"Measuring Business Cycles in the Russian Empire"
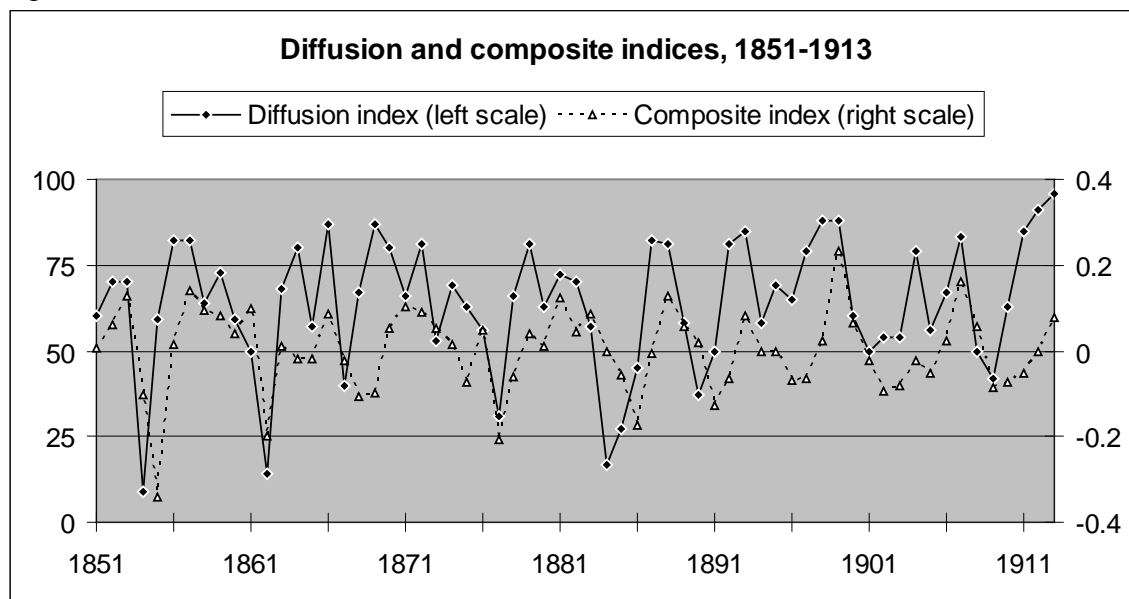
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Abstract

Newly available data on Russian commerce, industry, finance, incorporations, labour, and investment allow a fresh approach to two historical puzzles: the dating of cyclical peaks and troughs in Russia during the six decades before the First World War and the evaluation of theories advanced to explain the causes of these cycles. A diffusion index and a composite index establish the dates and amplitudes of seven complete cycles from 1855 to 1909 and part of an eighth, in 1910–13, interrupted by the First World War. The influence of wars and the Revolution of 1905 on the Russian cycle is clear. A comparison of diffusion indices for Russia and Germany reveals that Russian cycles occasionally diverged from the European pattern in the absence of war and revolution, notably during the industrial boom of the 1890s. The new findings give qualified support to the contention of several Soviet economists in the 1920s that this divergence resulted, at least in part, from the monetary stimulus of exports, primarily of grain.

Tables, figures, and excerpts

Table 1. Incorporations, railroad connections, and banks in ten cities			
City	Incorporations (%)	First major railroad connection	First bank
St. Petersburg	31.3	1851 (Moscow)	1864
Moscow	19.9	1851 (St. Petersburg)	1866
Warsaw	6.6	1862 (St. Petersburg)	1870
Kiev	3.8	1870 (Kursk)	1868
Odessa	3.6	1870 (Balta)	1870
Riga	2.9	1861 (St. Petersburg)	1871
Kharkov	2.0	1869 (Kursk)	1868
Lodz	1.8	1865 (Warsaw)	1872
Baku	1.5	1883 (Batum)	1899
Rostov-on-Don	1.4	1869 (Kharkov)	1871

Notes: Col. 1: 10 most important centres of incorporation, 1700–1913.
Col. 2: % of total incorporations.
Col. 3: year of first railroad connection within the Russian empire (other city in parentheses).
Col. 4: year when the first bank headquartered in the city received its corporate charter.
Sources: Cities and percentages: Owen, *Russian corporate capitalism*, p. 181, tab. 2.3. Railroad connections: Lyashchenko, *History*, pp. 845 (St. Petersburg, Moscow), 847 (Riga), 850 (Baku); Stürmer, *Geschichte*, vol. 1, pp. 198 (Warsaw, Odessa), 199 (Kiev, Kharkov, Rostov-on-Don); Kozianski, *Sieć*, p. 116 (Lodz). Dates of bank charters: Owen, 'RUSCORP'.

Figure 1.

