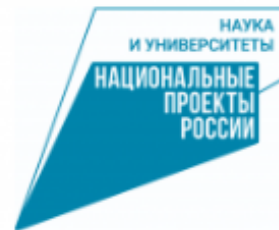




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# Факторы социальной напряженности в регионах Российской империи в конце XIX — начале XX вв.

17 ноября 2023 года

При поддержке гранта, предоставленного Министерством науки и высшего образования Российской Федерации (№ соглашения о предоставлении гранта: 075-15-2022-326 от 25.04.2022)

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РАНХиГС

**Popov, Vladimir and Konchakov, Roman and Didenko, Dmitry Valerievich.**  
**Factors of Social Tension in the Provinces of the Russian Empire in the Late 19th and Early 20th Centuries**  
(September 3, 2023). Available at SSRN: <https://ssrn.com/abstract=4560298>  
or <http://dx.doi.org/10.2139/ssrn.4560298>

The key question of the economic and social post-reform history of Russia (after the agrarian reform of 1861) is what exactly led to the revolutions of the early 20<sup>th</sup> century.

Were these **revolutions a natural result of the growth of social tensions due to the flawed “Prussian path” of the development of capitalism in agriculture** (a combination of large landlords’ estates and small land ownership of the bulk of the peasants)?

Or did Russian capitalism develop successfully on the whole, and the **revolutions were by no means inevitable, but rather caused by random, transient factors (war, political mistakes of the authorities and the opposition, etc.)** ?

Brief overview of these discussions is in Nefedov and Ellman (2016).

This paper aims to contribute to this discussion by analyzing the patterns and causes of **social protest (peasants' unrests, strikes at industrial enterprises, crimes against persons)**.

We compute the **index of inequality of land distribution** for the Russian provinces, and find that the dynamics of social protest before the First Russian Revolution of 1905-07, from the 1890s to the early 1900s, occurred in provinces with the most uneven land distribution.

These were mostly regions in the **periphery of the empire (Lithuania, Poland, Belarus', Ukraine, Novorossiya, Volga, Urals, Siberia, Far East, Caucuses, Central Asia)** that were **colonized in the 16<sup>th</sup>-19<sup>th</sup> centuries and did not have many serfs to begin with**, and where the crown gave huge land areas to the nobility usually as a reward for service.

## АННОТАЦИЯ

We speculate that this could have constituted one of the **unique features of Russian development:**

**It was the only state that experienced such a rapid territorial expansion in the era of serfdom with the result of developing extremely high land distribution inequalities in the new provinces, higher than in other European countries at the same time.**

**These unique inequalities in land distribution could help explain the greater revolutionary activity in Russia even though the income (not land) inequalities seem to have been lower than in other countries in the early 20<sup>th</sup> century and lower than in Russia today (Lindert, Nafziger, 2014).**

