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URBAN INDUSTRIALIZATION IN THE PROVINCIAL TOWNS OF LATE IMPERIAL RUSSIA

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Modernization in Russia was intimately associated with the process of urban-industrialization, with the penetration of capitalism into a society which had evolved under the conditions of an absolute autocracy. While the level of employment in industry certainly did not figure prominently in the economy of most Russian cities on the eve of the Great War, industrialization-- and with it rapid urban growth-- nonetheless did serve as a catalyst in the general process of economic development. The process started late in Russia, of course, gathering momentum only toward the close of the nineteenth century. Many cities were metamorphosed during the years of rapid industrialization, not least of which being the Empire's capital, St. Petersburg. Here, as elsewhere in Russia, modern industrialism was not easily accommodated by the existing, largely antedeluvian, urban infrastructure. Nor were the demands of the factory, with its emphasis on regularity of habit and labour discipline, readily accommodated by workers whose prevailing socio-cultural values were more often those of the countryside than the city. Across urban Russia the old and the new, the traditional and the modern, were thrown into bold relief. The consequences were manifold and not everywhere the same-- but they were undeniably significant. While the broad dimensions of the urban-industrialization process are well enough known, especially in the context of the Empire's larger cities, there is as yet relatively little information on the impact of industrialization in the smaller provincial centres.

At mid-nineteenth century, scarcely one in twenty of the Empire's subjects was an urbanite. Few towns were very large; indeed, only St. Petersburg, Moscow and Odessa had more than 100,000 inhabitants. But by 1914 about thirty cities were this size, and about one-sixth of the total population was officially classified as urban. St. Petersburg and Moscow with, respectively, a shade more and a shade less

than two million inhabitants each, completely dominated the urban system (See Figure 1). Three cities, Riga, Kiev and Odessa, with populations ranging from 500,000 to 700,000 comprised a second level in this system. A network of provincial centres made up the third level in the urban hierarchy. With between 100,000 and 300,000 inhabitants each, places like Vil'na, Khar'kov, Yekaterinoslav, Tula, Rostov-on-Don, Saratov, Samara, Kazan', Tiflis, Baku, Tashkent, Omsk and Irkutsk, to name but a few, evoke a host of images.[1] Scattered across the vast territory of the Empire, such provincial centres reflected ethnic diversity, differential economic opportunities in trade and commerce, and quite different patterns of urban-industrial development.

To investigate the role of industrialization in provincial Russia is clearly a large-scale undertaking. In this paper we will begin the task by raising some questions pertinent to the urban-industrialization process, and by providing some empirical data for a sample of provincial Russian cities. The questions raised are drawn from the rather better documented history of urban-industrialization in the larger centres, especially St. Petersburg and Moscow.[2] The ultimate objective is to establish whether the characteristics of urban-industrialization in the Empire's largest cities represented the leading edge of a general process or were simply anomalies. Thus, this paper constitutes a first and rather tentative stage of a larger scale enquiry.

The first question to be addressed is: how important was industry in the provincial city? Clearly, the industrial structure, the level of mechanization and so on reflect the special attributes of particular places; human, resource and geographical. It is the purpose here to determine the nature of the industrial structure and relative importance of employment in industry within selected urban economies on the eve of the Great War.

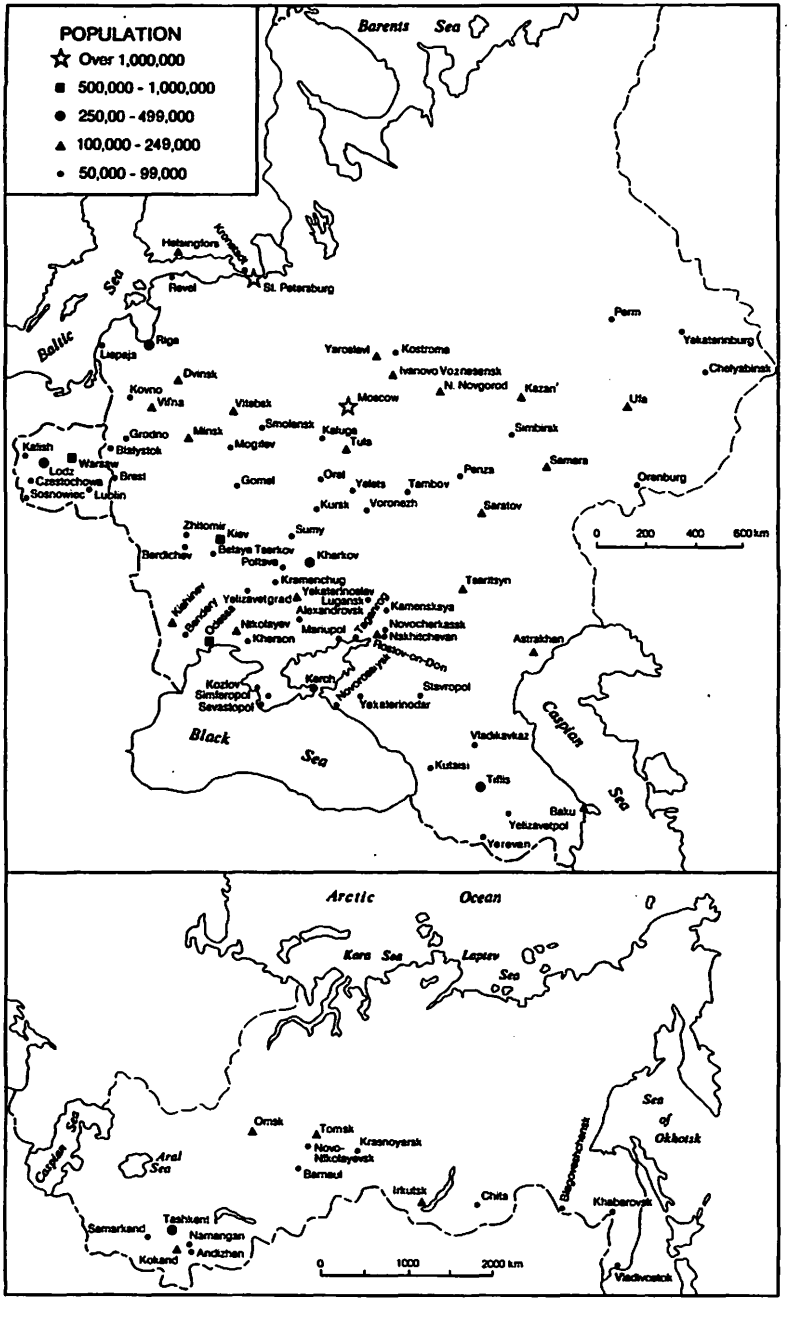


Figure 1: Urban Russia, 1914

The second question concerns the complex relationship between industrialization and urban growth. Although industrialization was the catalyst in the rapid growth experienced by St. Petersburg and Moscow, obviously not all who flocked to these cities found jobs in industry. Precisely why peasants and others decided to migrate is an important, but probably unanswerable question. It has been noted that there is no apparent positive correlation between industrialization, measured in terms of employment in urban industry, and the rate of urban growth.[3] This really should come as no great surprise. Industrialization was much more than simply a production function in which factories, workshops and their employees were the sole agents. It was itself both the agent and the form of modernization in the broadest sense. It heralded change and opportunity, and in this context clearly served to stimulate migration. The essential question to ask is not whether urban growth was correlated with an increase in industrial employment, but whether the presence of industry was reflected in, for example, the composition of social strata (*sosloviya*) and the demography of the provincial town. The role of peasants in the industrial labour force was, of course, large, and it increased during the decades of rapid urban-industrialization in the late imperial era.[4] And rural-urban peasant migration was characteristically selective by sex and age. We will begin our enquiry into the impact of industrialization on the provincial urban centre by focussing attention on matters related to social structure and sex ratios.

The third general question to be examined concerns the process of urban growth. What were the relative contributions to the growth of the provincial centre of in-migration and natural increase? In Moscow and St. Petersburg-- indeed in all of the larger Russian cities examined thus far-- transience has been a dominant characteristic of the popula-

tion.[5] Were high levels of itinerancy also part and parcel of life in the provincial urban centre?

The analytical framework for this paper is a simplified model of the urban system. The principal criterion for assigning cities a place in this schema is population size, which is used as a rather general surrogate for a variety of central place attributes such as trade area, range of services, administrative functions and so forth. There is an extensive literature on central place and it will be apparent that there are ample precedents for refining this model in functional and geographical terms.[6] This will be done at a later stage of our enquiry, but suffice it to say at this point that population size is the initial point of departure. To reiterate, in 1914 St. Petersburg and Moscow constituted the first order centres. Odessa, Kiev and Riga were the second level, or order, cities in the urban hierarchy. Provincial centres comprise the third level, and these include all cities with between 100,000 and 300,000 inhabitants. While it is necessary in this study to limit the discussion to a selection of provincial centres, it is intended that the provincial scene considered be representative of a variety of regional and ethnic settings. Vil'na in the western Pale, Tula in central European Russia, Kazan' at the confluence of the Volga and Kama rivers, Baku on the Caspian Sea and Omsk in Western Siberia clearly represent different regional economies. But Vil'na was also a predominantly Jewish centre. Kazan', at least historically, was strongly influenced by Tatars though by 1897 it was, like Tula and Omsk, predominantly Slavic in ethnic composition. On the other hand, in Baku Russians were outnumbered by Azeris and Georgians. For each of these cities comparative data will be compiled for the questions outlined above. Additionally, the discussion from time to time will be broadened through the inclusion of data for some other selected provincial centres, principally

Ivanovo-Voznesensk, Khar'kov and Orenburg (Figure 1). Clearly these few provincial centres cannot be regarded as being fully representative of provincial Russia. Nonetheless, the data in broad terms will pertain to both core and peripheral locations and thus might afford some new insights into the nature of the urban-industrialization process in late imperial Russia.