Diffusion and composite indices, 1851-1913

Sources: See app.

| Table 2. Diffusion index (and composite index, in parentheses, if different) of business cycles in the Russian Empire, 1855-1913				
Cycle period	Year of peak	Year of trough	Length in years	Amplitude[a]
1855-62 (1856-62)	1857	1862	8 (7)	82.9 (120.9)
1863-7 (1863-8)	1866	1867 (1868)	5 (6)	54.0 (68.1)
1868-77 (1869-77)	1869 (1871)	1877	10 (9)	64.4 (109.9)
1878-84 (1878-86)	1879 (1881)	1884 (1886)	7 (9)	79.0 (105)
1885-90 (1887-91)	1887 (1888)	1890 (1891)	6 (5)	54.9 (90.4)
1891-1901 (1892-1902)	1899	1901 (1902)	11	43.2 (116.7)
1902-9 (1903-9)	1907	1909	8 (7)	49.4 (88.7)
1910-	- -	- -	- -	- -
Note: [a]In the diffusion index, decline from peak to trough, as a percentage of the datum for the peak; in the composite index, decline from peak to trough, as a percentage of the mean of all seven declines (.282). *Source*: Fig. 1.				

Twenty-seven indicators were used to create the diffusion index and the composite index.

A diffusion index measures expansions and contractions in terms of the percentage of indicators that stood higher in a given year than in the previous year. By definition, a score of 49 or less indicates a decline in a majority of the indicators. A composite index overcomes the shortcoming of the diffusion index by measuring not only the percentage of series that rose or fell but also the magnitude of these changes from year to year.

Figure 2:

Incorporations and total capital, 1851-1913, per capita
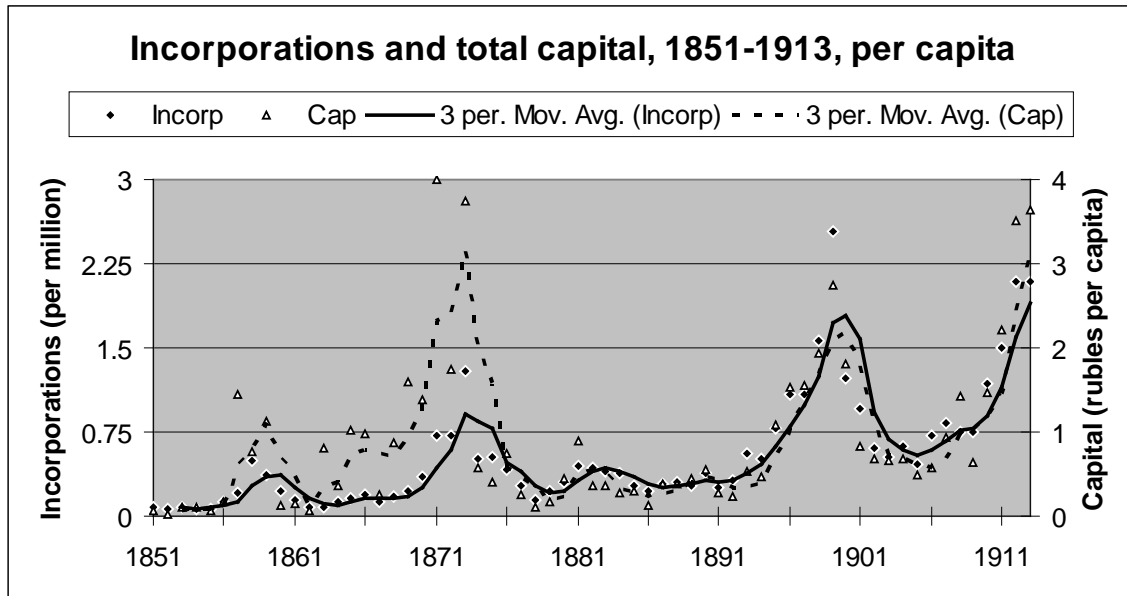
Sources: see text.

Figure 2 does not show fluctuations in real commercial or industrial activity, but it does reveal an important element of the business cycle: the subjective assessment, by prospective corporate founders, of opportunities for productive investment in the near term. Only the first, third, and sixth cycles are clearly defined, though the fourth can also be perceived. This graph supports Pervushin's case for a long depression in the 1880s and a shorter one in 1902–8.

Table 3. Comparisons of German and Russian cycles, 1851-1913						
Cycles				Correlation of German and Russian		
Germany		Russia		diffusion indices		
Period	Peak	Period	Peak	Period	Coefficient	P-value
1849-55	1852					
1856-9	1856	1855-62	1857	1851-60	.28	.2127
1860-6	1863	1863-7	1866	1861-70	-.30	.2008
1867-79	1872	1868-77	1869	1871-80	.21	.2807
1880-6	1880	1878-84	1879	1881-90	.51	.068
1887-92	1890	1885-90	1887	1891-1900	-.02	.4784
1893-1901	1896	1891-1901	1899	1901-13	.67	.0061
1902-8	1907	1902-9	1907			.
Sources: For Germany, Spree, 'Business cycles', pp. 5-6; for Russia, fig. 1 and tab. 2.						

The coefficient of correlation between the two diffusion indices for 1901–13 was statistically significant. Pervushin's main conclusion—that Russian cycles were steadily diverging from European cycles before the First World War—is not supported by the data currently available. Tugan-Baranovskii and his followers were also mistaken in claiming that European and Russian cycles were always in phase.

If this preliminary examination opens the way to research on Russian cycles, ideally with the aid of new data in monthly intervals, it will have served its purpose.