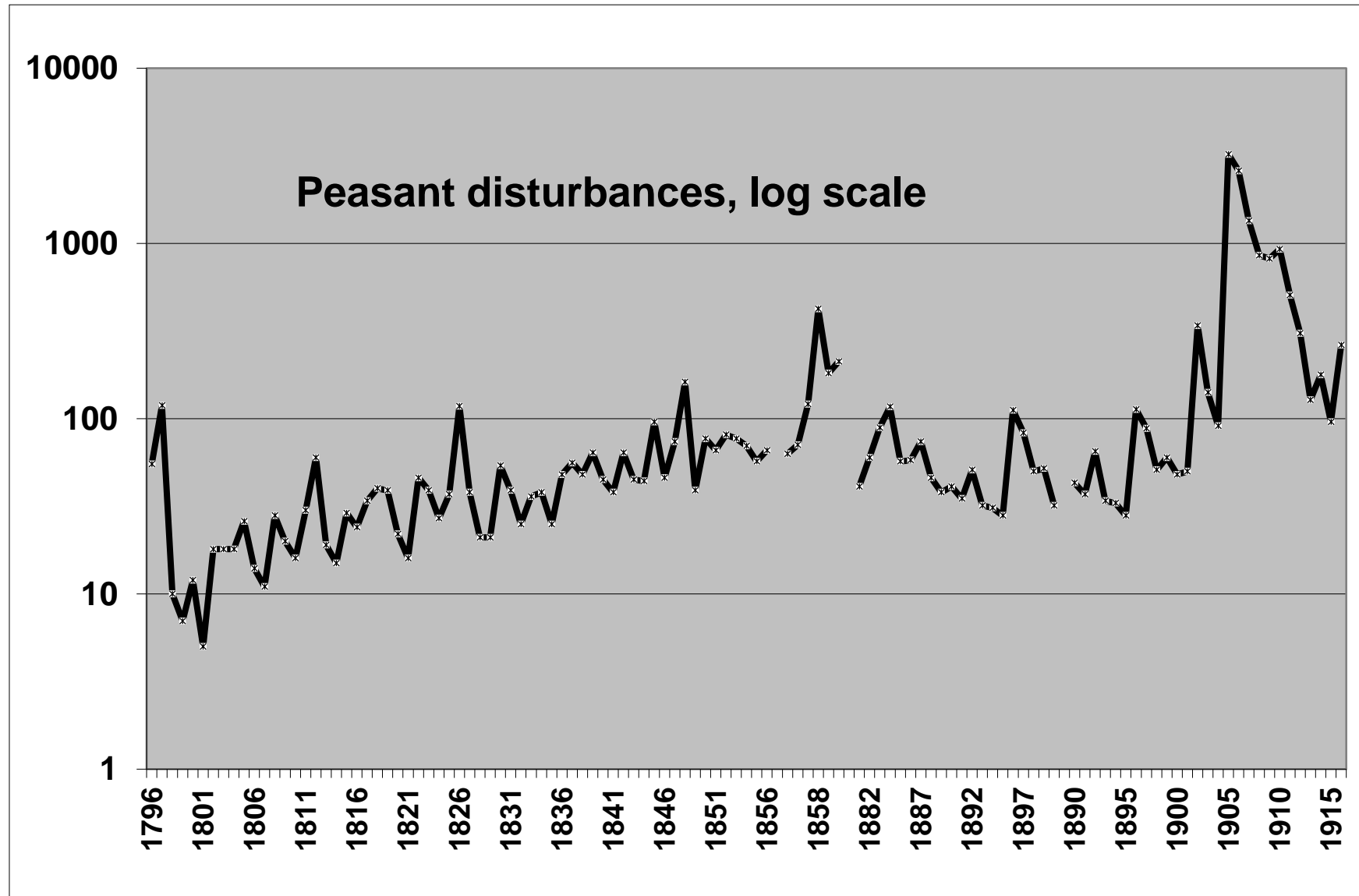
## АННОТАЦИЯ

**We also show that the increase in domestic violence was positively affected by illiteracy and alcohol consumption, whereas for social unrest alcohol consumption did not matter (insignificant) and literacy had either significant positive impact (increase in strikes) or was insignificant (increase in peasants' unrest).**

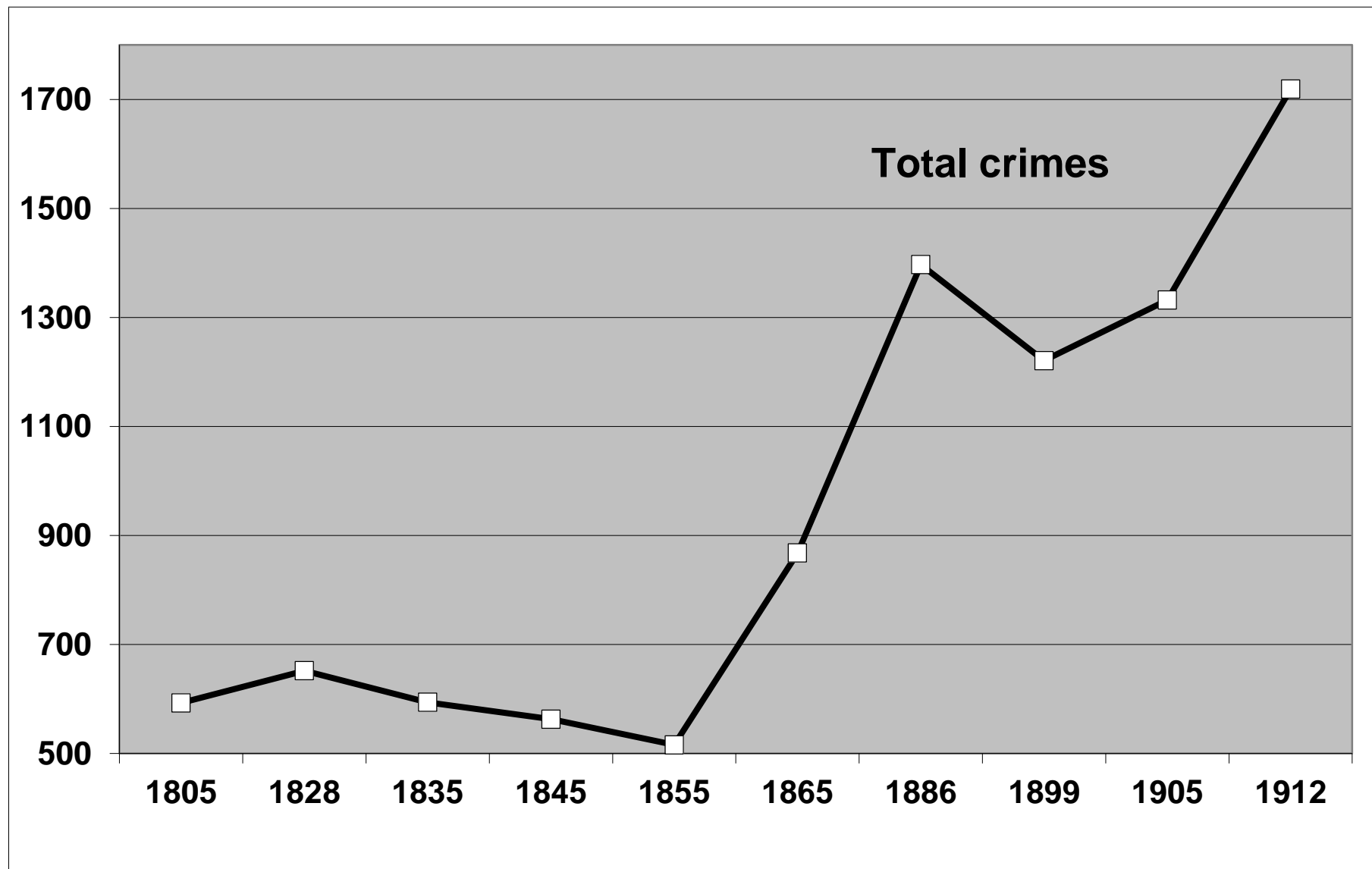
**Success rate of strikes, though, was linked positively with education (literacy rate and the average number of years of schooling) in 1895-99, but in 1900-04 the relationship was negative.**

