Is Regional Policy Effective in the Long Run? Learning from Soviet History.

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Regional inequality has been a pressing issue in many countries, and also between the countries of the European Union. Unequal economic development, where some regions develop successfully and prosper while other regions stagnate, is often viewed as a source of social instability and economic inefficiency. Many kinds of regional policy have been proposed in order to mitigate such a situation by promoting growth in lagging regions. The policies range from subsidies and favorable tax policies for business investment to large-scale government investment projects. The ultimate goal of all regional policies is to create an environment for sustainable growth in regions that have fallen behind. In theory it might appear that a policy, which is implemented during a specific period of time, would be sufficient to achieve sustainable development: subsidies or creation of infrastructure would lure firms into a region and create a favorable environment for economic agents (both firms and people). The temporary policy would create agglomeration externalities that would ensure sustainable development even after the policy is discontinued.

However, are such regional policies in fact successful? Researchers often observe a short-run impact, but it is less clear whether regional policy can make a difference in the long run. From the literature on historical "natural experiments", we know that spatial structures of economic activity are very resilient to temporary impact. For example, the wholesale destruction and loss of life in WWII seems to have had little or no effect on the regional shares of population and manufacturing in the long run. On the other hand, significant and permanent (or long-lasting) changes to market access, such as the division of Germany after WWII, do reshape the spatial economy in the long run.

Our study looks at the long-run patterns of Soviet city growth in light of Stalin's industrialization and WWII. The Soviet government's investment decisions during that period were dictated to a large extent by military strategy and ideology. Massive relocation of productive resources from west to east before, during, and after WWII represents a unique natural experiment, in which production factors were destroyed in some parts of the USSR, while new production facilities and infrastructure were created in other regions of the country. Using a unique dataset, we test whether Gulag camps, wartime evacuation of industry, and location near the war front had a long-run effect on city size.

In the 1930s-1950s, Stalin's system of penal labor camps (the Gulag) was widely used as a source of cheap labor, especially in remote locations where there was no other available labor force. Penal labor was used in a variety of sectors (logging, mining, manufacturing and construction). Presence of a camp near a city or town usually meant that this location was chosen by the Soviet government for an investment project. We trace the impact of having a camp nearby on city growth from 1930 to the present day.

Evacuation of enterprises from western to eastern regions of the USSR (to avoid their possible capture by the advancing German army) is traditionally named among factors that determined post-war growth of cities in the Urals and Siberia. Indeed, data show that the majority of evacuated enterprises never returned to their original location in the western USSR. Western cities that sent enterprises into evacuation often lost their significance in the immediate post-war period. We test whether evacuation affected the growth of cities in the longer run, ceteris paribus.

Unfortunately, no detailed data on deaths and destruction in Soviet cities during WWII are publicly available. We therefore measure the impact of wartime damage by constructing a set of indicators for cities that were occupied or were close to the front line during WWII.

The results show that (controlling for pre-war city size, rate of growth, and geographical location) occupation and location 30 km or 200 km from the front line do have a negative and statistically significant effect on city size by 1959. However, this effect disappears by 1970. This is consistent with findings for Japan and Western Germany, where pre-war trajectories of city growth were restored after 25-30 years.

Surprisingly, the result is roughly the same for cities which hosted evacuated enterprises. Controlling for pre-war size and growth rate, geography and presence of Gulag camps, cities that received evacuated plants grow faster until 1959, but the difference is not statistically significant in 1970 and later. Thus, contrary to the commonly held belief, the effect of evacuation was only temporary.

By contrast, the presence of a Gulag camp increases city size in a long time horizon. Gulag cities grow faster not only in the 1930s-1950s when the Gulag system was operational, but also in the 1970s and 1980s. On average, the Gulag effect only disappears in the 1989 population census.

Specialization of the camp also makes a difference. Effect on city population from a camp where prisoners were involved in agriculture or logging is short-lived. Such camps were not used to build capital or infrastructure, so the nearby cities did not become more attractive for free labour. However, if a city had a camp where prisoners worked in manufacturing, mining, or construction of production facilities or housing, its population increased permanently. Compared with the best match from a control group (a city of similar characteristics, but without a Gulag camp), such a city accrued 50% more population, and this difference remains statistically significant even until the census of 2010.

Overall, the evidence on Soviet city growth supports the common finding: the direct effects of WWII were relatively short-lived. The experience of enterprise evacuation shows that one-shot relocation of production factors by the state also fails to produce robust changes in the geographical redistribution of economic activity in the long run. However, when the Soviet government established new industrial centers in the eastern parts of the USSR, and made massive investments in production facilities and infrastructure using Gulag labor, it managed to permanently shift the geography of economic activity. This example illustrates the size and scope of impact that is required to affect economic geography in the long run.

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