

Migration of Russian settlers and the legacy of intra-regional development in Kazakhstan

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The paper explores the effect of migration of Russian settlers in XVIII-XIX centuries on variance in economic development of regions of Kazakhstan. We use data of 1897 census dataset of the Russian Empire and modern economic data to provide links between the proportion of the Russian population in Kazakhstan at the end of the XIX century and the current level of economic development. Exploiting exogenous geographic and geopolitical sources of variation across twenty-six regions (uyezds) we provide the empirical evidence of positive impact of the migration of Russians in XVIII-XIX centuries on the current level of development. The paper discusses several channels of such influence: human capital formation channel and the Soviet Union industrialization policy.

These days there is a rich and continuously growing literature studying the causal effect of colonization on current level of economic development (Acemoglu et al. 2001, Engerman Sokoloff, 1997, Nann, Wantchelon, 2011, Natkhov, 2015 among others). The colonial period provides an interesting natural experiment in economics, because the migration of settlers from metropolises during this period is related to geographical and climatic factors, which are exogenous by nature. The Russian Empire had a unique pattern of colonization, namely, its expansion from a small Moscow principality into one of the largest empires in the world is comparable in speed and magnitude with the expansion of the British, Spanish and French Empires. However, unlike the European powers, Russia was a continental Empire (like the Habsburg and the Ottoman Empires). Although the influence of colonial era on some parts of the world was described in lots of research papers, the colonial legacy of Central Asia remains relatively unexplored. By aggregating modern data to fit in the former administrative division, we found persisting differences in the most important indicators of economic development. We provide empirical evidence that the Russian migration that happened more than a century ago has a long-lasting effect. There are several reasons why Kazakhstan drew our attention. Firstly, it can be observed from the map of Kazakhstan that major cities are situated peripherally, extremely distant from each other and majority of them were founded during the period of Russian colonialism. Moreover, the level of industrial

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development, concentration of educational organizations and human capital levels vary largely across the country.

Our research proves that two-stage Russian migration into Kazakh steppes was exogenous, i.e. was not based on initial development of these territories and shaped the modern intra-regional divergence in levels of development that persist nowadays. To tackle the apparent problem of endogeneity we use the 3sls (the method of three step least squares), the steps of which are as follows:

$$I. \quad NumRusLit_i = \beta_0 + \beta_1 DistRussia_i + \beta_2 EnemyRes_i + \beta_3 DistRussia_i * EnemyRes_i + \beta_4 logNumIndig_i + \varepsilon_i$$

$$II. \quad ShareRus1897_i = \beta_0 + \beta_1 Num\widehat{RusLit}_i + \beta_2 X_i' + \varepsilon_i$$

$$III. \quad LogIndust2000_i = \beta_0 + \beta_1 Share\widehat{Rus}1897_i + \beta_2 DummyRes_i + \varepsilon_i,$$

where **NumRusLit_i** – a number of literate Russian settlers, **DistRussia_i** – a distance to closest Russian mainland territory, **EnemyRes_i** – a dummy for the presence of enemies or resources, **DistRussia_i * EnemyRes_i** – a intersection of two previous variables, **ShareRus1897_i** – the share of Russian settlers among all population, **Num \widehat{RusLit}_i** – fitted values of **NumRusLit_i** from the first step, **Share $\widehat{Rus}1897_i$** – fitted values of **ShareRus1897_i** from the second step, **LogIndust2000_i** – natural logarithm of industrial product per capita in 2000 (in addition to this, **LogIndust2016_i** was also used as a dependent variable).

The results of our research suggest that our main hypothesis is plausible – the distance to main-land Russian Empire, the presence of enemies and hostile tribes influenced the literacy of the indigenous population and further level human capital accumulation and industrial development through Russian settlement and not through omitted variables. The IV coefficients are significant, which suggests that an increase in proportion of Russian settlers in a district was positively correlated with the level of industrial sophistication in the district after more than a century. With regard to the step-by-step results, firstly, number of literate Russian settlers decreases with distance from Russian mainland but revives considerably wherever there is presence of enemies of resources which supports the idea of sensible rather than random migration of literate Russians. Secondly, share of Russian settlers is better predicted by the instrumented number of literate Russians than by the original data. Finally, the instrumented share of Russian settlers is highly significant and positively correlates with the industrial product per capita in both 2000 and 2016, i.e. the period right after the Soviet Union's collapse (when data became available) and currently, which justifies the persistence of Russian settlers' effect on indigenous people (the regression exploiting uninstrumented variable is, similarly to the previous step, inferior to the one with instrumented variable). The settlement effect had long-term consequences for local development. Districts that had higher shares of Russian settlers in the late nineteenth century today have larger industrial production per

capita, higher educational attainment among the indigenous populations. Overall, the evidence supports the impact of Russian settlement in the Kazakh khanate on long-term development of regions in Kazakhstan during both late nineteenth century and contemporary era. Add to that the logic of the Soviet administration on placement of particular industrial plants and building of infrastructure and you will get a cohesive picture of the Kazakhstan's development pattern.

Finally, we explore several potential mechanisms of influence – school building, social structure and infrastructure. In settled districts, during Soviet era a lot of decisions were made in favor of establishing specialized schools and universities in regions with higher Russian population share due to the greater capacity of the Russian/Soviet state to implement new rules and regulations in the settled districts. This, certainly, affected the process of accumulation of human capital which persisted after USSR's collapse and molded new middle class.

For this reason, Russian colonization of Kazakh lands was an event that changed not only the ethnic composition of the population but also the occupational diversity and industrial structures in the region, resulting in various development paths for districts.

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