**In the late 19<sup>th</sup> century strikes were successful mostly in educated regions, whereas in 1900-04 less educated regions became successful in their strikes' activity as well.**

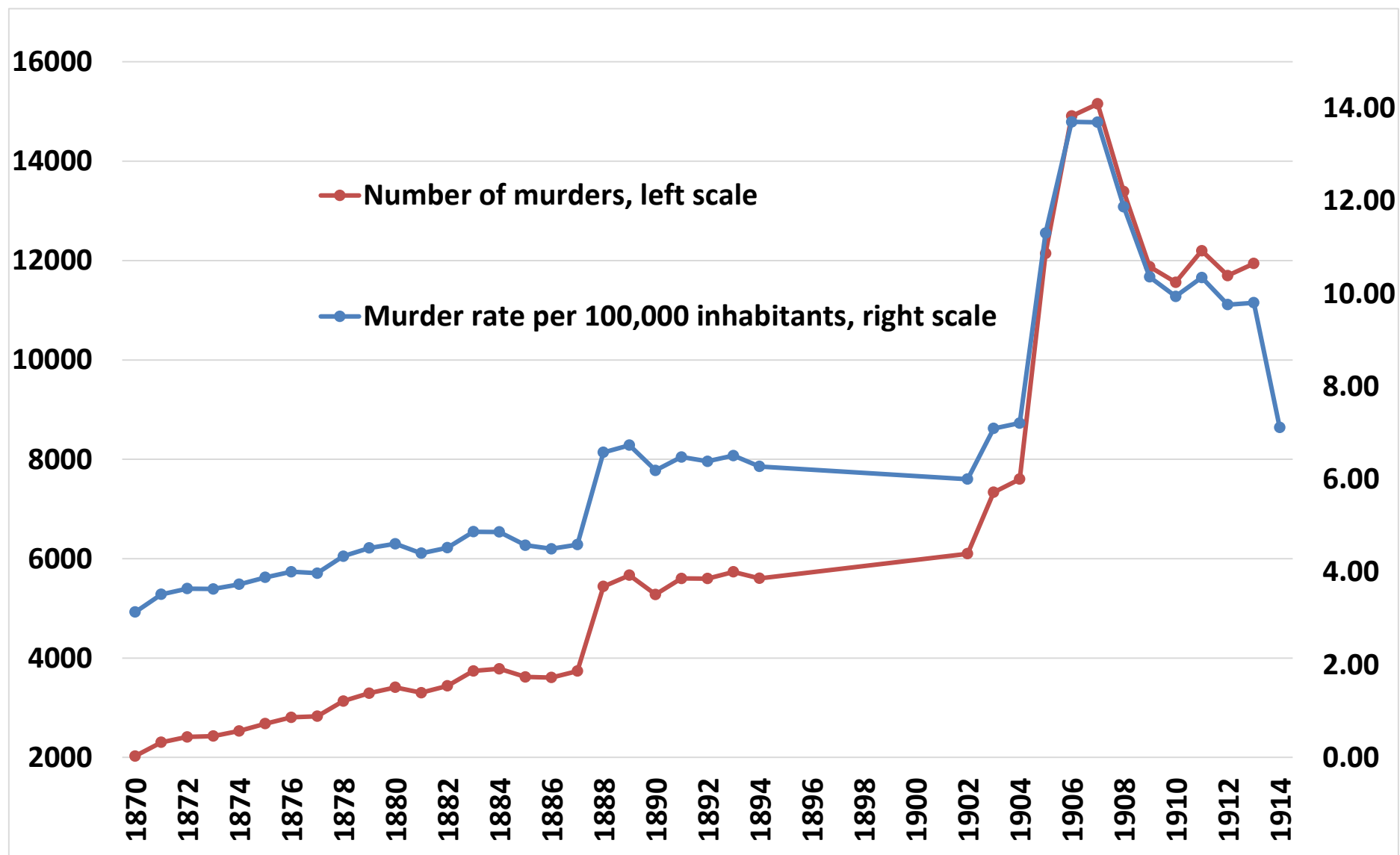
Fig. 1. The number of peasant disturbances and the number of crimes per 100,000 inhabitants per year in 1800-1920