INDUSTRIALIZATION

With less than three million factory hands in Russia in 1914 it is apparent that the share of the total labour force so engaged was still quite small. Moreover, industrialization was not so closely associated with cities as it was in Europe and America. In the early 1900s about half of all factory workers in Russia were in rural rather than urban locations.[7] To be sure, a few "rural" industrial centres ought to have been designated urban on a functional, and indeed population size, basis.[8]

But notwithstanding the vagaries of Tsarist classification procedures, there were still a great many people employed in factories located in the countryside. Many provincial towns doubtless would have had a more industrial character were it not for the early nineteenth century government policies which attempted to re-direct, if not restrain, industrial development. Before examining the impact of industrialization on the provincial town it would be appropriate to review briefly some of the principal features of industry in those cities comprising the first and second levels in the urban hierarchy in 1913. In Moscow the textile industries continued to employ the largest number of workers-- just over 67,000 (Table 1). Compared to the mid-nineteenth century however, the relative importance of this sector had been more than halved. The 343 metalworking

Table 1: Industrial Structures of First Level Urban Centres Moscow and St. Petersburg, 1913

	MOSCOW				ST. PETERSBURG			
Industry Group	Establishments		Employment		Establishments		Employment	
	No.	%	No.	%	No.	%	No.	%
Metalwork	343	27.3	38742	20.9	284	29.7	77816	40.0
Chemical	80	6.4	6692	3.6	89	9.3	16446	8.5
Food/ Tobacco	136	10.8	28741	15.6	100	10.5	20528	10.5
Tanning/ Tallow/Soap	75	6.0	9309	5.0	49	5.1	8455	4.3
Paper/ Printing	276	21.9	18505	10.0	312	32.6	23230	11.9
Textile	249	19.8	67251	36.3	86	9.0	43931	22.6
Miscell.	98	7.8	15988	8.6	36	3.8	4178	2.2
Totals	1257	100.0	185228	100.0	956	100.0	194584	100.0

Source: D. P. Kandaurov, *Fabrichno-Zavodskiye Predpriyatiya Rossiiskoy Imperii (Isklyuchaya Finlyandiyu)* (Petrograd: Sovet S'ezdov Predstaviteley Promyshlennosti i Torgovli, 1914)

establishments, employing almost 39,000 workers, comprised the second most important industrial group. In absolute terms the number of employees of metalworking firms had more than tripled since 1890, a rate of growth which greatly outstripped that registered by the textile group. Machinery production dominated the metalworking group with nearly 14,000 employees. While this was a sizeable number, roughly 26,000 people still continued to labour in Moscow's 36 cotton-spinning factories. By 1913 employment in St. Petersburg's metalworking group was almost twice

Table 2: Industrial Structures of Second Level Urban Centres Kiev, Odessa, Riga, 1913

	KIEV				ODESSA			
Industry	Establishments		Employment		Establishments		Employment	
	No.	%	No.	%	No.	%	No.	%
Metalwork	34	23.6	4039	30.1	60	20.5	6139	28.5
Chemical	12	8.3	502	3.7	38	13.0	1776	8.3
Food/ Tobacco	37	25.7	5622	41.9	96	32.9	8242	38.3
Tanning/ Tallow/Soap	6	4.2	200	1.5	14	4.8	560	2.6
Paper/ Printing	44	30.5	2328	17.4	68	23.3	2404	11.2
Textile	3	2.1	190	1.4	5	1.7	325	1.5
Miscell.	8	5.5	532	4.0	11	3.8	2075	9.6
Totals	144	100.0	13413	100.0	292	100.0	21521	100.0

Source: D. P. Kandaurov, *Fabrichno-Zavodskiye Predpriyatiya*

that in textiles, approximately 78,000 as compared to 44,000 (Table 1). Growth since 1890 had been tumultuous, aided in no small measure by government contracts for shipbuilding and the supply of armaments. Foreign capital was a conspicuous element in the financing of the numerous joint-stock metalworking firms, something which seems not to have occurred with quite the same frequency in Moscow. As a comparison of the share of employment by industrial group in the two cities makes plain, Moscow's industry was now the more diversified. Roughly the same share of employment was found in the paper and printing, tanning, tallow, and soap groups, but in

Table 2 (Continued)

RIGA				
Industry	Establishments		Employment	
	No.	%	No.	%
Metalwork	109	26.2	23379	37.5
Chemical	64	15.4	3456	5.5
Food/ Tobacco	100	24.0	6979	11.2
Tanning/ Tallow/Soap	21	5.1	1064	1.7
Paper/ Printing	68	16.3	3183	5.1
Textile	33	9.9	20855	33.4
Miscell.	21	5.1	3487	5.6
Totals	416	100.0	62,403	100.0

chemicals and metalworking St. Petersburg was clearly more specialized. With about 10,000 more workers, but 300 fewer establishments, St. Petersburg's industry was also different in terms of the scale of enterprise. On average, each factory in St. Petersburg employed 203 people in 1913. In Moscow the comparable figure was 147. It was only in food and tobacco and paper and printing that the average number of workers per factory in Moscow and St. Petersburg was roughly the same. Although information on motive power is at best patchy, what is available suggests that St. Petersburg factories were more mechanized as well.[7]

Amongst the three cities comprising the second level of the urban hierarchy, Riga was clearly the most heavily industrialized in 1913 (Table 2). Not only was the factory workforce larger in absolute terms, but since Riga's population of 517,000 in 1913 was smaller than that of Kiev or Odessa, it was much greater in relative terms as well. In the composition of the industrial structure Riga shared with St. Petersburg a predominance of metalworkers and with Moscow a sizeable proportion of textile employees. With an average of 150 workers per factory, Riga's industry again was comparable to Moscow's. The differences between Riga and its counterparts in the urban system are apparent from the data presented in Table 2. Kiev's complement of factory workers was decidedly small, and despite a reasonably large share of metalworkers, it was the food and tobacco products employees who had long dominated the city's industrial enterprises, notably the Kievskiy plant, which employed 1,300 workers, and the Kiselevskiy with just over 1,000 workers.[10] It was the handful of large sugar refineries which accounted for the fact that the average number of workers per factory in all industries was 93. In Odessa the comparable figure was just 74, though as Table 2 indicates, total industrial employment was somewhat greater there. In terms of the relative allocation of workers by industrial group, Odessa shared many features with Kiev. In both cities metalworking and food and tobacco products employment was comparable. And it was Odessa's two sugar beet refineries that the greatest concentrations of workers were to be found. There were 2,000 in one plant and 700 in the other.

To be sure, there were some examples of modern production technology in the Empire's three second order urban centres. This was especially true of Riga in which advanced metallurgical and engineering firms were notable. Kiev continued to serve its agricultural hinterland, as in somewhat similar fash-

ion did Odessa. But in these latter centres commerce and trade held sway, with factory production playing a distinctly minor role. Given the size of their populations, which exceeded 600,000 in 1913, the relatively minor role of industry is of interest. In Odessa, particularly, but also in Kiev, a sizeable Jewish element amongst the population no doubt played some part in there being large numbers of people employed in the service and handicraft sectors.[11] While the factory workforce in St. Petersburg was about 10 percent of total population, and only marginally less in Moscow, it was under 4 percent in Odessa and scarcely 2 percent in Kiev. If industrial production was the vanguard of modernization, then Riga with 12 percent of its population so occupied was clearly at the forefront amongst Russia's first and second order urban centres.[12]

From Table 3 it is immediately apparent that amongst our sample of provincial centres there was considerable diversity in industrial structure, indeed in the absolute and relative importance of industry. In terms of population size in 1913, Baku had 214,000 inhabitants, while Kazan' and Vil'na each had about 200,000. Omsk and Tula accommodated about 140,000 each.[13] Tula was clearly the most heavily industrialized of our selected provincial centres, both in absolute terms and in respect of the share of factory operatives of the total population. Its 22,000 industrial workers comprised 16 percent of the total population, a larger share than that found in Riga. And with average plant size exceeding 225 workers, in this facet of industrialization, Tula even outstripped St. Petersburg. Yet both the total employment and average plant size were very much shaped by the presence in Tula of two enormous metal-working plants, employing 7,000 and 6,500 workers respectively. Separating these plants out from the total reduces the average plant size to 92 workers, a smaller but still sizeable average employment. Baku

Table 3: Industrial Structures of Selected Third Level Centres Vil'na, Tula, Kazan, Baku and Omsk, 1913

	VIL'NA				TULA			
Industry Group	Establishments		Employment		Establishments		Employment	
	No.	%	No.	%	No.	%	No.	%
Metalwork	8	9.4	563	13.4	66	67.3	19841	88.8
Chemical	2	2.4	120	2.9	--		--	
Food/ Tobacco	14	16.5	1173	27.9	11	11.2	1973	8.8
Tanning/ Tallow/Soap	1	1.2	20	.5	5	5.1	146	.7
Paper/ Printing	49	57.5	1477	35.9	4	4.1	100	.4
Textile	9	10.6	594	14.1	3	3.1	87	.4
Miscell.	2	2.4	259	6.3	9	9.2	205	.9
Totals	85	100.0	4206	100.0	98	100.0	22352	100.0

Source: D. P. Kandaurov, *Fabrichno-Zavodskiye Predpriyatiya*

was the major oil producing centre in late imperial Russia, and its industrial structure was dominated by oil-related industries.[14] With 8 percent of its total population engaged in manufacturing plants with an average employment of 86 workers, it was an important centre of industry in provincial Russia. More typical in many ways of the role of industry in the third order centres was Kazan', where close to 13,000 people laboured in factories. Kazan' had the same number of factory operatives as Kiev, a city with three times its population. The tanning and leather industries set Kazan' apart. Given its strategic railroad and river access, it had long served an extensive hinterland in which cattle raising, notably

