Moscow and St. Petersburg, where animal husbandry was practised, and regions adjacent to the Urals industrial area (the Gorki oblast and Bashkir ASSR to the west, the Kurganskaya and Tyumenskaya oblast to the east). This distribution appears to reflect two things - the prospects for agriculture as determined by geography and climate, and the proximity of significant urban and industrial areas, and could be interpreted, therefore, as the result of a process of regional specialisation in agriculture.

In all other regions primary sector employment is either proportional to its population or lower.

The fact that still a substantial number of regions in areas of the country not primarily suitable for agriculture (east of the Urals ) exhibit primary sector employment proportional to their population suggest that employment in agriculture still is the default economic behaviour for large parts of the country. This should be seen in the light of the fact that work on the collective farm also was the access-route to a private plot, and therewith a subsistence strategy, if you want. This helps explain the still surprisingly high overall share of primary sector employment in 1959 which we saw in Charts 1 and 2 above.

In the figures 3 and 4 we turn to the importance of employment in the secondary sector for each of Russia's regions in 1897 and 1959.

Figure 3: Secondary sector employment by region – Russia, 1897



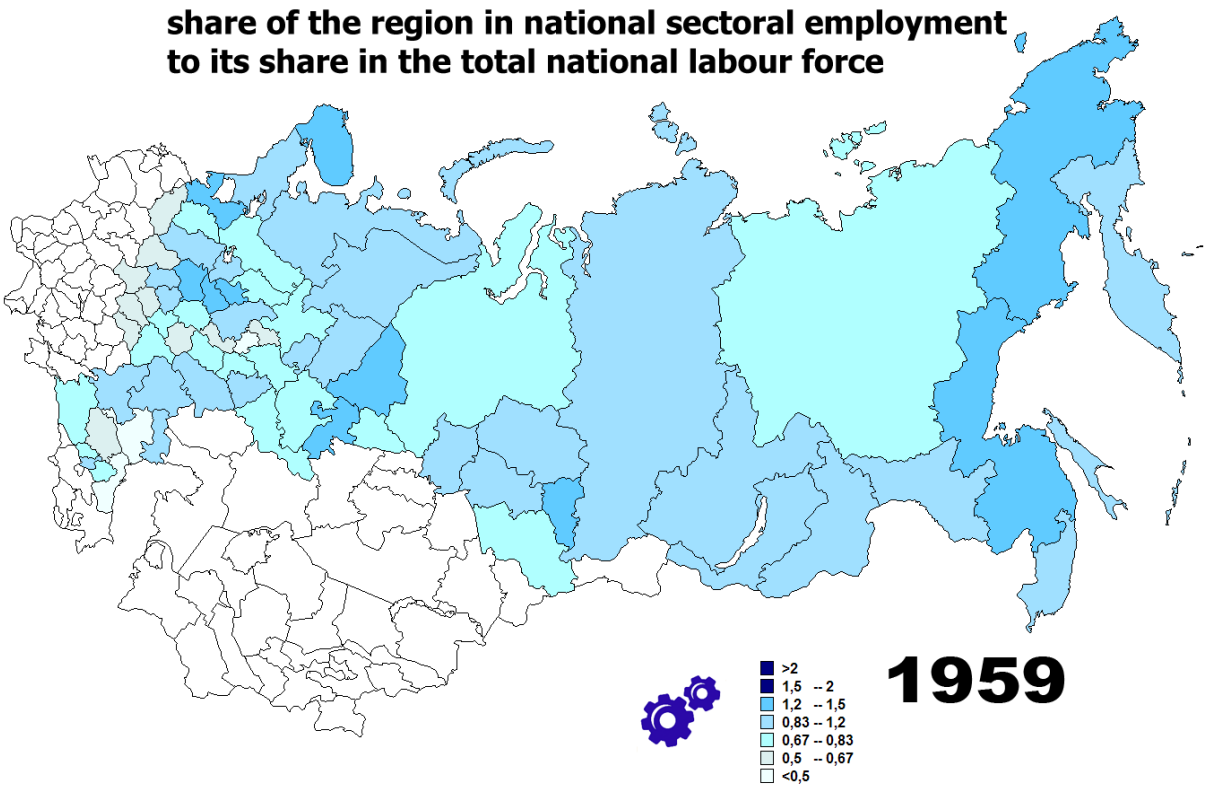

Source: Calculated by authors from G. Kessler & A. Markevich, Electronic Repository for Russian Historical Statistics (2014), http://ristat.org/; *Pervaia vseobschaia perepis' naseleniia Rossiiskoi imperii 28 ianvaria 1897 goda*, 86 vols. (St. Petersburg, 1905); *Obshchii svod po imperii rezul'tatov razrabotki dannykh pervoi vseobshchei perepisi naseleniia, proizvedennoi 28 ianvaria 1897 goda*, 2 vols. (St. Petersburg, 1905).

Clearly, secondary sector employment in 1897 is distributed much more unequally across the country. The number of regions with an average share of secondary sector employment is quite limited - most regions either show a certain degree of specialisation in manufacturing, or a very limited presence of secondary sector employment. Several key areas for manufacturing show up on the map – the Central Industrial Region around Moscow, the St. Petersburg region, the Amur province in the Far East, and the Black Sea coastal province of the North Caucasus. This offers no surprises, considering what we know about industrial development in the late 19th century Russian Empire, except perhaps the focus on secondary sector employment in the Far East and the Black Sea coastal province. In both regions secondary sector employment was probably related to the

presence of large ports - Novorossiisk on the Black Sea, from which grain produced in the agricultural hinterland was shipped to international markets, and Vladivostok and Nikolaevsk on the Amur river in the Far East. It needs to be said, though, that in both regions overall population size was very low and this might have affected the outcome of calculations.

Finally, what is surprising in Figure 3 is that the Urals region, the second most important centre of iron and metalworking industry in the Russian Empire (next to the Donbass-region in modern-day Ukraine), exhibits a level of secondary sector employment in line with its population size. Apparently, therefore, regional specialisation need not always immediately translate itself into significant shifts in the structure of the labour force.