**Fig. 2. The number of peasant disturbances and the number of crimes per 100,000 inhabitants per year in 1800-1920**



**Fig. 3. Murders and murder rate per 100, 000 inhabitants in the Russian Empire in 1870-1914**





The growth of strikes was driven by inequality in land distribution that was the highest in the periphery of the Empire, not in central regions.

In the Central Russia, where the share of serfs in 1858 was the highest, unrest and strike activity before the First Russian Revolution of 1905-07 was limited.

*Votchinas* were divided between the heirs of *boyars* and princes in the historical proper of Russia (Central Region today), so that the size of the land holdings was getting smaller and the concentration of land, as well as inequality in land distribution, declined.

On the contrary, because *dvoryane* since the 16<sup>th</sup> century were getting land holdings mostly in the new and sparsely populated regions of expanding Russian state (Volga, Urals, Siberia, Ukraine and Novorossiya), the large and even huge land estates in these regions became the norm, so the concentration of land and inequality in land distribution became the highest.

The **Orlov brothers**, for instance, after helping Catherine the Great to take the throne in 1762, were given in 1768 the **huge estate on the Volga river** (instead of several smaller estates in Central region) with an area of **over 100,000 dessiatines** and nearly **10, 000 serfs**.

It is noteworthy that anecdotal evidence suggests that the **major peasants' uprisings took place in the periphery of the Empire**, not in the Central regions.

**In 1902 in Kharkov and Poltava governorates up to 40,000 peasants took part in the peasant uprising (from March 7 to April 3, 105 landlords' estates were destroyed, 836 participants sentenced to prison terms).**

**In 1902-03 Saratov governorate became the leader in peasants' protests (Pyotr Stolypin, that later became a prime minister and carried out agricultural reform, was appointed a governor of the Saratov province in February 1903).**

There were 163 peasants protests and 270 cases of arson. **The total damage was estimated at 9.5 million rubles (out of 31 million rubles in 20 provinces, where the protests were most intense). The number two protest damage province was Kursk – Russian southern black soil province.**

**Имение Орловых - ~ 100 000 га = ~1000 кв. км, 10 000 крепостных**

**Люксембург – 2546 кв. км; 600 000 человек**

**Имение Раневской, которое купил внук бывшего крепостного Лопахин («Вишневый сад») – 1100 га**

**В 1938 г. в СССР приходилось:**

- на один совхоз — 2 691 га,
- на один колхоз — 485 га посевной площади.

**( <https://realnoevremya.ru/articles/228161-kolichestvo-i-kachestvo-kak-v-sssr-naraschivali-tempy-proizvodstva> )**

**In 2000 the average size of the farm was (Lowder, Skoet, Raney, 2016).**

- 40 ha in Germany,
- 45 ha in France,
- 178 ha in the USA,
- 273 ha in Canada

## 3 indicators of social tension:

- **Increase in the number of peasants' unrests per 1 million of rural population from 1891-1900 (annual average) to 1901-1904**
- **Indicators of the strike movement – increase in strike rate from 1890-99 (average) to 1900-04 (average),**
  - ✓ **share of working time lost** (in per cent of the total number of working days for 5-year periods – 1895-1899 and 1900-1904).
  - ✓ **effectiveness index** – Assigning codified outcome to each strike: 1 – if successful for strikers, 0 – if unsuccessful, 0.5 – if neutral; then taking average of all of the outcomes.
- **The number of people convicted of crimes against person per 100,000 population – increase in the rate from 1896 to 1912**