Table 3 (Continued)

Industry Group	KAZAN'				BAKU			
	Establishments		Employment		Establishments		Employment	
	No.	%	No.	%	No.	%	No.	%
Metalwork	8	8.5	380	3.1	110	57.0	10347	62.3
Chemical	9	9.6	1913	15.1	24	12.4	4741	28.5
Food/ Tobacco	26	27.7	1608	12.7	21	10.9	774	4.6
Tanning/ Tallow/Soap	24	25.5	7722	61.1	5	2.6	100	.6
Paper/ Printing	20	21.3	665	5.3	31	16.1	615	3.6
Textile	5	5.3	270	2.1	--		--	
Miscell.	2	2.1	80	.6	2	1.0	71	.4
Totals	94	100.0	12638	100.0	193	100.0	16648	100.0

amongst the Tatars, had been an important economic activity. The largest tannery in the city, the Alafuzovskiy plant, employed more than 6,500 workers. But 15 other small tanneries functioned as well, and many hundreds of handicraftsmen turned hide into a wide variety of consumer goods. The Krestovnikovskiy candleworks in Kazan' was also well known in many parts of the Empire. Kazan' itself was frequently referred to as a provincial town of the "Moscow type" by contemporaries. The similarities most often noted pertained to the physical fabric of the place and role of trade and commerce.[15] But in a general sense industry in Moscow and Kazan' was also comparable since their industrial structures were both very much

Table 3 (Continued)

OMSK				
Industry Group	Establishments		Employment	
	No.	%	No.	%
Metalwork	5	12.2	346	27.8
Chemical	1	2.4	7	.6
Food/ Tobacco	21	51.3	570	45.8
Tanning/ Tallow/Soap	2	4.9	37	2.9
Paper/ Printing	11	26.8	255	20.5
Textile	--		--	
Miscell.	1	2.4	30	2.4
Totals	41	100.0	1245	100.0

dominated by traditional manufactures, rather than by leading sectors like oil, metallurgy or engineering.

Vil'na was a *gubernii a* administrative town, but it also had some special attributes as a central place within the Jewish Pale. As might be inferred from Table 3, that with a mere 4,200 factory operatives amongst the more than 200,000 inhabitants, Vil'na was scarcely a major manufacturing centre. Grain and forest products were the principal commodities generated by its hinterland and it is therefore not surprising that the food and tobacco, and paper and printing industrial groups accounted for such a large share of factory employees. Most were engaged in small scale enterprises, the average employment

per factory across all industries being just 49 workers. In Kazan' the figure was 134.

In Omsk industry had appeared by 1913, but as Table 3 indicates, it was still only of a small scale. Each factory employed an average of only 30 people. The food and tobacco products group was dominant, both in terms of employment and the number of establishments. In metalworking the production of agricultural machinery was most important, but with just two of five plants and 286 of the 346-strong workforce it could not be regarded as a major activity. With the construction of the Trans-Siberian railroad, Omsk had emerged as a major transportation centre. Indeed, the largest single component of the labour force was the 2,000 or so employees of the railroad. In consequence, the population soared. In 1897 there were scarcely 37,000 inhabitants (Table 4); by 1913, as we have noted, about 140,000. The city was notorious for its dearth of urban amenities; it possessed neither "a club, nor a hall, nor a theatre".[16] While Omsk's metalworking industries were still underdeveloped, amongst the 2,000 or so railroad shop workers in 1913 were a good number of metallists who had migrated from the large industrial centres of European Russia.[17]

Industrial development had a differential impact on the provincial centres considered. All had been affected to some degree, as the data in Table 3 attest, but there were other provincial centres which more readily conveyed the image and substance of a factory town. We perhaps need only cite the example of Ivanovo-Voznesensk. In 1913 it had about 33,000 factory operatives, almost 31,000 of whom laboured in the town's 34 textile mills. With a total population of just over 147,000, about a fifth of the total population worked in factories. Moreover the average number of workers per factory was not far short of 500. This was a rather exceptional case of urban-industrialization.[18] How many social and demographic

features Ivanovo-Voznesensk shared with other provincial centres, or indeed higher order cities, is a question we will return to momentarily. Khar'kov had around 250,000 inhabitants and approximately 17,000 factory workers in 1913. Metalworking was the dominant sector, employing more than two-fifths of the industrial workforce. But the role of factory workers amongst the total population was only about 7 percent, and thus more in keeping with the provincial scene we have already described.

Industrialism had arrived in many provincial centres by the eve of the Great War. But it is apparent that some Russian towns, perhaps most notably Kiev and Odessa amongst those considered here, had undergone considerable population growth without having become factory towns the way Riga, St. Petersburg, Moscow, Kazan', Tula, Baku, and Ivanovo-Voznesensk as an extreme case, might be said to have done. As noted earlier, industrialization was a catalyst in the process of urban-economic development-- it helped to set change in motion. No doubt the differential impact of industrialization was reflected in the composition of the population according to social strata, male-female ratios, family formation and the inculcation of a working class culture where urban residence had a measure of permanence, to cite but a few likely consequences. We will now introduce some census data which might serve to give some clues as to the social strata and sex ratio consequences of industrialization in provincial Russia.

SOCIAL STRATA AND SEX RATIOS

To examine the relationship between industrialization, rapid urbanization and the social strata (*sosloviye*) and sex ratio characteristics of the provincial city it is necessary to have a common ref-

erence point. The 1897 national census will serve this purpose. While 106 one-day censuses were conducted in 69 cities during the late imperial era, not all were published, and most of those available pertain to different years.[19] However, a number of them can be used in combination with the 1897 enumeration in order to provide some sense of the tempo and direction of change. There is, of course, a wealth of other descriptive statistical material for many provincial towns, but whenever possible census data will be used.

The fact that peasants came to comprise an ever larger share of the populations of St. Petersburg and Moscow during the quarter century before the Great War has long been known. It is usually acknowledged as an important consequence of the rapid urban-industrialization of the Empire's two largest cities. In both cities peasants accounted for nearly three-quarters of the total population in 1914. In 1897 the peasant presence was already well established as the figures in Table 4 indicate. But the data in Table 4 also reveal that the Empire's two largest cities had a much higher proportion of peasants than was common in the second and third order centres. Riga, Kazan' and Khar'kov each had about one-half of their population assigned to the peasant *sosloviye* and thus most closely paralleled the St. Petersburg-Moscow model. Generally speaking, however, for the second and third level urban centres there were fewer peasants and more *meshchane* than in the Empire's two largest cities. The *meshchane* traditionally defined that "middling sort of people" who had emerged from the shake-up of the guild system initiated by Catherine II in 1785. At the time it included all those who did not possess sufficient capital to be assigned to the merchant class. Over the years the *meshchane* had come to be characterized by, amongst others, domestic servants, a variety of working class groups, a few professionals, the occasional successful, indeed per-

haps even wealthy, entrepreneur. In the latter case the customary course of action was to somehow acquire the status of merchant. On balance, the *meshchane* had served as a vehicle for the upward mobility of substantial numbers of the peasantry. Of course, at no time were the *sosloviya* really accurate measures of social status or economic position. But while acknowledging their deficiencies in this regard, it might be said that to belong to the *meshchane* still implied a social status a notch above the peasantry. Having said that it should also be noted that to have such status was still to be well below the other *sosloviya* listed in Table 4.

With the exception of Omsk all of the first, second and third level centres listed in Table 4 had between 80 and 88 percent of their populations assigned to the peasant and *meshchane sosloviya*.[20] The higher proportion of *meshchane* in some second and third level centres may reflect a number of things, including a lower level of industrialization. In those second and third level centres in which industrial employment did figure relatively prominently as a share of total population in 1913, (i.e. Riga, Kazan' and Khar'kov) there was a higher proportion of peasants and a lower share of *meshchane* in 1897. Tula is interesting in this regard, for while certainly industrial in 1913, at the time of the national census it had a larger share of its population in the *meshchane* than was typical of the other industrial second and third order centres or in the Empire's two largest cities. While there was a reasonable consistency in the share of merchants, and to a lesser extent in the share of honoured citizens, in our selection of cities, the same cannot be said about the nobility (personal and hereditary). As Table 4 indicates, there was considerable variation and Omsk topped the list with nearly 14 percent of its 37,000 inhabitants belonging to the nobility in 1897. It was partly because of the unusually large

Table 4: Percent of the Total Population by City Selected *Sosloviya*, 1897

CITY/POPULATION	PEASANT	NOBLE[1]	MERCHANT	*MESHCHANE*	HONOURED CITIZEN
LEVEL 1 CENTRES					
Petersburg/ 1.256M	59.0	9.1	1.4	21.3	1.8
Moscow/ 1.039M	63.7	5.6	1.9	22.0	2.1
LEVEL 2 CENTRES					
Kiev/ .248M	39.2	12.7	2.0	39.5	2.0
Odessa/ .404M	27.1	5.5	1.2	57.6	1.1
Riga/ .282M	50.0	4.2	1.5	38.8	1.2
LEVEL 3 CENTRES					
Kazan'/ .130M	52.8	8.9	1.8	30.8	1.6
Omsk/ .037M	35.7	13.8	1.3	37.3	.9
Vil'na/ .155M	27.0	12.5	1.1	56.2	.7
Khar'kov/ .174M	48.9	9.6	2.1	33.7	2.1
Orenburg/ .072M	25.7	8.0	1.2	55.0	.9
Baku/ .112M	40.0	5.8	2.1	41.0	.7
Tula/ .115M	41.1	5.0	1.2	47.6	2.1

(1) Includes Hereditary and Personal Nobility.