## Figure 4: Secondary sector employment by region – Russia, 1959




Source: Calculated by authors from G. Kessler & A. Markevich, Electronic Repository for Russian Historical Statistics (2014), http://ristat.org/

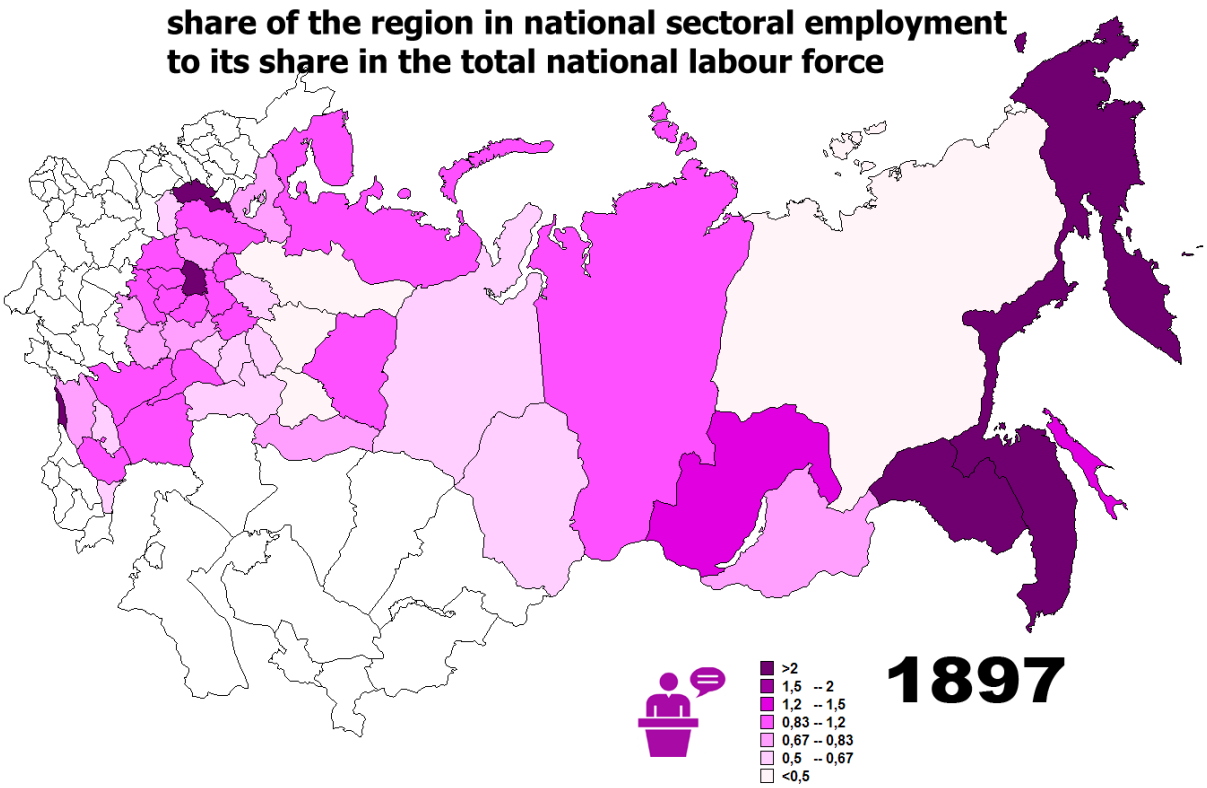
Figure 4 reads as the negative of figure 2 in many respects - areas with a low share of agricultural employment in 1959 have a large share of secondary sector employment, and vice versa. Compared to 1897 (figure 3), the main trend over time is the spread of employment in manufacturing from two industrial heartlands in European Russia around Moscow and St. Petersburg to other areas of the country in the East and North, notably the Urals, the Murmansk region, parts of central and Eastern Siberia, as well as the Russian Far East. This finding conforms well with what we know about Stalinist industrialisation, which aimed for the exploitation of the mineral resources of the country's Northern and Asian territories, building factories right along the main extraction sites.[27] What should be noted is that industrial development in these regions had been contingent upon the widespread

27 Davies et al., Economic Transformation, pp. 96-97.

use of convict labour from the vast network of labour camps which had been set up from the 1930s on.[28]

The figures 5 and 6, finally, look at the crucial one in terms of the changes over time – the tertiary sector, which already gave employment to more people than manufacturing in 1897 and came out on top in 1959 (cf. Charts 1 and 2).

Figure 5: Tertiary sector employment by region – Russia, 1897




Source: Calculated by authors from G. Kessler & A. Markevich, Electronic Repository for Russian Historical Statistics (2014), http://ristat.org/

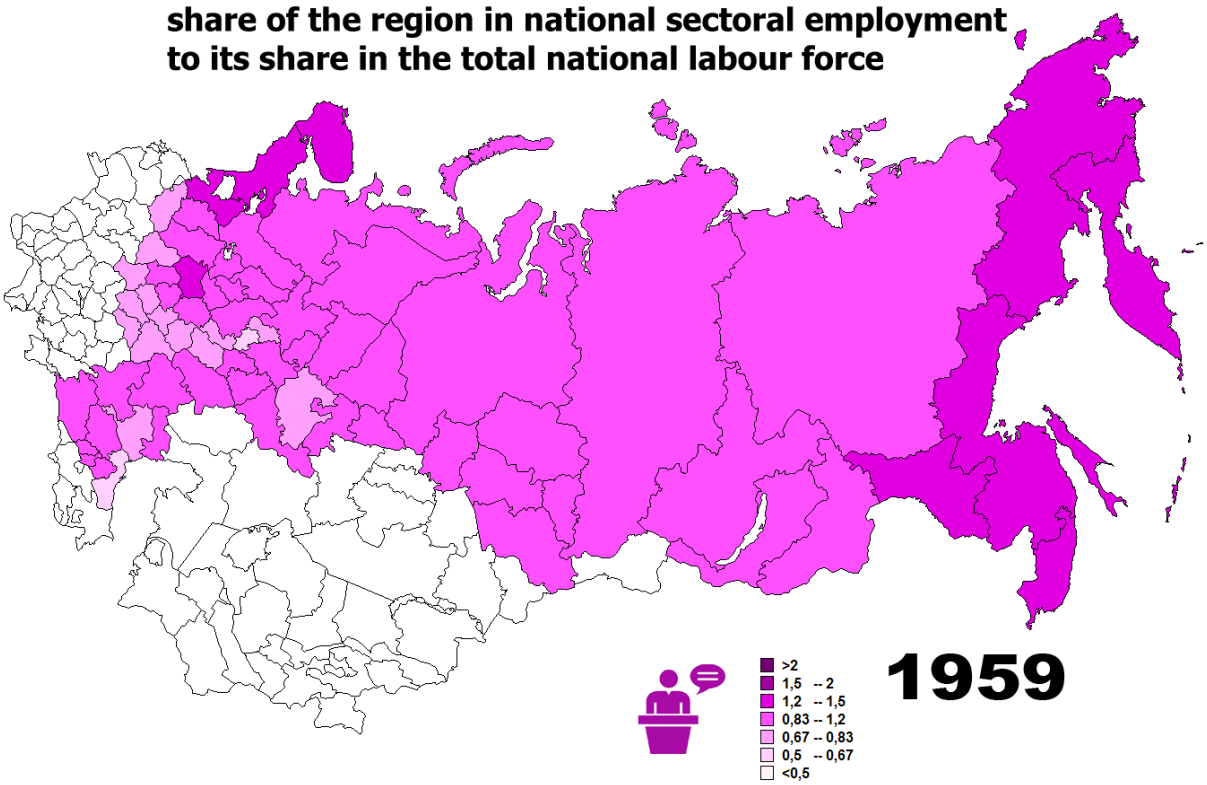
The 1897 map does not lend itself to easy interpretation. If we look at the areas where service sector employment was represented disproportionally, the dark violet areas, it would appear that we see two things at the same time. On the one hand, if we compare to figure 3, we see that the service sector dominated in areas where industrial activity was also concentrated – notably Moscow, St. Petersburg, the Novorossiisk port and the Far East.