# Data: Explanatory variables

- Distribution of the land
  - ✓ Share of landowners' land in total and private land
  - ✓ Concentration of land
  - ✓ Average size of allotments per capita
- Economic and demographic conditions
  - ✓ Population density
  - ✓ Share of rural population
  - ✓ Agricultural yields
  - ✓ Employment in industry
  - ✓ Income inequality (gap in wages of agricultural and factory workers)
  - ✓ Consumption of alcohol per capita (average per year) by urban and rural population
- Institutions
  - ✓ share of serfs in the population in 1858
  - ✓ the ratio of temporarily liable peasants in dues and corvée (after 1861)
  - ✓ incidence of a community with the redistribution of allotment land in 1900
  - ✓ average annual expenditures of local self-government bodies (zemstvo) per capita in 1868-1903
- Technical level – density of railways
- Human capital proxied by level of education in the province
  - ✓ Literacy rate
  - ✓ Average years of schooling

## Official statistical data:

Central Statistical Committee of the Ministry of Internal Affairs (1880-1885, 1907) for land distribution in 1877 and 1905; (1894, 1897) for murders in 1888-93; (1915, 1916) on population, railway stations per 1 km in 1910.  
Ministry of Justice (1900, 1915) for crimes against person in 1912 (*Svod*)  
Ministry of Finance (1903) for pure alcohol consumed in the 1870s, 1880s, 1890s  
Ministry of Agriculture and State Property (1907, 1916) for rural wages in 1903 and 1913  
General Staff (1884, 1921) for provinces area

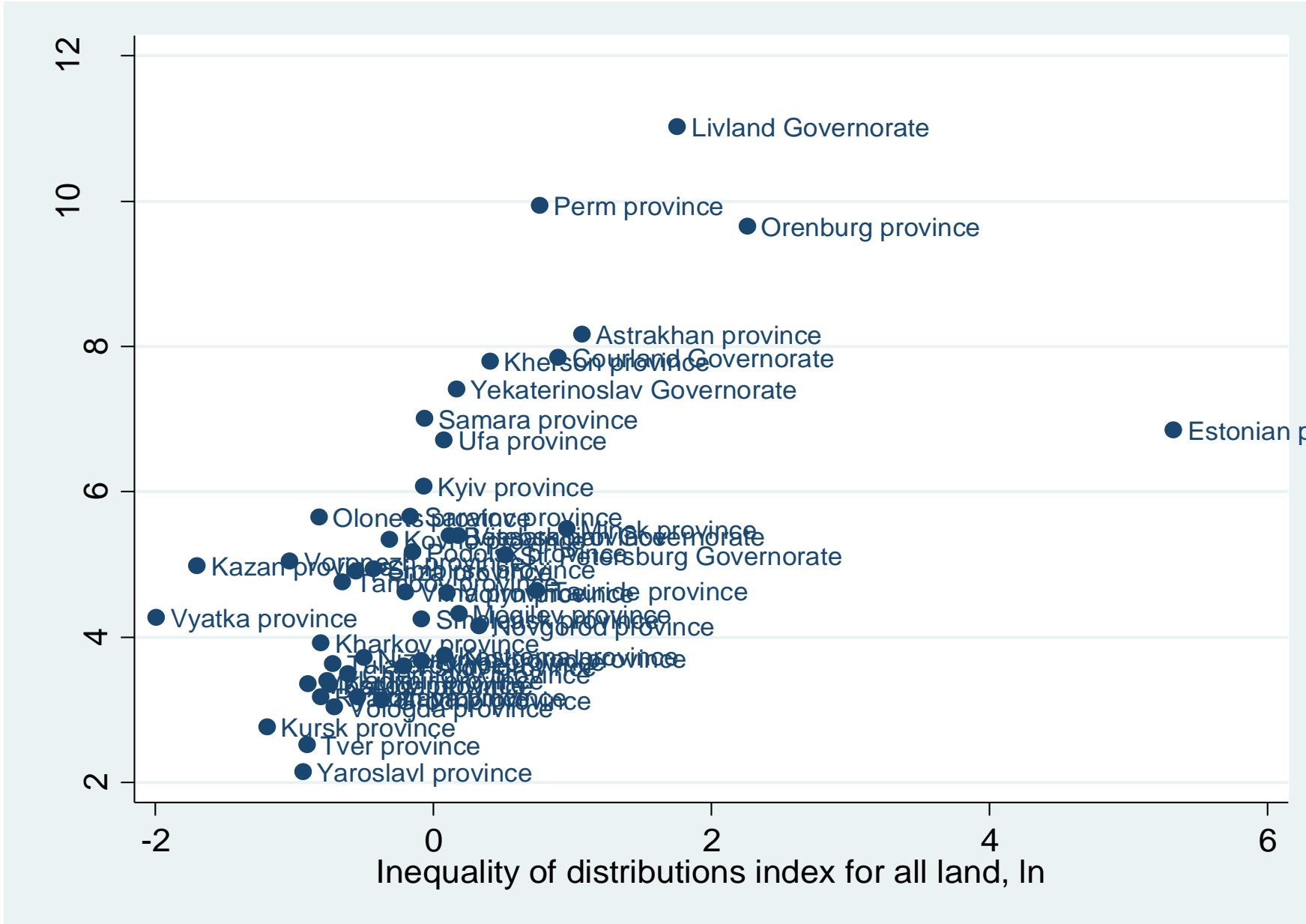
## Electronic data sets:

Borodkin, Shilnikova (2020) for strikes activities, based on the Collection of Reports by Factory Supervisors, 1895-1904 <https://datasets.iisg.amsterdam/dataset.xhtml?persistentId=hdl:10622/LSCGBO>  
Kessler, Markevich (2020) for demographic data from the First General Census of the Russian Empire in 1897 from Troinitskii, ed., 1898-1905) <http://ristat.org>  
Markевич, Zhuravskaya (2018) for institutions, length of railways in 1900 <https://doi.org/10.1257/aer.20160144>

## Other secondary literature:

Anfimov, ed. 1998 peasants' unrests in 1901-1904  
Obukhov (1927) for agricultural yields  
Oleinikova (2021) for crimes against person in 1896 based on provincial governors' reports 1895-1897 (*Obzor*)  
Volkov (2016) for urban wages in 1903 and 1913  
Zhukov et al., 2017 for peasants' unrests in 1891-1900  
Bovykin (1986) for international comparison

Fig. 6. Index of inequality in the distribution of all land and private land in 1877



$$\begin{aligned} \mathbf{LnINEQindex1877} = & 1.7^{**} - 0.02^{***} \mathbf{POPDENS} + .008^{**} \mathbf{GRPcap} \\ & - 7.0^{***} \mathbf{RAILeng1910} - 1.1^{**} \mathbf{COMMdist1900}, \end{aligned}$$



robust standard errors, N=47, R<sup>2</sup> = 0.43. Here and later – standard notations: \*\*\* - significant at 1%, \*\* - 5%, \* - 10%.

***LnINEQindex1877*** – natural logarithm of the index of inequality of distribution of all land in 1877,

***POPDENS*** – density of the population in 1904, number of people per 1 sq. km,  
***GRPcap*** – GRP per capita in 1897, rubles,

***RAILeng1910*** - Engel coefficient in 1910 (density of the railway network). Engel coefficient, E, is equal to the length of railways in the region divided by the square root of a multiple of area and population of the region:  $E = l / \sqrt{S \cdot N}$ , where l is the length of the transport network, km; S is the area of region, thousand km<sup>2</sup>; N is the total population, thousands of people;

***COMMdist1900*** - The existence of a community with redistribution of allotted land in 1900. The community was an equalization institution, hindering the migration of labor from the agricultural sector to the industrial sector.



**The highest private land distribution inequality coefficient (over 500) in 1877 was in:**

**=ethnic provinces of the Empire (Baltics – Courland, Lifland and Estland, Kovno governorates, – Bessarabia, Minsk, Vitebsk, Kiev governorates; no data on Caucuses and Central Asia),**

**= and in the non-ethnic, mostly Russian newly colonized regions in the outskirts of the Empire – in the North, Volga, Urals, Novorossiya regions (Olonets, Astrakhan, Samara, Saratov Ufa, Perm, Orenburg, Ekaterinoslav, Kherson; no data on Siberia and Far East) –**

**And the lowest (below 100) index of the inequality of private land distribution was observed mostly in the Central and close to Central regions of the Empire:**

**= Archangelsk, Vladimir, Vologda, Vyatka, Grodno, Kaluga, Kostroma, Kursk, Mogilev, Moscow, Nizhny Novgorod, Novgorod, Oryol, Poltava, Pskov, Ryazan, Smolensk, Tver, Tula, Kharkov, Yaroslavl.**