Source: *Pervaya Vseobshchaya Perepis' Naseleniya Rossiiskoy Imperii 1897g.* (St. Petersburg, 1903-5), Vols. 4, 13, 16, 21, 24, 28, 37, 44, 46, 47, 61, 81.

proportion of nobles that Omsk was something of an anomaly in respect to its combined share of peasants and *meshchane*. It was contended that Omsk was a reasonable place to pass one's retirement years as the cost of living was low. This may well account for at least a portion of the resident nobility, many being pensioned army personnel from the local garrison.[21] In sum, in 1897, level three provincial

centres were in general characterized by more gentry per capita than the cities comprising the first and second levels of the urban hierarchy. Clearly this characteristic had some potential social class consequences.

Given the tendency for provincial towns to have a larger proportion of their populations in the *meshchane* and nobility, and a smaller share in the peasant *sosloviye*, than was the case for Moscow and St. Petersburg, there is some basis for supposing that these features may have had demographic consequences. After all, in the late nineteenth century peasants predominated amongst migrants and most were males between the ages of 20 and 40. It might be assumed therefore that the predominance of males which characterized St. Petersburg and Moscow would be muted somewhat in the provincial town where the more urban oriented *meshchane* characteristically commanded a larger relative share of the total population than the peasantry.

As the data in Table 5 indicate, some level three centres did register a smaller share of males than Moscow or St. Petersburg. But of course we are only considering a sample of provincial centres, and amongst these were some exceptional cases. Baku especially stands apart in terms of the predominance of males, reflecting in large measure the nature of its industrial structure. The oil industry was largely a male preserve and most married workers left their families in the village.[22] Only Riga comes close to the typical model for Europe and North America in which females were dominant amongst urbanites. In Paris, Berlin and London in 1880s, for instance, males accounted for only 49.7, 48.4 and 47.1 percent of the populations respectively.[23] Ravenstein long ago documented the greater proclivity of females to migrate to nearby towns in search of employment.[24] In late nineteenth century Russia this phenomenon had not yet taken firm root; nonetheless, it was certain-

Table 5: Percent Male of Total Population, 1897

	CITY	PERCENT MALE
LEVEL 1 CENTRES	St. Petersburg	54.6
	Moscow	57.0
LEVEL 2 CENTRES	Kiev	54.5
	Odessa	53.7
	Riga	50.8
LEVEL 3 CENTRES	Kazan'	53.8
	Omsk	53.7
	Vil'na	51.2
	Khar'kov	53.0
	Orenburg	52.0
	Baku	59.8
	Tula	54.6

Source: *Pervaya Vseobshchaya Perepis' Naseleniya Rossiiskoy Imperii 1897g.* (St. Petersburg, 1903-5), Vols. 4, 13, 16, 21, 24, 28, 37, 44, 46, 47, 61, 81.

ly a well established pattern for St. Petersburg by World War I.[25] On the basis of the data drawn from the 1897 census and presented in Tables 4 and 5, however, there is no clear relationship between the composition of the population of the provincial town according to *sosloviya* and its male-female ratio. It would be of value to have some notion as to trends over time. Fortunately, for a few provincial centres one-day censuses are available and these can be used to shed some light on this question.

In 1897 51.2 percent of Vil'na's population was male. But nearly 30 years earlier females were predominant. In 1869 males accounted for 46.1 percent of the 62,576 inhabitants; in 1872, 50.9 percent of the 73,913 population; and in 1875, 51 percent of the

82,668 inhabitants were male, a level presumably more or less constant over the ensuing quarter century.[26] Omsk had a slightly larger proportion of males than Vil'na in 1897 (Table 5), but interestingly this was a smaller share than in 1877 when the population was enumerated. At that date slightly more than 56 percent of the 24,818 residents were male.[27] In this instance the steady increase in the share of females echoed the pattern in Moscow and St. Petersburg in the years down to the Great War. In Orenburg the trend was the same. In 1875 males comprised 55.6 percent of the 42,123 inhabitants, a larger share than in 1897 (Table 5).[28] There is a longer series of censuses of Khar'kov, and it too follows this trend. In 1866, 54.1 percent were male; in 1879 the share had increased slighty to 54.3, but by 1897 it was 53.0 and by 1912 was down to 52.5.[29] To be sure the inhabitants of Khar'kov on the eve of World War I were still predominantly male, but the share of women was slowly increasing. Even in Baku the same process was underway. Between 1897 and the one-day census of October 1903 the proportion of males in that city actually increased from the already unusually high level of 59.8 percent to 61.9; but by 1913 it was down to 56 percent.[30] As we have noted earlier, the particular character of Baku's industrial base with its heavy emphasis on the petroleum sector and related manufacturing was no doubt a factor in the continuing predominance of males. In general the shift in the balance between males and females in the provincial town was beginning to occur, even if for Russia as a whole the trends evident in European and North American cities were yet far from fully replicated.

TRANSIENCE

In this part of the paper we will be analyzing various facets of urban growth, and notably the movement of people to and within the selected urban centres in our simplified model of the urban hierarchy. Our objective will be to shed some light on the questions of who came, how long did they stay, and with what consequences for the urban growth process?

For Moscow and St. Petersburg it is clear that the bulk of migrants were peasants, and there is no compelling reason to think that this pattern would not have found expression elsewhere in urban Russia.[31] Yet as we have already noted, upon examination of the distribution of population in the provincial town according to *sosloviya* there were some interesting differences. Given the historic link between the peasantry and transience in the Russian city, there is reason to suppose that having relatively fewer peasants and more *meshchane* and nobility, the provincial centres might have been characterized by less transient behaviour than Moscow and St. Petersburg. In addition, in most level two and three centres there were more women than in the Empire's two first order cities. This might be assumed to have had some impact on the urban growth process. Specifically, with a presumably more stable population, and all that is implied thereby in terms of family formation, natural increase may have made a more important contribution to annual population growth than was characteristic in the case of St. Petersburg and Moscow. We need first of all to briefly outline the general dimensions of transience and the urban growth process for these latter cities and then proceed to determine the differences, if any, between the pattern there and in the provincial towns.

Transience amongst St. Petersburg's inhabitants had been of sizeable dimensions for a long time.

Table 6: Seasonal Population Change in St. Petersburg

Date of Enumeration	City Population	Suburban *Prigorode* Population	Total Population
June 15 1888	727,223	108,872	836,095
December 15 1888	902,023	76,286	978,309
July 15 1889	719,052	114,332	833,384
December 15 1889	924,466	79,213	1,003,679
July 15 1890	731,336	116,244	847,580

Source: "Pyatoye Ischisleniye Naseleniye S. Peterburga 15 Iyulya 1890", *Statisticheskiy Yezhegodnik S. Peterburga* (1890), 27.

During the early nineteenth century, for example, the occasional and no doubt indifferently accurate enumerations indicated that the city's population during the summer was sometimes smaller than in the preceding winter.[32] But it was not until the late 1880s when more accurate summer and winter censuses were administered by the police that the real dimensions of transience amongst the population began to be fully appreciated. As the data in Table 6 reveal, there were indeed marked seasonal variations in the total population. City and suburbs both changed, but in the opposite direction. For instance, between December 1889 and July 1890 there was a net out-migration of 193,130 people from the city. The suburbs on the other hand registered an increase of 37,031 in the same period. Very little of this growth was attributable to natural increase.[33] Thus, St. Petersburg including suburbs, "lost" about one-sixth of its population between the winter of 1889 and the summer of 1890. And we are here only referring to the net migration balance. The absolute number of

people moving into and out of the city during this seven month period was obviously much greater. Substantial numbers of factory workers departed each spring for the village, sizeable numbers of gentry returned to the estate for the summer, and a growing number of the social elite and nascent middle class departed for a *dacha* in the environs of St. Petersburg; indeed, in the environs of most major European Russian cities the coming of the railway had greatly facilitated this particular form of seasonal exodus.[34] Still others migrated to the city during the summer in search of work. Large numbers of peasant tradesmen found employment in the construction industry; unskilled peasant workers laboured in the docks, on street repair gangs and so on.[35] No doubt many people came to the city with the intention of staying permanently; considerable numbers it would seem departed with the intention not to return. While the reasons for the different patterns of movement to and from the city varied, the net result was the same--the urban population was highly transient.

The numerous censuses of St. Petersburg allow some additional observations on the general dimensions of transience in the early 1900s. About 68 percent of St. Petersburg's 1,439 million inhabitants in 1900 had been born elsewhere. Ten years later the population exceeded 1.9 million people, but the proportion of migrants was virtually unchanged. While the proportion of the total population born outside St. Petersburg was stable, the constituents of the migrant population were not. For example, the total number of migrants who, in 1900, had lived in the city for five years or less totalled approximately 415,000. This group appears in the 1910 enumeration in the 11 to 15 years resident in the city category. The number was then about 143,600. In other words, about 65 percent of this group had apparently left the city or died during this ten year period.[36] It is unlikely that a very great many died. Since pea-

sants comprised nearly 69 percent of the total population in 1910 it is probable that they were the principal element in the apparent exodus. Indeed, as Figure 2 indicates over 400,000 peasants had been resident in the capital for only five years or less. And over 160,000 had lived there just one year or less. By comparing the length of residence categories for peasants in the 1900 and 1910 censuses some further insights into the rate of turnover for this particular estate are forthcoming. In 1900, 325,400 peasants had lived in St. Petersburg five years or less. In 1910, the number in the 11 to 15 year resident category had dropped to 115,300.[37] As for the migrant population as a whole, about 65 percent had departed or died during the intervening decade. Amongst the *meshchane* who in 1910 comprised approximately 16 percent of the total population, a somewhat smaller share (58 percent) had left or died.[38] Proportionately more *meshchane* than peasants were locally born, but as Figure 2 reveals, a substantial number had only lived in St. Petersburg for one year or less.