At the same time, though, high service sector employment in certain areas, particularly in the economically largely undeveloped regions of the Far East and Southern Siberia points to something else – the role of the state in accounting for the leading role of the tertiary sector. These were border regions, recently opened to settlement and with a significant presence of the military and transport. Of course, state service sector employment was also significant in Moscow and especially the capital St. Petersburg, so what this map offers us, really, is a combined explanation for the

28 Khlevniuk, Oleg V., "Prinuditel'nyi trud v ekonomike SSSR, 1929-1941 gody", *Svobodnaia Mysl'*, 3 (1992), pp. 73-84.

leading role of the tertiary sector in the late nineteenth century occupation structure of Russia.

Figure 6: Tertiary sector employment by region – Russia, 1959




Source: Calculated by authors from G. Kessler & A. Markevich, Electronic Repository for Russian Historical Statistics (2014), http://ristat.org/

By contrast, the 1959 map is much less interesting – service sector employment is spread much more homogeneously over the country. There are two exceptions. In the first place, the belt of agricultural regions south of Moscow, where service sector employment is less significant, which offers further evidence for a serious regional specialisation on agriculture in these regions. Secondly, service sector employment appears to be more important in the coastal provinces in the European North and the Far East, which is likely explained by the presence of ports, customs and the military in these border regions.

In most other areas of the country service sector employment appears to be a straightforward expression of two parallel processes – on the one hand the growth of the urban-industrial economy, to which the development of the service sector is a corollary, and on the other hand the expansion of the state apparatus itself, which was running and planning the economy.

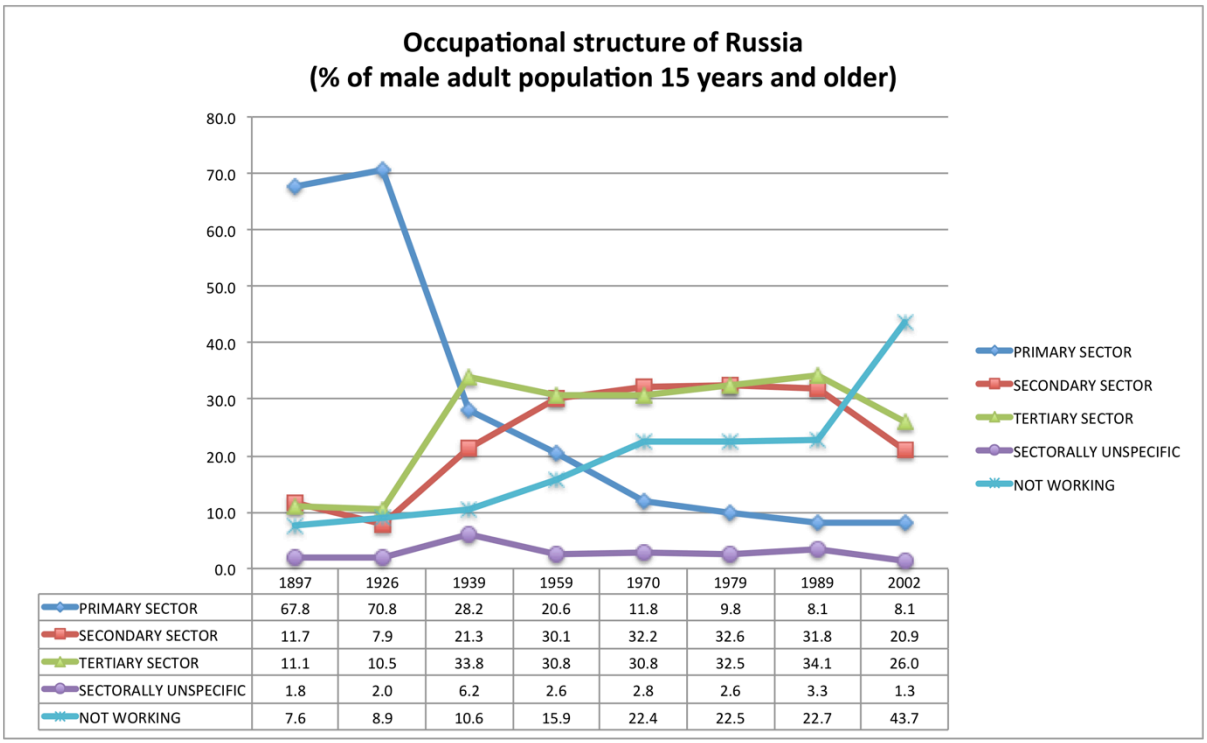
Summarising the findings of the regional perspective in this section, it would appear above all that in the long run industrialisation reduced, rather than increased regional differentiation in occupational structure, but the big question here is of course to what extent this is explained by the extreme centralisation of power and decision-making in the Soviet system, and to what extent by other, more generic forces of convergence linked to industrial development.

## Gender Perspective

In the above we have looked at changes in occupational structure over time and between regions. There were, however, profound differences between the sexes as well, and in this section we take to a systematic gender-perspective. We only look at gender-differences over time, not across regions, for the simple reason that we do not expect gender-differences in occupational structure to have been very much different in different regions. The charts 6-11 highlight the main trends we would like to discuss in this section. These charts have been set up in the same way as the charts 1-5, which makes direct comparison possible.

