# Leviathan's Shadow: Imperial Legacy of State Capacity and Economic Development in the Kingdom of Yugoslavia

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## Introduction

The importance of state capacity in the process of economic development has been stressed by many scholars in recent years (Dincecco 2017; Johnson and Koyama 2017), but only a few studies have estimated causal effects of certain aspects of state capacity on economic development (Acemoglu, García-Jimeno, and Robinson 2015; Dincecco and Katz 2016; Rogowski et al. 2021; Deng 2021). This is by no means surprising, since the concept of state capacity is as complex as fuzzily defined and, hence, it is even more difficult to quantify. However, singling out specific aspects of state capacity might be misleading and hardly generalizable, since certain state institutions influence economic development positively only within a certain institutional environment (Ogilvie and Carus 2014). Therefore, this study proposes for the first time a design approach to estimate the causal effect of total state capacity on economic development using a novel micro-regional dataset. Furthermore, this dataset and the design approach also allow for identifying potential transmission mechanisms which are severely understudied (Acemoglu, García-Jimeno, and Robinson 2015; Deng 2021).

My study builds on and contributes to the above mentioned literature on the causal effect of state capacity on economic development. As a result, it speaks also to a much broader literature in development economics which stresses the crucial role of state capacity for the East Asian catch-up (e.g. Evans 2012) and the underperformance of African economies (Gennaioli and Rainer 2007; Michalopoulos and Papaioannou 2013). Moreover, this study extends the literature on the Habsburg border effect (Becker et al. 2016) insofar as it relies on fine-grained inter-country variation of GDP per capita. Additionally, it also provides new quantitative material for inter-war Yugoslavia to the literature on the regional development (Rosés and Wolf 2019; Kukić 2020) and regional industrialization (Nikolić 2018; Kukić and Nikolić 2020).

The Kingdom of Yugoslavia is a unique and well-suited case for such an undertaking, since it was founded in 1918 and compiled regions that were either under Habsburg or Ottoman rule for centuries before. This imperial divide serves as a quasi-experiment, because both empires diverged enormously regarding all aspects of state capacity during the 19th century. According to Johnson and Koyama (2017), »state capacity describes the ability of a state to collect taxes, enforce law and order, and provide public goods.« As a result, state capacity shapes the preconditions for modern economic growth. It is uncontroversial that the Habsburg Empire developed a centralized, reliable, and well-trained bureaucracy in the second half of the 18th century, while the Ottoman Empire failed to do so and relied on tax farmers and local elites until its dissolution. This administrative capacity is the backbone for every state, since it determines the other aspects of state capac-

ity especially fiscal capacity. The implementation of the cadastre system in the Habsburg Empire illustrates this quite well: Running a cadastre system required a large number of well-trained civil servants across the empire, since they had to measure the entire territory to map each tract of land and to issue cadastral documents. Given more information about the land tax base, the Habsburg Empire was able to increase its tax revenues massively, while the Ottoman Empire could not keep up (Karaman and Pamuk 2010). Moreover, the cadastre system provided secure and well-defined private property rights. Combined with contract enforcement and liberal reforms (abolition of serfdom in 1848 and guilds in 1859), the Habsburg Empire established a setting of generalized legal institutions which were crucial for economic growth (Ogilvie and Carus 2014). Once the Habsburg fiscal capacity generated growing tax revenues, it could spend more funds on public good provision. Especially elementary education and railway construction are highlighted in this study. Compulsory schooling for both sexes was introduced in the Habsburg Empire already in the 1770s, while it never existed formally in the Ottoman Empire. And while the Habsburg government invested massively in railway construction to integrate the empire, the Ottoman government hesitated to build up a railway network and relied on private investors. In 1878, the Ottoman Empire started to dissolve and as a result Serbia and Montenegro gained independence, while Bosnia-Hercegovina was occupied by the Habsburg Empire. Even though Serbia and Montenegro centralized their bureaucracy, the powerful small-holding peasantry resisted fundamental change in the institutional setting. Basically, they remained in the Ottoman tradition and only progressed in education due to compulsory schooling for males. Also the occupation of Bosnia-Hercegovina did not improve state capacity substantially, because the Habsburg government treated the region rather as a colony and left many Ottoman institutions in place. Long story short: Compared to the Ottoman Empire and its successor polities, the Habsburg Empire developed a superior level of state capacity in all its aspects such as administrative, fiscal, and legal capacity as well as regarding the provision of public goods.