In short, the information we are able to derive from the census clearly indicates that St. Petersburg's population was indeed volatile. Figures for the peasant estate are probably broadly representative of the turnover rates amongst the working class. Still, it should be noted that many peasants were city born and amongst the migrant population a growing number were permanently settled, and to a growing extent urbanized. But it is equally clear that the ties with the village remained strong for many peasants, that countryside customs and values had not been entirely erased.[39]

The trends in Moscow, as derived from census data are essentially corroborative of the St. Petersburg pattern. The 1902 census reveals that just over 72 percent of the 1.1 million population were migrants. As Figure 3 reveals most succinctly, the

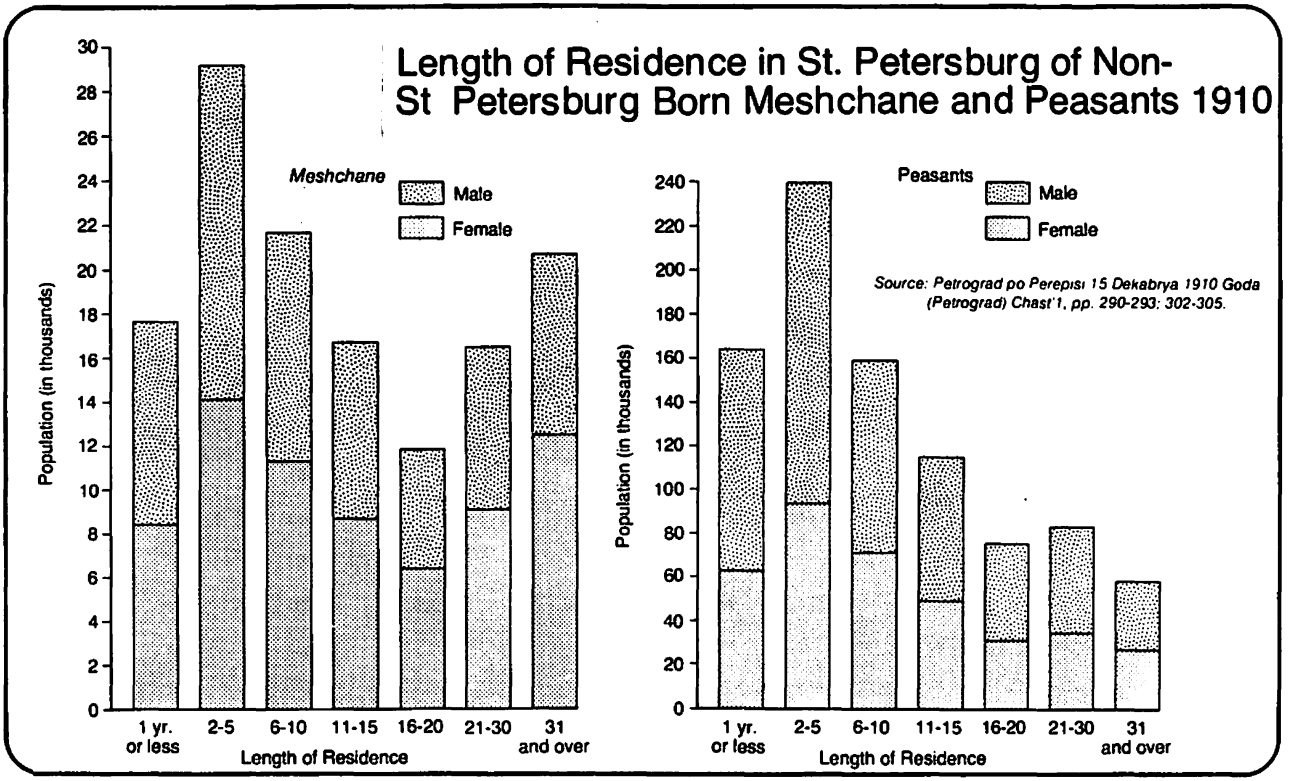
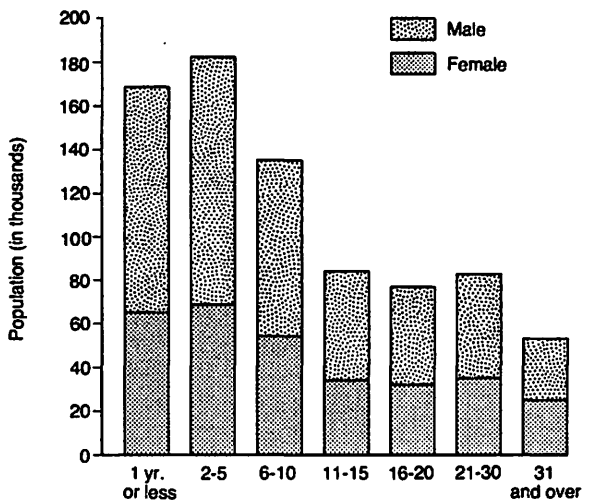

Length of Residence in St. Petersburg of Non-St Petersburg Born Meshchane and Peasants 1910
Meshchane
Male
Female
Population (in thousands)
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
1 yr. or less
2-5
6-10
11-15
16-20
21-30
31 and over
Length of Residence
Peasants
Male
Female
Source: Petrograd po Perepisi 15 Dekabrya 1910 Goda (Petrograd) Chast'1, pp. 290-293; 302-305.
Population (in thousands)
240
220
200
180
160
140
120
100
80
60
40
20
0
1 yr. or less
2-5
6-10
11-15
16-20
21-30
31 and over
Length of Residence

Figure 2

Length of Residence in Moscow of all Non-Moscow Born Inhabitants 1902



Source: Perepis' Moskvy 1902 Goda (Moscow, 1904), Chast' I, Naseleniye, pp. 6-7.

Figure 3

Table 7: Patterns of Residence in Moscow and St. Petersburg from Directory Listings

City	Sample Years	Still Resident in the City		Not Listed in Subsequent Directory	
		Number	%	Number	%
Moscow	1910-1913	843	56.3	657	43.7
St. Petersburg	1909-1912	1001	66.8	499	33.2

Source: *Ves' Peterburg na 1909g*. (St. Petersburg, 1909); *Ves' Peterburg na 1912g*. (St. Petersburg, 1912); *Vsya Moskva: Adresnaya i Spravochnaya Kniga na 1910 God* (Moscow, 1910); *Vsya Moskva: Adresnaya i Spravochnaya Kniga na 1913 God* (Moscow, 1913).

bulk were recent arrivals. Of the more then 790,000 people who had been born outside Moscow, more than one-fifth had lived in the city one year or less. Close to one half of the immigrants had lived in Moscow just five years or less, but of course we are here simply inputing personal behaviour from aggregate census data.[40] It would be useful to learn more about how individual members of Moscow and St. Petersburg society behaved in the context of duration of residence. A simple random sample drawn from one city directory and traced in a later edition goes some way toward meeting this objective.[41]

The data presented on Table 7 are based on a sample of 1500 males drawn from the 1909 St. Petersburg directory and traced in the 1912 edition.[42] For Moscow a similar sample was drawn from the 1910 directory and traced in the 1913 edition. One of the most striking features of the data presented in Table 7 is the rather large proportion of the sample populations which could not be traced in the later directory. About a third of the St. Petersburg sample had

apparently departed the city or died during the three-year period. It is unlikely that very many died in such a short time span. It is possible, of course, that some of these seemingly transient individuals were simply omitted from the ensuing directory But this probably would not have been a very large number, for each year witnessed a sizeable increase in the coverage. Indeed, it would seem that being listed was not just growing in popularity but in importance as well, for Moscow and St. Petersburg were fast approaching the two million population mark and for such large centres directories were now an arguably indispensable feature of urban life. The share of the Moscow sample which could not be traced, almost 44 percent, was even larger than St. Petersburg. In short, amongst the ostensibly more stable element of the population, that which was listed in the city directory and which tended to be strongly biased toward the top rather than the bottom of social class hierarchy, transience was an ingrained habit. Moreover, amongst those who could be traced, moves from one residence to another within the city were common. For St. Petersburg and Moscow, about 30 and 24 percent, respectively, of the sample populations had changed address at least once during these three year periods. During the early 1900s, it is evident that the urban growth process was one in which transience of one kind or another had an important role to play. Indeed, for Moscow and St. Petersburg between 1870 and 1914 immigration accounted for more than four-fifths of the total increase in population.