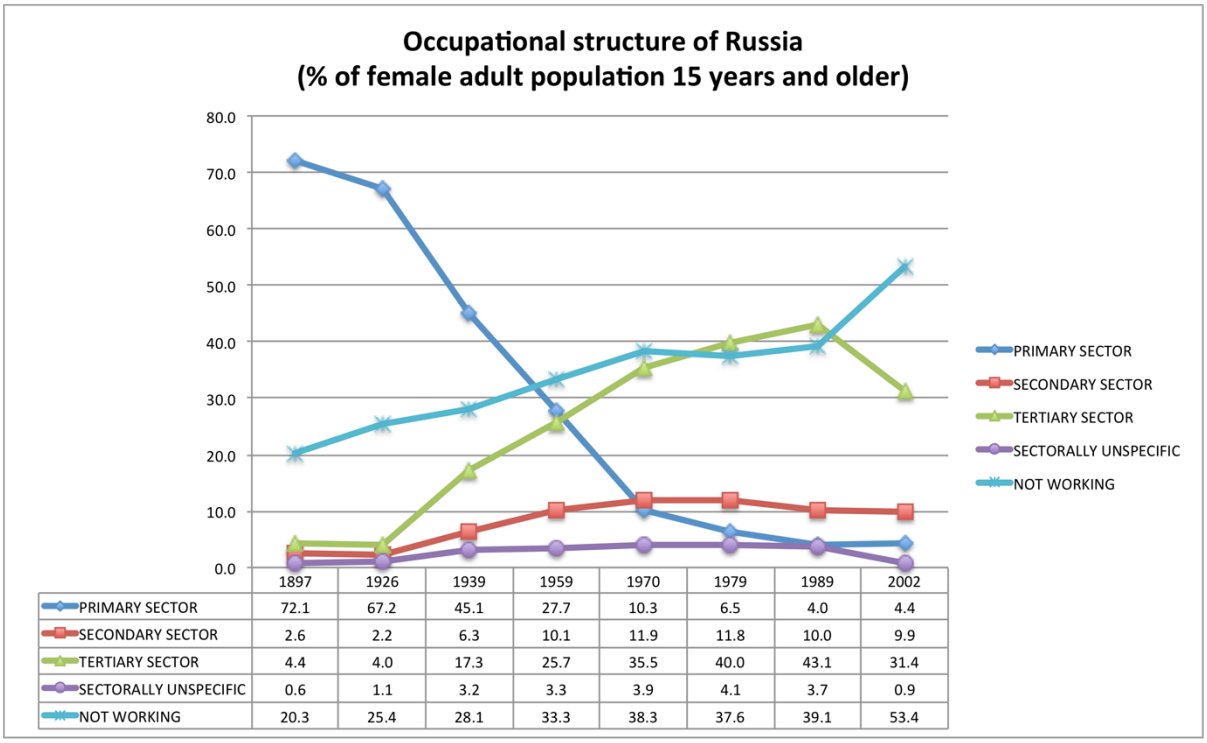
First of all, let us look at the principal breakdown of occupational structure between those outside and inside the labour force, and for the latter, between the primary, secondary and tertiary sectors (Charts 6-7).

### Chart 6: Occupational structure of Russia (% of male adult population 15 years and older)




| | 1897 | 1926 | 1939 | 1959 | 1970 | 1979 | 1989 | 2002 |
|---|---|---|---|---|---|---|---|---|
| PRIMARY SECTOR | 67.8 | 70.8 | 28.2 | 20.6 | 11.8 | 9.8 | 8.1 | 8.1 |
| SECONDARY SECTOR | 11.7 | 7.9 | 21.3 | 30.1 | 32.2 | 32.6 | 31.8 | 20.9 |
| TERTIARY SECTOR | 11.1 | 10.5 | 33.8 | 30.8 | 30.8 | 32.5 | 34.1 | 26.0 |
| SECTORALLY UNSPECIFIC | 1.8 | 2.0 | 6.2 | 2.6 | 2.8 | 2.6 | 3.3 | 1.3 |
| NOT WORKING | 7.6 | 8.9 | 10.6 | 15.9 | 22.4 | 22.5 | 22.7 | 43.7 |

## Chart 7: Occupational structure of Russia (% of female adult population 15 years and older)




| | 1897 | 1926 | 1939 | 1959 | 1970 | 1979 | 1989 | 2002 |
|---|---|---|---|---|---|---|---|---|
| PRIMARY SECTOR | 72.1 | 67.2 | 45.1 | 27.7 | 10.3 | 6.5 | 4.0 | 4.4 |
| SECONDARY SECTOR | 2.6 | 2.2 | 6.3 | 10.1 | 11.9 | 11.8 | 10.0 | 9.9 |
| TERTIARY SECTOR | 4.4 | 4.0 | 17.3 | 25.7 | 35.5 | 40.0 | 43.1 | 31.4 |
| SECTORALLY UNSPECIFIC | 0.6 | 1.1 | 3.2 | 3.3 | 3.9 | 4.1 | 3.7 | 0.9 |
| NOT WORKING | 20.3 | 25.4 | 28.1 | 33.3 | 38.3 | 37.6 | 39.1 | 53.4 |

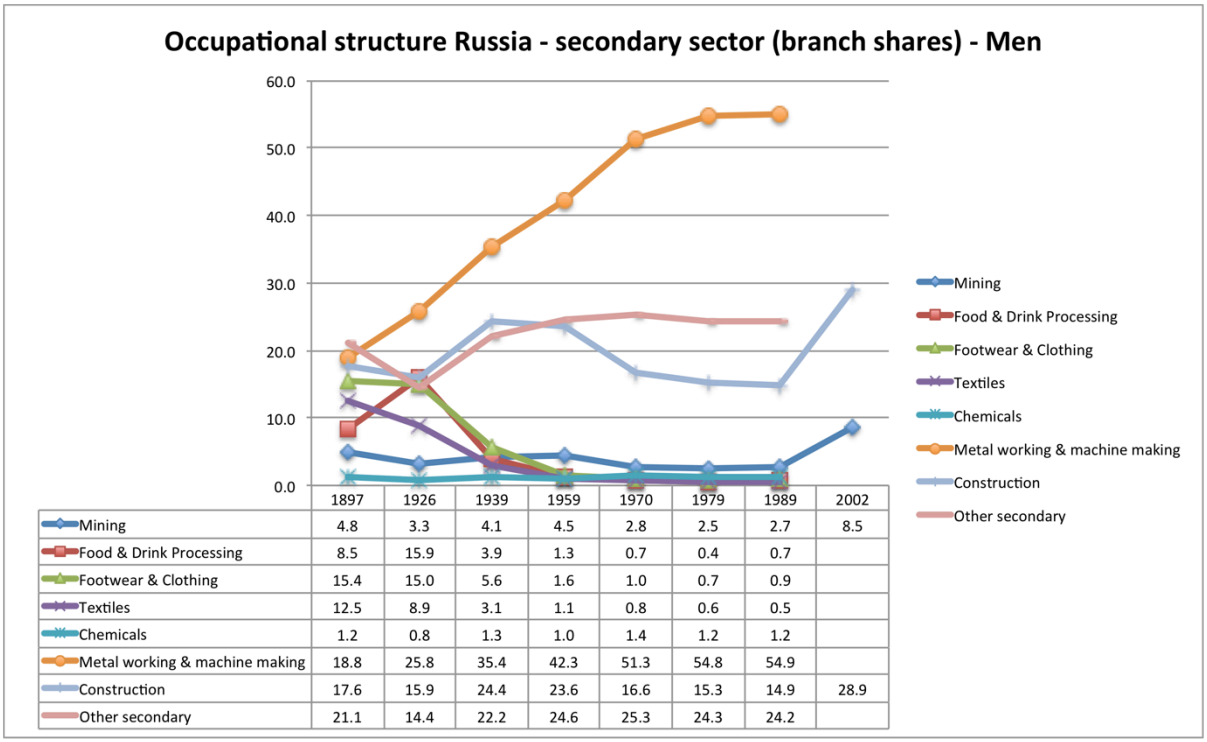
Starting with labour force participation, the trends over time are roughly the same for both men and women, only at different over-all levels. For the Soviet period of full employment the over-all difference in labour force participation between men and women is above all due to the different retirement ages - since the introduction of general old age retirement schemes women retire at 55 and men at 60, which shows up in the charts as a systematic difference in labour force participation. For the period 1897-1959 this factor does not play a role, so here we really deal with different labour participation rates for men and women of the same age-cohort.