**Table 3. Factors of the increase in the rate of peasants' unrests**  
*Dependent variable: Increase in peasants' unrest per 1 million rural population from 1890-99 (average) to 1900-04 (average), robust estimates (standard notations: \*\*\*, \*\*, \* – significant at 1%, 5%, and 10% respectively)*

Equation, N // Indicator	1, N= 26	2, N=26	3, N=25	4, N =26	5, N=26	6, N=25	7, N=19	8, N=19
Index of inequality of all land distribution in 1877, times		.55 ***			.27 ***			
Index of inequality of private land distribution in 1877, times	.0002** *		.0002** *	.0001 *				.0005*
Share of large land holdings of over 500 dessiatines in total private land in 1877, %				5.9 ***	8.3 **	7.6 ***	5.7 ***	4.8 ***
Share of urban population, 1877, %			.03 ***					
The average annual expenditures of local self-government bodies (zemstvo) per capita in 1868-1903, rubles			-2.4 ***					
Average agricultural wage in the 1890s, rubles a day				9.7 ***		15.9 ***	8.7 ***	7.8 ***
Ratio of industrial to agricultural wages in 1903, %				1.1* *	1.1* *			
– Level of self-sufficiency in bread, at the lowest harvest for the 1880s, fraction of 1				1.8 ***	1.6 **	1.6 ***		
Railways length in 1900, km per capita						-.003* *	-.002* *	-.002* *
Ratio of quitrent to corvée peasants after 1861, %						-4.5 ***	-3.4 **	-2.9** **
Increase in man-days lost due to strikes, times							.02 ***	.02 ***
Constant	1.4 ***	1.1 ***	3.6 ***	12.0 ***	-10.9 ***	-11.8 ***	5.3 ***	-4.5 ***
R <sup>2</sup> %	32	38	44	57	58	67	79	81

**Table 4. Factors of the increase in strike activity on the eve of 1905-07 revolution**

*Dependent variable: Man-days lost due to strikes as a percentage of total man-days worked from 1895-99 to 1900-04, robust estimates* (standard notations: \*\*\*, \*\*, \* – significant at 1%, 5%, and 10% respectively)

Equation, N // Indicator	1, N= 37	2, N=36	3, N=37	4, N =19
Man-days lost due to strikes as a percentage of total man-days worked in 1895-99	-23.1 **	-26.3 **	-25.5 **	
Index of inequality of private land distribution in 1877, times		.0007*		
Literacy rate in 1887, %	.67*			
Average number of peasants' unrests in 1900-04 per 1 million rural population	7.0**	6.8**	6.5 **	
Increase in peasants' unrest rate from 1890-99 to 1900-04, times				16.8 **
– Average harvest yield for 10 years, c/ha (year 1907 - the middle of the period)	-20.4 **	-23.7 **	-20.3 **	-24.2 *
Railways length in 1900, km per capita				.06*
Density of railways, Engel's index in 1910		-265.3*	-254.1*	
Constant	121.6 *	178.3 **	155.6 **	127.0 *
R <sup>2</sup> , %	35	39	37	64

**Table 5. Success rate of strikes***Dependent variable – index of acceptance of workers' demands – see footnote 13), robust estimates*

(standard notations: \*\*\*, \*\*, \* – significant at 1%, 5%, and 10% respectively)

Equation, N // Indicator	Index of acceptance of workers' demands in 1895-99			Index of acceptance of workers' demands in 1900-04	
	1, N = 53	2, N = 53	3, N = 37	4, N = 67	5, N = 66
Index of inequality of private land distribution in 1877, times			-.00007 ***		
Literacy rate in 1887, %	.04 (significant at 12%)	.06*	.08**	-.01**	-.02***
Share of urban population in 1897, %		-.06**	-.07*		
Density of railways, Engel's index in 1910					-3.2**
Constant	0.98*	1.23**	1.23**	1.37***	1.6***
R <sup>2</sup> , %	8	13	22	3	6

**Table 6. Factors of the increase in crimes against persons***Dependent variable – increase in the rate (per 100,000 inhabitants) of crimes against persons from 1896 to 1912, robust estimates* (standard notations:

\*\*\*, \*\*, \* – significant at 1%, 5%, and 10% respectively)