For Riga, Odessa and Kiev, the second order centres as defined in this paper, the pattern was broadly the same. According to the 1892 census of Odessa for example, 55 percent of the total population were migrants; and most were recent arrivals. In later years the share was to increase. Like the St. Petersburg census this one provides information

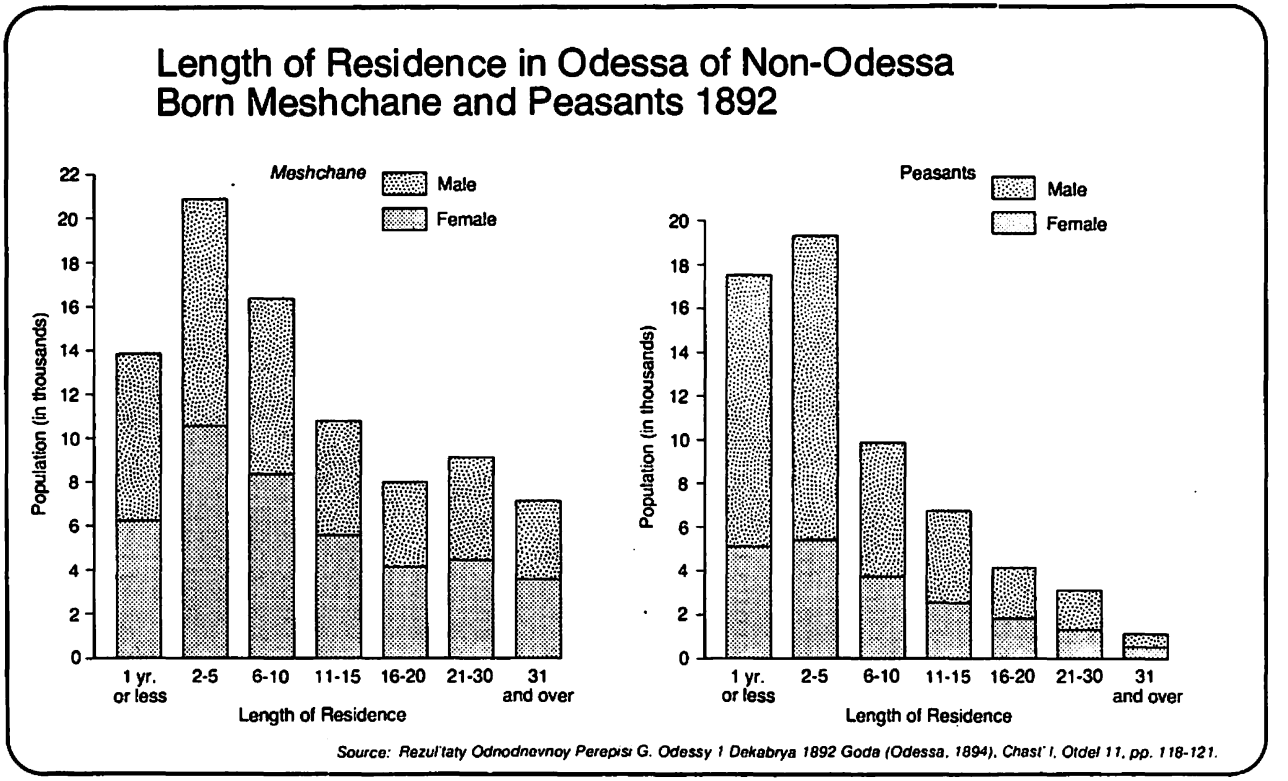

Length of Residence in Odessa of Non-Odessa Born Meshchane and Peasants 1892
Meshchane
Male
Female
Population (in thousands)
22
20
18
16
14
12
10
8
6
4
2
0
1 yr. or less
2-5
6-10
11-15
16-20
21-30
31 and over
Length of Residence
Peasants
Male
Female
Population (in thousands)
20
18
16
14
12
10
8
6
4
2
0
1 yr. or less
2-5
6-10
11-15
16-20
21-30
31 and over
Length of Residence
Source: Rezul'taty Odnodnevnoy Perepisi G. Odessy 1 Dekabrya 1892 Goda (Odessa, 1894), Chast' I, Otdel 11, pp. 118-121.

Figure 4

on length of residence for members of the *meshchane* and peasant *sosloviye* who were not born in the city. The pattern depicted in Figure 4 is not unusual as we have seen already (Figures 2 and 3) and simply amplifies the sense of considerable population turnover. Of the 61,646 migrant peasants, 58 percent had lived in Odessa five years or less, 27 percent one year or less. Even amongst the *meshchane*, 39 percent of the 86,803 who had migrated to Odessa had resided in the city less than five years, 10 percent one year or less. Figure 4 certainly suggests very high levels of turnover in Odessa. And this is again confirmed in a survey of directory data.[43] A sample of 500 males were drawn from *Vsya Odessa* for 1911 and traced in the 1913 edition of the same directory. About 210 individuals, or 42 percent of the sample, could not be located just two years later. A sample of 500 was also drawn from the 1909 edition of *Ves' Kiev* and traced in 1912 version. Again about 42 percent could not be found, though it should be noted that the time span in this instance was three years and not two. Moreover, the people who could be traced were inclined to relocate. In Odessa 20 percent of the sample had moved house at least once. In Kiev about 24 percent had changed address. As in Moscow and St. Petersburg the imputed population turnover rates from data such as these are indeed high. And, as before, urban growth was fed in large measure by immigration during the half century before the Great War. For instance, in Riga in 1913, nearly 65 percent of the population had been born elsewhere, a figure not so markedly different from those registered in Moscow and St. Petersburg around the turn of the century.[44] However, in Riga this relationship over time was far from consistent. In 1867 the pattern was reversed; nearly 65 percent of Riga's population at that time was locally born.[45] Rapid industrialization and the need for labour surely played an important role in this change.

Directories are less useful as guides to population turnover rates in the provincial town because fewer of them were produced and coverage was most probably less consistent than in the Empire's larger centres. However, we have been able to undertake some simple comparisons for a few provincial towns. A sample of 215 males drawn from *Ves' Khar'kov* in 1912 and traced in the 1914 edition again suggests considerable volatility in population.[46] Forty-one were still at the same address just two years later, 34 had moved at least once, but 140 could not be traced. The latter group represents 65 percent of the sample and is therefore rather higher than was common for the level one and two cities discussed above. The reliability of such data is perhaps a moot point, but the general impression conveyed by a variety of sources is that the provincial scene was also characterized by considerable transience.

Property owners in the provincial town would likely demonstrate less proclivity for transient behaviour than the population in general, or for that matter the individuals listed in the directory who were not property owners. For the city of Omsk we have examined the lists of property owners on particular streets included in *Ves' Omsk* in 1911 and then traced these individuals in the 1912 edition of the directory.[47] The streets concerned were Skorbyashchenskaya and Myasnitskaya. The first ran from near the central bazaar to the municipal cemetery; in other words, from the core of the city to the periphery. The second street was located south-east of the city centre and was representative of Omsk's outskirts in 1911. Of the 48 people listed as owning property on Skorbyashchenskaya in 1911, ten could not be traced a year later. Of the 52 people listed as owning real estate on Myasnitskaya, 11 could not be found in the 1912 edition of *Ves' Omsk*. If these patterns are representative of the level of property

transactions and hence, of population turnover, then Omsk was not markedly different from the other cities for which we have provided data. Put simply, the population turnover rate was high. While we have no indication of the value of the real estate involved, it is notable that in the case of Skorbyashchenskaya the incidence of turnover along the street increased from the core of the city to the periphery. Presumably the value of property declined from centre to periphery.

On the basis of the share of *meshchane* and nobility, and the somewhat higher proportion of females, it could be argued that the population of the smaller provincial towns might have been more stable than the larger centres. The contribution of natural increase to population growth might have been more substantial as well. Available evidence on this aspect of population change in the provincial town is interesting. We might begin by considering the dynamics of population growth in Kazan'.

Kazan' was already a city of significant size in the medieval era. As capital of the Kazan' Khanate it was ethnically Tatar, and because of its strategic location served both military and trade purposes. By the mid-sixteenth century, after having been annexed by the expansionist Principality of Muscovy, Kazan' was steadily transformed by an influx of Russians. By the nineteenth century the city's Tatar population was a distinct minority. In 1897, for example, Russians comprised 83 percent of Kazan's population, Tatars about 16.[48] Population increase during the era of rapid urban-industrialization was sizeable. In 1860 Kazan' was home to 59,300 people; by 1914 close to 200,000. Epidemics, however, were frequent and produced exceedingly high and variable death rates. Natural increase was therefore negligible. Population growth was attributable to in-migration and, as the data presented in Table 8 confirm, the pattern was extremely erratic. From 1870 to 1897

Table 8: Population Growth in Kazan', 1870-1897

Year	Total Population	Death Rate per 1000	Natural Increase/ Decrease
1870	86,262	44	-15.6
1871	88,543	46	-11.4
1872	93,221	44	-10.3
1873	93,207	34	-0.7
1874	90,812	36	-0.1
1875	97,304	41	-2.8
1876	111,322	31	-0.8
1877	121,262	36	-6.7
1878	125,135	37	-8.8
1879	134,434	27	-1.2
1880	133,492	32	-4.3
1881	134,696	31	-4.6
1882	136,354	35	-8.9
1883	140,726	29	-0.6
1884	139,791	29	+1.0
1885	138,985	29	+0.9
1886	136,570	28	+1.7
1887	136,086	27	+4.1
1889	135,177	33	-0.3
1890	134,359	34	-2.0
1891	133,359	36	-1.2
1892	125,767	54	-20.0
1893	125,301	36	+0.3
1894	115,540	42	-
1895	118,621	36	+0.9
1896	131,508	32	+3.3
1897	140,696	31	+1.9

Source: M. V. Kazanskiy, *Putevoditel' po Kazani* (Kazan': Tipo-Litografiya Imperatorskogo Universiteta, 1899), 126-127.

there were more years when the total number of deaths exceeded the number of births recorded than vice versa. There is another more fundamental pattern evident in the statistics presented in Table 8. From 140,726 people in 1863 the population of Kazan' actually declined to 115,540 in 1894. Contemporaries observed that for Kazan', and presumably other provincial towns as well, the stability and growth of population was very much influenced by economic conditions.[49] In difficult times-- and the depression which gripped Russian during the 1880s was certainly one such period-- the provincial urban economy seemingly could not sustain the existing population. For Kazan' there is clear evidence of an urban-rural migration. The cholera and typhus epidemics of the early 1890s, especially that of 1892, provided further stimulus to depart Kazan'. For the level one and two centres regular annual increases in population were the rule, fed by in-migration until the demographic transition which, in the case of St. Petersburg and Moscow, took place in the late 1880s.[50] In these five cities, a larger population base, and more mature urban economy, could more easily weather cyclical variations in economic growth. The more who arrived simply augmented local demand. In the provincial town the urban economy was more fragile, and more likely to be influenced by the general economic climate. Just how typical Kazan' was of the provincial Russian scene we do not have space to explore in this paper. Suffice it to say that there is some reason to think that it could well have been quite representative. Migrants to the major urban centres regularly travelled long distances as the areal extent of migration fields for first and second order cities depicted in Figure 5 indicate.[51] As the data presented in Figure 6 for Orenburg in 1875 clearly demonstrate, the typical migrant to the provincial town did not travel such long distances. During economic depression, or through individual choice,