As far as employment in the three sectors is concerned the fundamental difference between the sexes is the considerably lower involvement of women in manufacturing and a concomitant specialisation on service sector employment. Secondary sector employment reached a peak for women in 1970 at 11.9% of the adult population, as compared to a peak for men in 1979 of 32.6%, that is almost three times the rate for women. Indeed, secondary sector employment actually outstrips tertiary sector employment for men in two years – 1970 and 1979, contrary to the trend for the population as a whole. Note, however, that this is a development of the later years - during industrial take-off, both in the late nineteenth century and in the 1930s-50s, it is the tertiary sector which grows most rapidly and employs more men and women than manufacturing. Similarly, although at different points in time, it is the tertiary sector which first overtakes primary sector employment, and not the secondary sector.

Charts 8 and 9 provide further insight into men and women's involvement in manufacturing. Male employment in manufacturing differs very little from the general trend, which is not surprising given their weight in the total, apart from the fact that their specialisation on metalworking and machine making was even more pronounced than that of the workforce as a whole. Men made metal and machines, appears to have been very much the bottom-line of male specialisation in Soviet manufacturing. Conversely, women worked in a much greater variety of branches (chart 9),

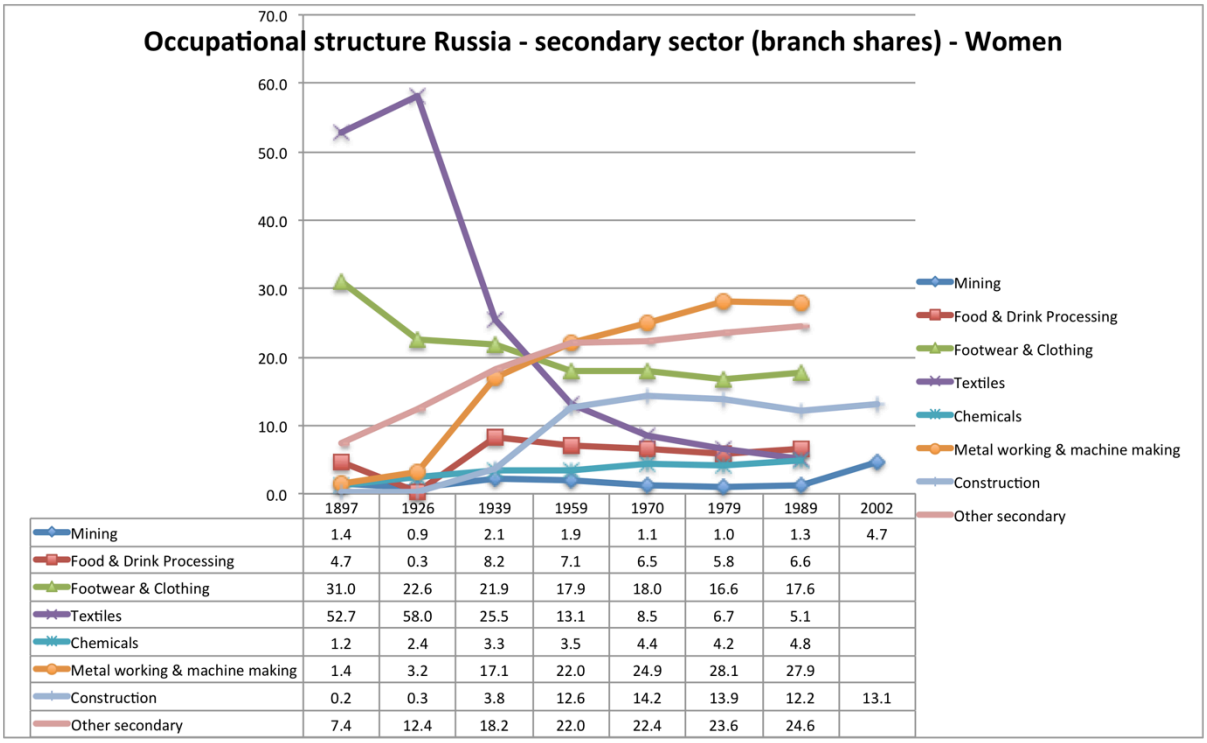
although here as well metalworking and machine-making was on top from 1959 on. Before 1959 we can observe more traditional gender-specialisation in the industrial workforce, with women heavily involved in textiles and the footwear and clothing industry.