**Data and Sources**
This imperial legacy persisted throughout the inter-war period, since the new state of Yugoslavia was notoriously underfunded and politically deadlocked. Hence, the first and only proper census conducted during the inter-war period provides insight into the regional division of Yugoslavia. It records religion, native language, literacy, and sectoral labour force for 346 districts (*srezovi*) in 1931. This rich dataset was never digitized and exploited before and serves as centrepiece of my empirical analysis. I use the sectoral labour force census and additional sectoral real wage data obtained from the Statistical Yearbooks in order to decompose the national GDP estimate to the micro-regional level following Geary and Stark (2002). Mapping the micro-regional GDP estimates (see figure 1) illustrates the divide regarding economic development between the long-standing Habsburg regions north of the imperial border (solid line) and the long-standing Ottoman regions on the other side. Compared with the spatial distribution of the industrial labour share (figure 2), this regional disparity corresponds with the degree of industrialization.

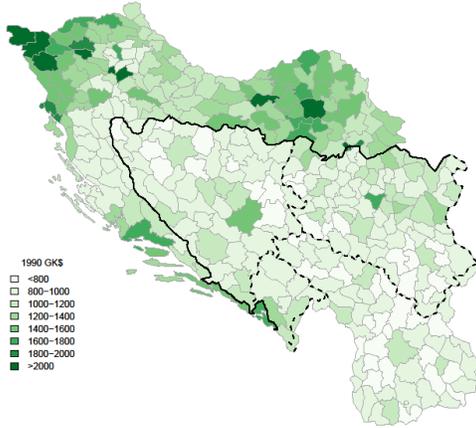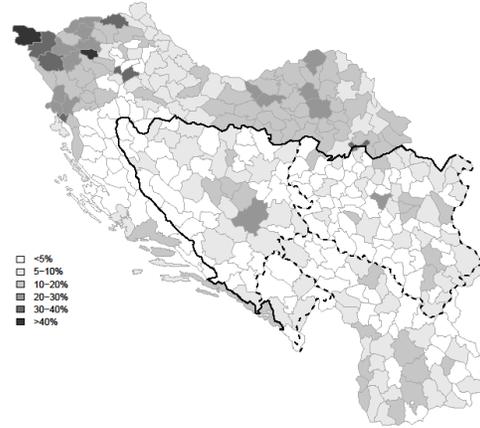Figure 1: *GDP per capita, 1931*        Figure 2: *Industrial labour share, 1931*



## Empirical Strategy and Results

Given this novel micro-regional dataset, I apply a spatial regression discontinuity design (RDD). Since I cannot measure total state capacity, I exploit the historical fact that the Habsburg Empire built up state capacity which was superior in all aspects compared with the Ottoman Empire and its successor polities. Using the imperial border which assigned the micro-regions into treatment (long-standing Habsburg) and control group (long-standing Ottoman) requires randomness of the treatment assignment. This is ensured by the fact that the imperial border was drawn in the 18th century following military-strategical considerations. Especially the norther part of the border, where the divide is most visible, was settled in 1791 along the rivers Sava and Danube after centuries of war-fare that shifted the border back and forth. Furthermore, migration after 1918 can be ne-glected, since more than 80% of the population belonged to the small-holding peasantry bounded to their land. Kukić and Nikolić (2020) show that 45% of the factories in 1938 already existed before 1918 and that the industrial distribution in inter-war Yugoslavia changed only marginally in favour of the long-standing Ottoman regions. This highly persistent regional inequality was the result of failed unification and the marginal conver-gence stacks the cards rather against my hypothesis.

I use cross-sectional data und estimate the following baseline RDD specification:

$$GDP_i = \alpha + d_i\beta + H_i\tau + d_iH_i\gamma + long_i\delta_1 + lat_i\delta_2 + X'_i\boldsymbol{\phi} + \epsilon_i, \qquad (1)$$

where $d_i$ is the distance to the imperial border, $H_i$ is a binary variable for the Habsburg treatment, and I control for longtitude, latitude and a vector $X_i$ of geographical variables. Estimates of $\tau$ can be interpreted as treatment effect. Estimating the same model with the industrial labour share as dependent variable, for more specifications, and across shrink-ing bandwidths yields the results in table 1. The estimated treatment effect ranges be-tween 180 and 290 1990GK$ (16-25% of national level) and is significant across all bandwidths and specification. Regarding industrialization, the estimated treatment effect lies between 2.3% and 4.5% (22-43% of national level) and becomes only insignificant

for the 50km bandwidth. This means that if a district would have been ruled by the Habsburg Empire and, thus, been treated with the superior state capacity, this district would have had 180 to 290 1990GK$ higher GDP per capita and a 2.3 to 4.5 percentage points higher industrial labour share.