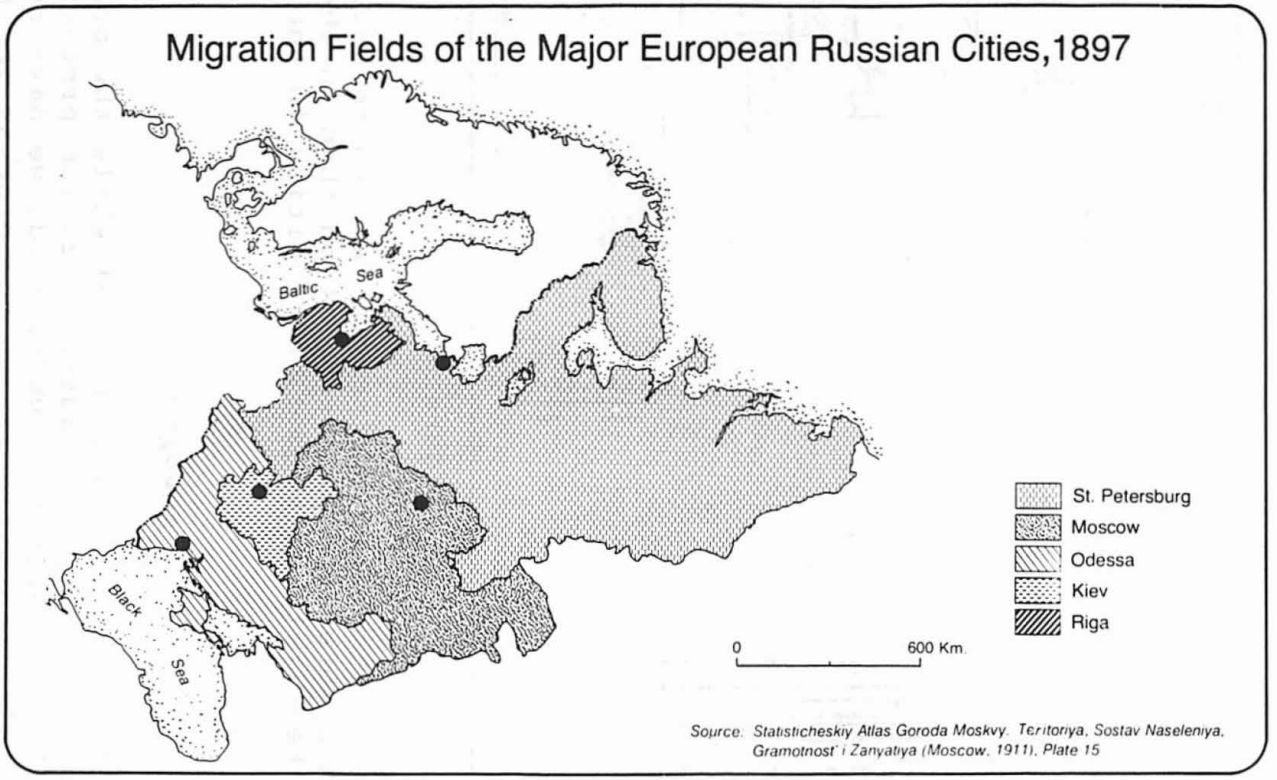

Migration Fields of the Major European Russian Cities,1897
Baltic Sea
Black Sea
St. Petersburg
Moscow
Odessa
Kiev
Riga
0
600 Km.
Source: Statisticheskiy Atlas Goroda Moskvy. Territoriya, Sostav Naseleniya, Gramotnost' i Zanyatiya (Moscow, 1911), Plate 15

Figure 5

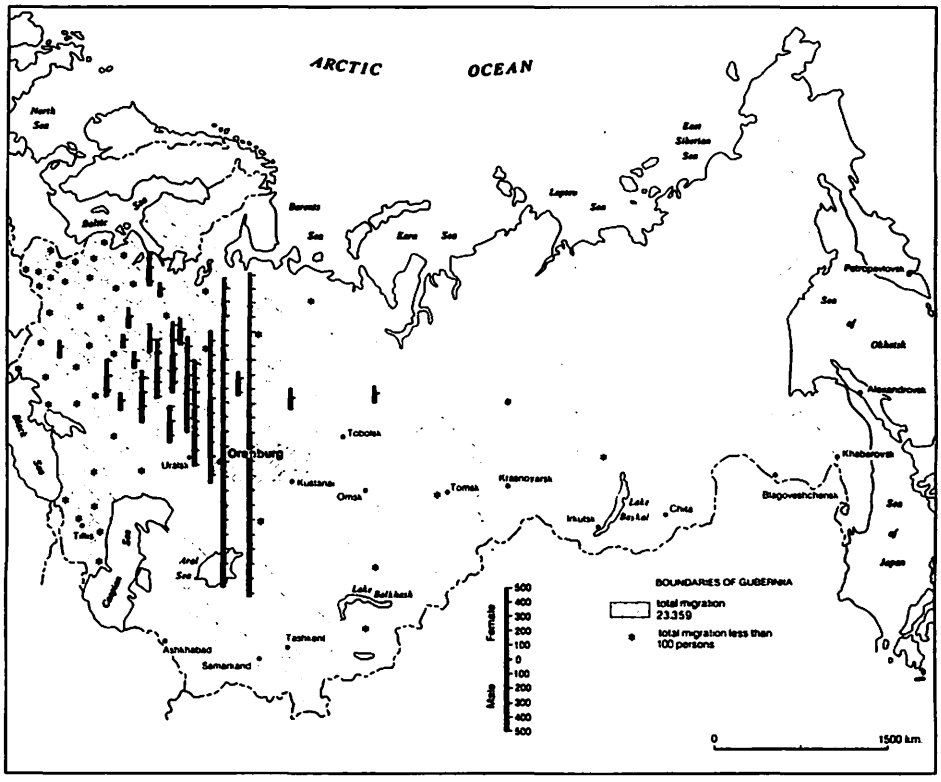


Figure 6

reverse migration from the provincial centre would have been a more feasible proposition than in the case of the first and second order cities in the Empire.

SUMMARY

We began this paper by arguing that while the broad dimensions of the urban industrialization process in Russia are reasonably well understood, we have relatively little information about the process in the

context of provincial Russia. It is important that we gain a fuller appreciation of the nature of this process outside the Empire's major urban centres. As Alfred Rieber's recent study has emphasized, there were differences in attitudes and actions, and consequential ones at that, between the various mercantile elites in the peripheral regions and those of the European Russian core of the Empire.[32] The contrast between core and periphery is no doubt of significance in a variety of other ways as well. In this paper we have endeavoured to draw attention to some potentially important dimensions of urban-industrialization in terms of city size, population characteristics, and location.

In terms of the three themes singled out for investigation, it is apparent that the impact of industrialization varied markedly. This was to be expected. But the precise nature of the link between industrialization and urban growth in the provincial Russian town certainly requires more study. So, too, does the relationship between the particular configuration of social strata and demographic change. In general, the provincial centre had fewer peasants, more *meshchane*, nobility and women of all *sosloviya*. But the hypothesis that these figures might have lent a greater degree of stability to the provincial town's population, and might have contributed to natural population increase, is not supported by the cases considered here. Indeed, the evidence presented is consistent in suggesting the opposite; namely, that the provincial economy was especially fragile and hence fostered exceedingly high levels of transience and marked absolute population changes. What happened in the smaller urban centres is not unrelated to events in the major cities. There is much yet to be learned about such places, and what we learn could well shed some more light on the process of urban-industrialization and its attendant consequences in late imperial Russia.

NOTES

1. Thomas Fedor, *Patterns of Urban Growth in the Russian Empire During the Nineteenth Century* (Chicago: The University of Chicago, Department of Geography Research Paper No. 163, 1975), Appendix I.

2. See for example James H. Bater, *St. Petersburg, Industrialization and Change* (London: Edward Arnold, 1976); Robert E. Johnson, *Peasant and Proletarian: The Working Class of Moscow in the Late Nineteenth Century* (New Brunswick, NJ: Rutgers University Press, 1979). Diane Koenker, *Moscow Workers and the 1917 Revolution* (Princeton: Princeton University Press, 1981); Laura Engelstein, *Moscow, 1905: Working-class Organization and Political Conflict* (Stanford: Stanford University Press, 1982); Victoria E. Bonnell, *Roots of Rebellion: Workers' Politics and Organizations in St. Petersburg and Moscow, 1900-1914* (Berkeley: University of California Press, 1984); Joseph Bradley, *Muzhik and Moscovite, Urbanization in Late Imperial Russia* (Berkeley: University of California Press, 1985).

3. See, for instance, Fedor, *Patterns of Urban Growth*, xi-xii; Robert A. Lewis and Richard Rowland, "Urbanization in Russia and the USSR: 1897-1966," *Annals of the Association of American Geographers*, LIX (December 1969), 791; Robert A. Lewis and Richard H. Rowland, "A Further Investigation of Urbanization and Industrialization in Pre-Revolutionary Russia," *Professional Geographer*, XXVI, No. 2 (1974), 178-82; Barbara Anderson, *Internal Migration During Modernization in Late Nineteenth Century Russia* (Princeton: Princeton University Press, 1980).

4. Olga Crisp, "Labour and Industrialization in Russia," in Mathias, Peter and M. W. Postan., (eds.),

The Cambridge Economic History of Europe; The Industrial Economies, Capital, Labour and Enterprise. The United States, Japan and Russia (Cambridge: Cambridge University Press, 1978), Vol. VII, Part 2, 372-75.