## Chart 8: Occupational structure Russia – secondary sector (branch shares) – Men




| | 1897 | 1926 | 1939 | 1959 | 1970 | 1979 | 1989 | 2002 |
|---|---|---|---|---|---|---|---|---|
| Mining | 4.8 | 3.3 | 4.1 | 4.5 | 2.8 | 2.5 | 2.7 | 8.5 |
| Food & Drink Processing | 8.5 | 15.9 | 3.9 | 1.3 | 0.7 | 0.4 | 0.7 | |
| Footwear & Clothing | 15.4 | 15.0 | 5.6 | 1.6 | 1.0 | 0.7 | 0.9 | |
| Textiles | 12.5 | 8.9 | 3.1 | 1.1 | 0.8 | 0.6 | 0.5 | |
| Chemicals | 1.2 | 0.8 | 1.3 | 1.0 | 1.4 | 1.2 | 1.2 | |
| Metal working & machine making | 18.8 | 25.8 | 35.4 | 42.3 | 51.3 | 54.8 | 54.9 | |
| Construction | 17.6 | 15.9 | 24.4 | 23.6 | 16.6 | 15.3 | 14.9 | 28.9 |
| Other secondary | 21.1 | 14.4 | 22.2 | 24.6 | 25.3 | 24.3 | 24.2 | |

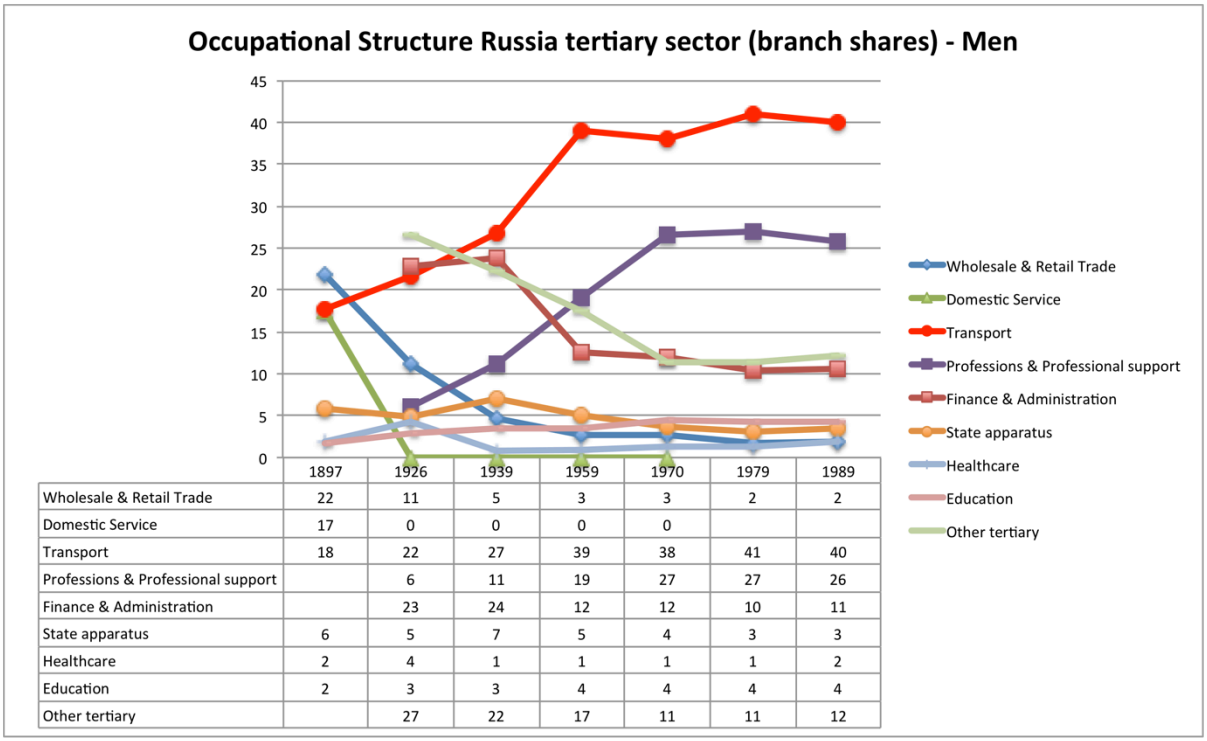
## Chart 9: Occupational structure Russia – secondary sector (branch shares) – Women




| | 1897 | 1926 | 1939 | 1959 | 1970 | 1979 | 1989 | 2002 |
|---|---|---|---|---|---|---|---|---|
| Mining | 1.4 | 0.9 | 2.1 | 1.9 | 1.1 | 1.0 | 1.3 | 4.7 |
| Food & Drink Processing | 4.7 | 0.3 | 8.2 | 7.1 | 6.5 | 5.8 | 6.6 | |
| Footwear & Clothing | 31.0 | 22.6 | 21.9 | 17.9 | 18.0 | 16.6 | 17.6 | |
| Textiles | 52.7 | 58.0 | 25.5 | 13.1 | 8.5 | 6.7 | 5.1 | |
| Chemicals | 1.2 | 2.4 | 3.3 | 3.5 | 4.4 | 4.2 | 4.8 | |
| Metal working & machine making | 1.4 | 3.2 | 17.1 | 22.0 | 24.9 | 28.1 | 27.9 | |
| Construction | 0.2 | 0.3 | 3.8 | 12.6 | 14.2 | 13.9 | 12.2 | 13.1 |
| Other secondary | 7.4 | 12.4 | 18.2 | 22.0 | 22.4 | 23.6 | 24.6 | |

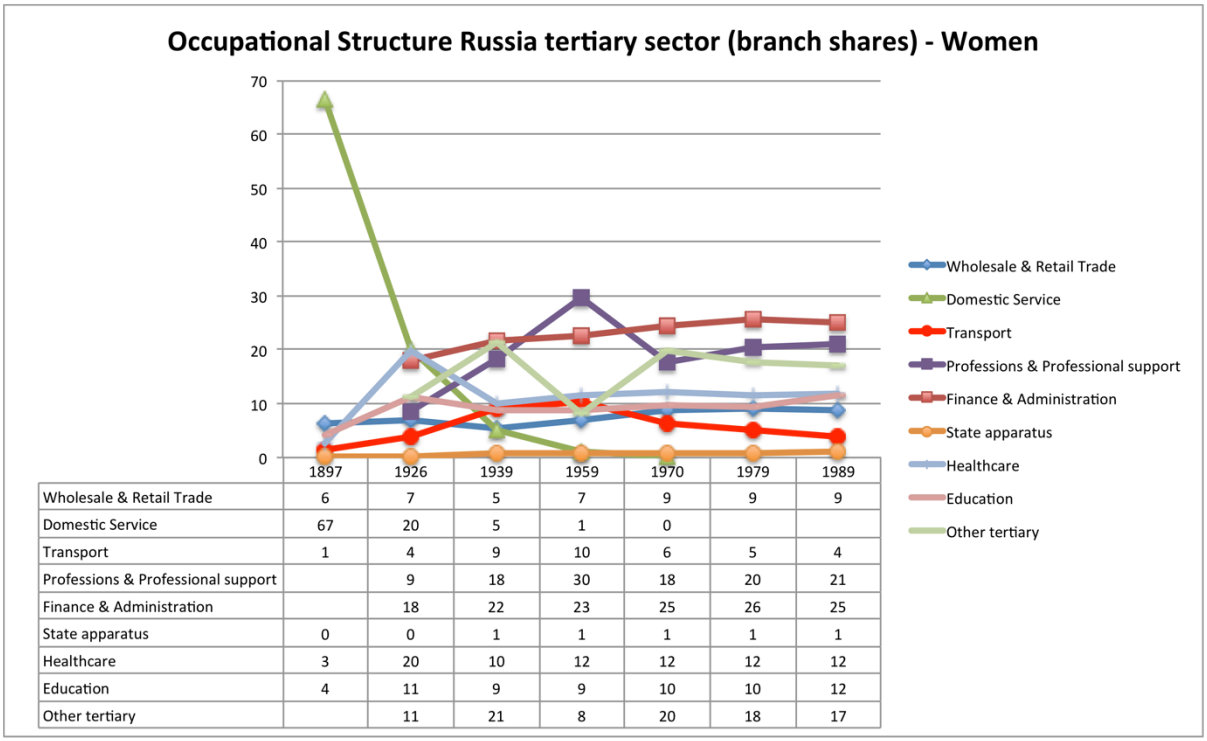
Turning our attention to the tertiary sector (charts 10 and 11), the overriding conclusion appears to be that from about 1926 onwards there does not really seem to have been any pronounced sort of specialisation among women in tertiary sector employment. Women worked throughout the service sector, and particularly so compared to men, who tended to work quite distinctly in transport and the professions, including supportive staff. Before 1926 the differences between the sexes in tertiary sector employment are even more pronounced. Men worked predominantly in trade (22%), transport (18%), and domestic service (17%), women overwhelmingly (67%) in domestic service. It was the Soviet encouragement of female employment from the 1920s on which changed this pattern.