Equation, N // Indicator	1, N= 43	2, N=44	3, N=43	4, N =49	5, N=48	6, N=44	7, N=48	8, N=48	9, N=48
Arable land per capita in 1900, dessitines				.08*					
Index of inequality of private land distribution in 1877, times					9.1 e-06*	9.4 e-06*			1 e-05 *
Share of large peasant land holdings (more than 10 dessiatines) in the total land	1.5 ***	1.5 ***		.98 *			1.1**	1.3*	
Share of large peasant land holdings (more than 5 dessiatines) in the total land			1.6 ***						
Share of urban population, 1877, %	.05 ***		.04 ***						
Share of serfs in rural population in 1858, %					-.01 ***	-.01 ***	-.01**	-.01**	-.01 ***
Ratio of quitrent to corvée peasants after 1861, %	1.1**		1.1 ***						
Dummy variable for the community redistribution of land in 1900					.3**		.4**	.3*	
Average harvest yield for 10 years, c/ha (1907 year - the middle of the period)						-.22 ***			-0.2 ***
Railways length in 1900, km per capita		-.0008 *				-.0006 *			
Growth of alcohol consumption per capita from the 1870s to the 1890s, times		2.8 ***		3.3 ***	3.0 ***	3.0 ***	3.2 ***	3.0 ***	3.4 ***
Literacy rate in 1887, %	-.08**	-.03 ***	-.06 ***	-.03 ***	-.03 ***	-.03 ***	-.03 ***	-.02 ***	-.02 ***
Constant	1.7 ***	.08	1.4 ***	-.06*	0.7	2.5 ***	-.3 ***	.08	2.0 ***
R <sup>2</sup> , %	38	39	45	49	51	53	57	58	61

# CONCLUSIONS

**First**, we find that the single most important factor driving the protest activity was **inequality in the land distribution**.

This conclusion passes the **most rigid robustness test of all** – no other variables included into the right-hand side of the equation can eliminate the significance of the indicators of inequality of land distribution.

These **inequalities in land distribution were higher in Russia than in other countries** and could help explain the greater revolutionary activity in Russia even though the income (not land) inequalities seem to have been lower than in other countries in the early 20<sup>th</sup> century and <sup>20<sup>23</sup></sup>lower than in Russia today (Lindert, Nafziger, 2014).

## CONCLUSIONS

**The typical province, where peasant's protests and industrial strikes increased before the First Russian Revolution of 1905-07 was not the Central Russian province, where the share of serfs before Emancipation was high, agricultural yields and incomes were low, the share of large land estates, and especially the share of large private and large peasants' land holdings, was lower than in the outskirts of the Empire.**

**On the contrary, it was a periphery province, where agricultural wages and bread sufficiency were high, industrial wages as compared to agricultural wages were also high, and where inequalities in the land distribution were extremely pronounced; large land ownership (large estates – over 500 *dessiatines*) was high in 1877 (even though was falling by 1905), and the share of large private and peasants' land holding (over 10 and over 5 *dessiatines*) was much higher than in the Central Region.**

## CONCLUSIONS

**Second**, we find that offences against persons (mostly domestic violence) and social unrest (strikes and peasants' protest) were driven by similar factors.

**Economic conditions – inequality in land distribution, income/productivity levels (industrial and agricultural wages, harvest yields), urbanization and density of railway network** are crucial for explaining the dynamics of all indicators of violence and protest before the First Russian Revolution of 1905-07 (from the 1890s to the 1900s).

**Increases in the strike rate** sometimes were not linked directly to the indicators of inequality of land distribution, but they were strongly influenced by peasants' unrest growth.



## CONCLUSIONS

**Third, success rate of strikes was higher in less urbanized regions with lower density of the railways network (once again these were remote regions of the Empire).**

**It was linked positively to education level (literacy rate and the average number of years of schooling) in 1895-99, but in 1900-04 the relationship was negative.**

**In the late 19<sup>th</sup> century strikes were successful mostly in educated regions, whereas in 1900-04 less educated regions became successful in their strike activity as well.**

## CONCLUSIONS

**Fourth**, there is a difference in determinants of **domestic violence** and **social unrest**: the former is positively affected by **illiteracy and alcohol consumption**, whereas for social unrest alcohol consumption does not matter (insignificant) and **literacy has either significant positive impact (increase in strikes) or is insignificant (increase in peasants' unrest)**.

## CONCLUSIONS

**Fifth, quitrent versus corvée indicator is significant in determining both domestic violence and social unrest, but has a different sign. Whereas increase in crimes against persons is higher in regions with greater proliferation on rent payments as opposed to corvée (Central Russia regions that had high share of serfs before the reform), social unrest (increase in strikes and peasants' uprisings) is greater in regions that were not moving to quitrent.**

**This is probably due to the fact that quitrent peasants leaving for the more or less temporary work in the cities alleviated social pressure in both villages (because they earn money elsewhere) and in cities (because they provide additional supply of labor for industry and deteriorate bargaining positions of the workers).**

**But crimes against persons in the provinces with unstable and unrooted active male population migrating from villages to the cities (mostly Central Russian non-black soil regions) increased.**



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