5. See for instance, James H. Bater, "Transience, Residential Persistence and Mobility in Moscow and St. Petersburg, 1900-1914," *Slavic Review*, 39, No. 2 (1980), 239-54; Robert E. Johnson, "Peasant Migration and the Russian Working Class: Moscow at the End of the Nineteenth Century," *Slavic Review*, 35, No. 4 (1976), 652-64.

6. Keith Beavon, *Central Place Theory* (London: Longman, 1977).

7. Fedor, *Patterns of Urban Growth*, 175.

8. For example, see the discussion in Fedor, *Patterns of Urban Growth*, 7-11; the Ukrainian metallurgical centre, Yuzhovka is a case in point.

9. D. P. Kandaurov, *Fabrichno-Zavodskiye Predpriyatiya Rossiiskoy Imperii (Isklyuchaya Finlyandiyu)* (Petrograd: Sovet S'ezdov Predstaviteley Promyshlennosti i Torgovli, 1914).

10. All individual factory employment data hereafter cited are derived from Kandaurov, *Fabrichno-Zavodskiye*, *passim*, unless otherwise noted.

11. Crisp, "Labour and Industrialization," 365.

12. See the related discussion in Fedor, *Patterns of Urban Growth*, 173-78.

13. Fedor, *Patterns of Urban Growth*, Appendix I. *Perepis' Baku 1913 Goda* (Baku: Izdaniye Statisti-

cheskago Otdela Bakinskoy Gorodskoy Upravy, 1916), Part 3, 3.

14. M. A. Ismailov, *Promyshlennost' Baku v Nachale XX Veka* (Baku: Izdatel'stvo 'Elm', 1976).

15. V. Modestov, "V Kazani i v Kieve," *Istoricheskiye Vestnik*, 22, No. 6 (1885), 324-5.

16. M. K. Yurasova, *Ocherki Istorii Omska* (Omsk: Omskoye Oblastnoye Knizhnoye Izdatel'stvo, 1954), 88.

17. *Revolyutsionnoye Dvizheniye v Omske v Gody Pervoy Russkoy Revolyutsii (Oblastnoye Knizhnoye Izdatel'stvo, 1905-1907). Sbornik Dokumental'nykh Materialov* (Omsk Oblastnoye Knizhnoye Izdatel'stvo, 1957), 8.

18. P. M. Ekzemplyarskiy, *Istoriya Goroda Ivanova* (Ivanova: Ivanovskoye Knizhnoye Izdatel'stvo, 1958), Part 1, 273, 281.

19. A. I. Gozulov, *Istoriya Otechestvennoy Statistiki (Kratkiye Ocherki)* (Moscow: Gosudarstvennoye Statisticheskoye Izdatel'stvo, 1957), 88.

20. *Pervaya Vseobshchaya Perepis' Naseleniya Rossiiskoy Imperii 1897 g.* (St. Petersburg, 1903-5), Vols. 4, 13, 16, 21, 24, 28, 37, 44, 46, 47, 61, 81.

21. A. D. Kolesnikov, "Rost, Soslovnyy Sostav i Zanyatost' Naseleniya Dorevolyutsionnogo Omska", in Vilkov, O. N. (ed.), *Istoriya Gorodov Sibiri Dosovetskogo Perioda* (Novosibirsk: Izdatel'stvo 'Nauka', 1977), 240.

22. S. S. Aliyarov, "Izmenniya s Sostave Rabochikh Baku v Gody Pervoy Mirovoy Voyny", *Istoriya SSSR*, No. 2 (1969), 56; *Baku i Yego Okrestnosti* (Tiflis: Kavkaz, 1891), 89-90.

23. M. Pinegin, *Kazan' v Yeya Proshlom i Nastoyashchem* (St. Petersburg: Izdaniye Knigoprodavstsa A. A. Dubrovina, 1890), 447.

24. E. G. Ravenstein, "The Laws of Migration", *Journal of the Royal Statistical Society*, Vol. 48, Part II, June (1885), 196-8.

25. See Bater, *St. Petersburg*, 305.

26. *Vil'na po Perepisi 18 Aprelya 1875 Goda* (Vil'na: Tipografiya A. Syrkina, 1881), 16.

27. *Materialy po Istorii i Statistike Omska Izvlechennye iz Odnodnevnoy Perepisi 1877 Goda* (Omsk: Tipografiya Akmolinskago Oblastnago Pravleniya, 1880), Part 2, 1.

28. *Odnodnevnaya Perepis' Naseleniya G. Orenburga Proizvedennaya 21 Dekabrya 1875 g.* (Orenburg: Izdaniye Orenburgskago Gubernskago Statisticheskago Komiteta, 1878), 8.

29. *Glavnye Itogi Perepisi Goroda Khar'kova 8 Dekabrya 1912 Goda* (Khar'kov: Trudy Statisticheskago Otdela Khar'kovskoy Gorodskoy Upravy, 1914), 41.

30. *Baku po Perepisi 22 Oktyabrya 1903 Goda* (Baku: Izdaniye Bakinskago Gorodskago Obshchestvennago Upravleniya, 1908), Part 1, Section 2, 1; *Perepis' Baku 1913*, Part 3, 5.

31. See Bater, *St. Petersburg* and Johnson, *Peasant and Proletarian*.

32. A. J. Kopanev, *Naseleniye Peterburga v Pervoy Polovine XIX Veka* (Moscow: Akademiya Nauk, 1947), 15.

33. Bater, *St. Petersburg*, 312.

34. For example, by 1890 there was already a well established network of some 180 *dacha* settlements in the Moscow environs. A substantial share of the 7000 *dachi* or apartments were serviced by special *dacha* trains during the summer months. V. G., "Podmoskovnya Dachi", *Russkiya Vedomosti*, No. 123, May 7, 1890, 3.

35. For discussion of the composition of the seasonal migration of workers, see, "Moskovskiye Vesti", *Russkiya Vedomosti*, No. 71, March 24, 1890, 2-3.

36. *S. Peterburg po Perepisi 15 Dekabrya 1900 Goda* (St. Petersburg: Izdaniye S. Peterburgskagoo Gorodskago Statisticheskago Komiteta, 1903), Vol. 1, Section 1, 32-33; *Petrograd po Perepisi 15 Dekabrya 1910 Goda* (Petrograd, 1914), Part 1, Section 2, 16-23.

37. *Petrograd po Perepisi*, 290-93.

38. *Petrograd po Perepisi*, 302-5.

39. According to the 1910 census 125,000 peasants intended returning to the fields the following summer. *Petrograd po Perepisi*, Part 1, 290. See also, Crisp, "Labour and Industrialization," 364-75.

40. See also A. Lyakhov, "Prirost' Naseleniye Goroda Moskvy v Kontse XIX Veka", *Izvestiya Moskovskoy Gorodskoy Dumy*, No. 2 (1909), 59.

41. See James H. Bater, "The City Directory as a Source for the Study of Urban Development in Modern Russo-Soviet History." Paper presented at the Second World Congress of Soviet and East European Studies, Garmisch, West Germany, October 1980. For discussion of methodology, see Bater, "Transience...," 243-4.

42. More precisely, three samples of 500 were taken and cross-checked for consistency. The procedure involved taking the first full listing for a male at the top of the right-hand column for each of the odd-numbered pages, for each of the even-numbered pages, and for the left hand column for each of the odd-numbered pages, for the St. Petersburg directory. For the Moscow directory, the first full listing for a male at the top left, top right and top of the second column from the left of each page until the sample was complete. The data base may be considered equivalent to a simple random sample since the characteristics observed, that is, presence or absence, are independent of the position of an individual in the directory listing. See William Mendenhall, Lymon Ott, and Richard Schaeffer, *Elementary Survey Sampling* (Belmont, Mass: Wadsworth, 1971), 150-156.

43. Sample was drawn by taking the first full listing of a male from the top right hand column for each page then from the top left hand column until the sample of 500 was obtained in case of *Vsya Odessa. Adresnaya i Spravochnaya Kniga Vsey Odessy s Otdelom Odesskiy Uyezd* (Odessa Izdatel'stvo 'Odesskiya Novosti', 1911). The same procedure was followed in drawing the 500 male sample from *Adresnaya i Spravochnaya Kniga. Ves' Kiev' na 1909 g* (Kiev Izdaniye S. M. Boguslavskago, 1909).

44. See Bater, "Transience."

45. *Perepis' Naseleniye v g. Rige i Rizhskom Patrimonial'nom Okruge ot 5 Dekabrya 1913g.* (Riga: Izdaniye Rizhskoy Gorodskoy Statisticheskoy Komissii, 1914).

46. *Adresno-Spravochnaya Kniga. Ves' Khar'kov na 1912 god* (Khar'kov: Izdaniye E. El'kina, 1911, 1913). See footnote 43 for procedure followed.

47. To facilitate the research process, the streets were selected in such a manner that their entire length would fall within a single borough. *Ves' Omsk. Spravochnik-Ukzatel' na 1911 (1912) god* (Omsk: Izdaniye N. A. Ivanova, 1911, 1912).

48. M. V. Kazanskiy, *Putevoditel' po Kazani* (Kazan': Tipo-Litografiya Imperatorskago Universiteta, 1899) 131.

49. Kazanskiy, *Putevoditel'*, 129.

50. James H. Bater, "Modernization and the Municipality: Moscow and St. Petersburg on the Eve of the Great War", in Bater, James H., and R. A. French (eds.) *Studies in Russian Historical Geography* (London and New York: Academic Press, 1983), Vol. 2, 307.

51. Some additional hypotheses are put forward in Anderson, *Internal Migration During Modernization.*

52. Alfred J. Rieber, *Merchants and Entrepreneurs in Imperial Russia* (Chapel Hill: University of North Carolina Press, 1982).