Chart 10: Occupational Structure Russia tertiary sector (branch shares) – Men




| | 1897 | 1926 | 1939 | 1959 | 1970 | 1979 | 1989 |
|---|---|---|---|---|---|---|---|
| Wholesale & Retail Trade | 22 | 11 | 5 | 3 | 3 | 2 | 2 |
| Domestic Service | 17 | 0 | 0 | 0 | 0 | | |
| Transport | 18 | 22 | 27 | 39 | 38 | 41 | 40 |
| Professions & Professional support | | 6 | 11 | 19 | 27 | 27 | 26 |
| Finance & Administration | | 23 | 24 | 12 | 12 | 10 | 11 |
| State apparatus | 6 | 5 | 7 | 5 | 4 | 3 | 3 |
| Healthcare | 2 | 4 | 1 | 1 | 1 | 1 | 2 |
| Education | 2 | 3 | 3 | 4 | 4 | 4 | 4 |
| Other tertiary | | 27 | 22 | 17 | 11 | 11 | 12 |

Chart 11: Occupational Structure Russia tertiary sector (branch shares) – Women




| | 1897 | 1926 | 1939 | 1959 | 1970 | 1979 | 1989 |
|---|---|---|---|---|---|---|---|
| Wholesale & Retail Trade | 6 | 7 | 5 | 7 | 9 | 9 | 9 |
| Domestic Service | 67 | 20 | 5 | 1 | 0 | | |
| Transport | 1 | 4 | 9 | 10 | 6 | 5 | 4 |
| Professions & Professional support | | 9 | 18 | 30 | 18 | 20 | 21 |
| Finance & Administration | | 18 | 22 | 23 | 25 | 26 | 25 |
| State apparatus | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| Healthcare | 3 | 20 | 10 | 12 | 12 | 12 | 12 |
| Education | 4 | 11 | 9 | 9 | 10 | 10 | 12 |
| Other tertiary | | 11 | 21 | 8 | 20 | 18 | 17 |

What should be added to fully understand the Charts 8-11 is that the gendered division of labour in both manufacturing and services during the Soviet period is not something that came together entirely spontaneously. From the early 1930s on certain jobs and branches were earmarked for female employment and others for male employment, the criteria usually being the physically strenuous nature of the occupations and branches involved.[29] This covered both manufacturing and certain tertiary sector branches, among which transport, and it surely partly explains the extreme specialisation of men on certain occupations. A further question is of course to which extent these initially policy-based hiring preferences subsequently evolved into cultural norms and values influencing the gender division of labour.

## Labour Relations

Having examined occupational change in Russia over the twentieth century from a sectoral perspective, we will now look at the shifts in labour relations which accompanied occupational change. For this we rely on data gathered in the framework of the Global Collaboratory on the History of Labour Relations, 1500 - 2000, a project of the International Institute of Social History in Amsterdam. Labour relations are understood as the various vertical and horizontal social relations under which work can be performed. A full taxonomy has been worked out as part of the Collaboratory project, starting from a basic subdivision in society between those who are not expected or unable to work (the young, the elderly and the infirm) and those who work, whether part-time or full-time, outside the house or at home, in self-employment or as wage-earners, in slavery or as employers.[30]

The data are presented in Chart 12 for three benchmark years - 1897, 1959 and 2002.[31]

29 Goldman, Wendy Z., Women at the Gates. Gender and Industry in Stalin's Russia (Cambridge, 2002), pp. 143-160, 283.

30 Karin Hofmeester, Jan Lucassen, Leo Lucassen, Rombert Stapel, and Richard Zijdeman, "The Global Collaboratory on the History of Labour Relations, 1500-2000: Background, Set-Up, Taxonomy, and Applications", https://collab.iisg.nl/c/document_library/get_file?p_l_id=273223&folderId=277142&name=DLFE-203702.pdf [as retrieved on 30 November 2015]

31 The 1897 and 2002 data were sourced from the Global Collaboratory for the History of Labour Relations, the 1959 data from the Russian State Archive of the Economy for this paper. The 1897 data relate to the Russian Empire as a whole, excluding the Polish provinces, the 1959 and 2002 data to the territory of the modern-day Russian Federation.

## Chart 12: Labour Relations in Russia, 1897–2002


Source: Compiled by authors on the basis of *The Global Collaboratory on the History of Labour Relations 1500–2000*, https://collab.iisg.nl/group/labourrelations/, Gijs Kessler, Russia 1900 (June 2011); Idem, Russia 2000 (June 2011); Russian State Archive of the Economy (RGAE), f. 1562 (Central Statistical Administration), op. 336, d. 1644, ll. 28-35.