Table 1: RDD Results[1]

| Bandwidth: | 100 km | 75 km | 50km |
|---|---|---|---|
| | | *Linear polynomial* | |
| GDP per capita | 288.20 (70.23)*** | 269.93 (83.17)*** | 201.51 (110.35)* |
| Industrial labour share | 0.045 (0.015)*** | 0.039 (0.018)*** | 0.027 (0.023) |
| | | *Quadratic polynomial* | |
| GDP per capita | 288.85 (71.40)*** | 266.55 (84.48)*** | 184.30 (111.08)* |
| Industrial labour share | 0.044 (0.015)*** | 0.037 (0.018)*** | 0.023 (0.023) |
| Observations | 232 | 182 | 126 |

In order to identify the transmission mechanisms, I estimate a structural model first:

$$GDP_i = \alpha + Literacy_i\beta_1 + Institutions_i\beta_2 + Railway\_i\beta_3 + X'_i\psi + \epsilon_i, \quad (2)$$

where I regress GDP per capita on public goods provided by the state and control for other possible impacts such as market potential, population loss during the wars 1912-1918, ethnic fractionalization, and geographical variables. Legal institutions are approximated by the density of employees in civil service and liberal professions, because they are required to run legal institutions like cadastre offices or law courts. Although the results in table 2 suggest a significant impact of human capital, legal institutions, and railway density, reverse causality prevents causal interpretation. Hence, I exploit the exogenous variation of the pre-war regimes as instrument variables (IV), which are the duration of Habsburg rule as well as Serbian and Montenegrin autonomy. Applying a multiple 2SLS estimator suggests that only human capital and legal institutions were transmission channels, while railway construction had no effect on economic development.

Table 2: OLS and Multiple 2SLS Results

| | OLS | OLS | 2SLS | 2SLS |
|---|---|---|---|---|
| Literacy | 7.36 (0.93)*** | 6.11 (0.74)*** | 11.03 (9.74) | 9.53 (1.29)*** |
| Institutions | 10.16 (1.84)*** | 12.05 (2.11)*** | 16.71 (21.01) | 13.44 (3.60)** |
| Railway | 13.62 (6.38)* | 14.31 (5.23)** | −35.52 (227.19) | |
| Controls | No | Yes | Yes | Yes |
| F statistics | | | 0.77\| 0.43\| 0.40 | 64.02\| 53.22 |
| Adj. R² | 0.83 | 0.84 | 0.07 | 0.98 |
| Observations | 346 | 346 | 346 | 346 |

**Conclusion**

The Kingdom of Yugoslavia inherited massive economic disparities as the result of the centuries-long imperial division before World War I. As I have shown, the Habsburg empire outperformed the Ottoman empire in all aspects on state capacity, which is why Yu-

goslavia is an unique historical case to study the effect of total state capacity on economic development. Theoretically, administrative capacity is crucial for improving fiscal capacity and both are necessary to provide public goods such as legal capacity, infrastructure, and human capital. Consequently, state capacity shapes the preconditions for modern economic growth. The results presented above suggest that the higher Habsburg state capacity enhanced GDP per capita by 16-25% and the industrial labour share by 22-43% of the national average. Furthermore, this state capacity influenced economic growth via human capital and legal institutions, but not railway construction. These findings corroborate the claim that state capacity is crucial for economic development and explain the economic backwardness of Southeast Europe.

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[1] The full paper contains polynomial specifications from zero to three, more bandwidth subsamples, and a Donut RDD to exclude spillovers and outliers directly at the imperial border. The robustness checks support the baseline results presented here and the Donut RRD estimates even larger treatment effects. In order to control for a cultural explanation I also include the population shares of Muslims and Orthodox Christians in the RDD. This leads to smaller estimated treatment effects, but render the estimates neither negative nor insignificant.

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