Key to understanding this graph is that the sum of all labour relations (including the non-working) for a given year is equal to the entire population. The non-working are separated from those expected to work using age-delimiters reflecting changing notions on these issues over time - for 1897 we operated with age-delimiters of under six and over seventy-five years of age, for 1959 and 2002 of under fifteen and over seventy-five. Apart from the registered unemployed, all others are considered to have worked, either in outside employment or within the household, specifically including household work. Note, that these definitions differ from similar terms used in the PST classification system, particularly the term non-working, which in PST covers all those outside the labour force, regardless of age, whereas in the Collaboratory taxonomy it refers exclusively to those who are considered too young or too old to work. A second crucial difference is that in the Collaboratory people engaged in household work are considered kin producers, whereas PST considers them be non-working.

Unfortunately, for 1897 we cannot separate the self-employed from those working in employment, but for the rest the trends over time are pretty straightforward. The 1897 pattern bears all the hallmarks of a society primarily engaged in peasant agriculture, either as household producers, or as family members assisting the head of household on the peasant farm. Particularly for this latter reason we have used an age delimiter of six to separate the non-working from the working. In peasant agriculture children would as a rule be assisting in household tasks or cow-herding, even in perhaps not full-time. The combined category of self-employed and wage-earners are those engaged in manufacturing and services, together accounting for just under 12% of the

population.

By 1959 we see a drastically different picture. The category non-working has increased, which is due to the fact that a different age-delimiter has been used to reflect the advent of universal, obligatory schooling. The category kin-producers on the other hand is much smaller, which reflects the general increase in labour force participation which we have also seen in chart 1. Besides, the composition of this category is different now - whereas in 1897 it consisted largely of members of peasant households working on the farm, it is now more heterogeneous, comprising both full-time "housewives", pensioners working on the private garden plots which accounted for a large share of Soviet household consumption[32], and all those fifteen years and older who were still enrolled in educational establishments.

Increased labour force participation also comes to the fore in the increase of the self-employed and the employed, which together account for 48% of the population. Two things should be noted here. First, self-employment is a specific category in the 1959 Soviet Union, consisting of those who were outside state employment. These were small-scale artisans working on the margins of the urban economy in particular niche occupations in services and petty manufacturing, certain liberal professions, like for example lawyers, but the largest group of people which were formally outside of state employment, were the collective farmers, who, until 1966, did not earn wages, but were entitled to a share of the collective farm production, dependent, though, on their participation in the collective efforts of the farm.[33] Secondly, in comparison to 1897, wage-earners were now by definition employed by the state, which had an absolute monopoly on the hiring of labour, and the increase of waged employment relative to 1897 should therefore also be read as a shift to state employment. Until 1966 the urban population, and after 1966 the rural population as well, worked almost exclusively for wages paid by the state as the only employer.

The main shift from 1959 to 2002 is the effective disappearance of self-employment, a process which was accomplished during Soviet times, as collective farmers were transferred to state employment and small-scale artisans, who had in many ways been a left-over from the past in 1959, dwindled into insignificance. Indeed, the 1.5% self-employment which existed in Russia in 2002 was to all likelihood something which grew in the first post-Soviet decade of the 1990s. Employment has now become the dominant labour relation, with household work in second place, which also increased relative to 1959, due to withdrawal from the labour market after the fade-out of Soviet policies of enforced full employment. The non-working category, finally, remained practically stable, which suggests that the ageing of the population, which we earlier on invoked as one of the possible explanations for a sharp decrease in labour force participation rates in the 1990s, apparently had much less of an impact on occupational structure than we assumed.

# Conclusion

In this paper we have examined occupational change in a major land-based empire which was a late industrialiser, moreover a conscious late industrialiser, which undertook two deliberate state-led attempts to catch up with the rest of the world, or in any case with its main geo-political rivals on the world stage. Both of these attempts generated structural change in the make-up of the economy and the labour force, although with important differences, which will be discussed below in relation

32 Markevich, Andrei, "Finding Additional Income. Subsidiary Agriculture of Soviet Urban Households, 1941-1964", in Filtzer, Donald et al. (eds), A Dream Deferred: New Studies in Russian and Soviet Labour History, International and Comparative Social History 11 (Bern, Switerzland ; New York, 2008), pp. 385-415.

33 Gregory andStuart, Soviet Economic Structure, pp. 295-297.

to the different agendas under which they were carried out – market versus non-market.

The occupational change brought forth by Soviet industrialisation is best documented. To start with, it resulted in an extremely rapid transfer of labour from agriculture to industry and services, and a sustained process of urbanisation from the late 1920s up to the 1980s. A second characteristic of Soviet occupational change is the very high labour force participation rate among both men and women, practically amounting to universal employment for the population of working-age. In terms of the shares of the three main sectors of the economy in employment, the tertiary sector took an early lead and continued to be on top throughout the twentieth century, with the exception of a short interlude in the 1970s when for men manufacturing took the first position. Women, however, consistently exhibited a preference for service sector employment.

Within secondary sector employment there was a clear division of labour between men and women. The former heavily concentrated their efforts on metalworking and machine-making, whereas women worked in a broader range of branches of industry. Tertiary sector employment in the Soviet context does not relate to the ascent of a service sector industry catering to the needs of the population, but to the expansion of the state apparatus catering to the planning, administration and other needs of the economic development effort.

As far as the geographical differentiation in patterns of occupational change is concerned, we found evidence of a process of convergence between Russia's regions over time, with the caveat, though, that this effect might also be a function of the extreme centralisation of decision-making within the Soviet system.

Unfortunately, lack of data on the cumulative occupational change brought forth by Russia's first wave of industrialisation does not allow us to make a systematic comparison between market and non-market industrialisation. For the tsarist period we have only one cross-section of occupational structure, and no possibility to retrace what further decades of industrialisation brought in this respect, because all subsequent changes were undone again by the after-effects of revolution and civil war.

Certain peculiarities of twentieth century occupational change could however tentatively be linked to the non-market context under which this second wave of industrialisation took place. In the very first place this concerns the very high labour participation rates, which were above all the result of a pattern of growth relying on a constant expansion of inputs at no real costs, because of the soft-budget constraints on centrally allocated investments, including enterprise wage funds. Labour costs essentially did not play a role and this resulted in an extremely labour (as well as capital)-intensive path of industrial development.

A second 'distortion' which can be linked to the specific context under which Soviet industrialisation took place is the extreme over-concentration, particularly among men, on employment in metalworking and machine-making. In terms of skill-formation this meant a very low diversity in the types of industrial skills among the Soviet labour force at the time the country came to face the challenge of realigning its bankrupt economy under market conditions.

What can surely, and paradoxically, not only be explained by the non-market character of Soviet industrialisation, however, is the dominant position of tertiary sector employment, because this was in place already by the late nineteenth century. Rather, it appears to be related to the large footprint of the Russian state in terms of patterns of employment, both as an imperial power, and as a hyper-centralised state which actively pursued the economic development of the country.

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