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The Empire Strikes Back: The Effect of Historical and Cultural Affiliations on the Allocation of FDI in Eastern Europe

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This paper investigates whether culture and history impact the spatial allocation of foreign direct investment (FDI). The importance of culture is well documented in both the international business and economics literature; however, the causal impact of culture on the location of FDI has been difficult to determine. In this study, we implement a spatial regression discontinuity design to test for discontinuous changes in investment at the historical border of the Habsburg Empire. Evidence suggests that the empire had a long-lasting impact on culture, trust, and institutions in its territories.

We propose that countries sharing a former affiliation with the empire will be more likely to invest in each other today. The former empire had a border which ran through several present-day countries, and cities located on either side of this historical border have shared common institutions for the last 100 years. This unique setting allows us to identify a cultural effect that is separate from institutions, nationality, religion, and language. The results suggest that there are between 0.24 and 0.32 additional investments per 10,000 individuals coming from Habsburg-affiliated countries in the former empire territories of Romania and Serbia today.

JEL Codes: R3, F12, O12, N94

Keywords: Foreign direct investment, economic development, economic history, culture

I. Introduction

Culture is an integral aspect of international business and economic decisions. When foreign firms decide to invest in a new country, they typically do so at a disadvantage relative to domestic firms. They must not only successfully establish operations in a new country, but they must do so while navigating a new culture as well as relatively unfamiliar legal systems, organizational and managerial practices, and communication and negotiation styles. In this sense, their “foreignness”

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becomes a liability which increases relative to the cultural distance between home and host country (Beugelsdijk and Maseland 2011). This fundamental hypothesis is extensively studied in the academic literature. Yet, the causal impact of culture on the location of foreign direct investment (FDI) has been difficult to determine. This results from the fact that culture is difficult to define and is often entangled in other societal aspects, such as institutions, the political economy, religion, ethnicity, language, and nationality, which can also affect the allocation of FDI.

To understand the potential effect of culture and historical ties on the allocation FDI, we implemented a spatial regression discontinuity design to test for discontinuous changes in investment at the historical border of the Habsburg Empire. The former empire had a border which ran through several present-day countries including Romania, Serbia, Poland, and the Ukraine. In this study, we chose to focus on two countries specifically: Romania and Serbia. Cities located on either side of this historical border have shared common institutions for the last 100 years. Any difference in the distribution of FDI on either side of this border should be attributed to the Habsburg cultural effect and the potential historical ties that were developed as a consequence of the previous empire affiliation. Several papers show that historical empire affiliations may affect the level of economic development today. Grosjean (2011) explores the effect of Ottoman rule on financial development today. She shows that Islamic rule is associated with lower levels of bank penetration across and within countries. When examining the effect of the empire within countries, she notes that while the financial system is less developed in these areas, no other factors such as income or business development are affected. Peisakhin (2012) demonstrates that the Habsburg and Russian Empires influenced the political identities and social norms of individuals living on either side of this no longer existing border in the Ukraine. In particular, differences in social attitudes towards Russia persist today. Grosfeld and Zhuravskaya (2013) examine the historical division of Poland between three empires: the Russian, Habsburg, and Prussian Empires. The authors find no differences in income, industry, corruption, or trust today; however, they do observe a persistence of culture as exhibited through religious practices and beliefs in democracy. Becker et al. (2016) show that Habsburg Empire affiliation affects the levels of trust that individuals have in their court systems and police force today. These papers suggest that prior empire affiliations may affect the path of economic development. Similarly, Karaja and Rubin (2022), in a field experiment comparing villagers on either side of the former Habsburg border in Romania, find that long-time inhabitants of the villages on the Habsburg side of the border have a higher degree of trust towards outsiders than their counterparts on the other side. Papers that specifically examine the impact of the Habsburg Empire present evidence of a long-lasting cultural impact in former empire territories.

Building on these findings, we propose that the Habsburg Empire strongly influenced the culture of the territories it controlled, and that impact can be found in contemporary investment decisions. Therefore, it is likely that territories formerly belonging to the Habsburg Empire would be more likely to attract FDI from countries also sharing a historical tie to the empire today.

The main analysis reveals that the number of FDI projects from Habsburg-affiliated countries is higher in the former empire portion of present-day Romania and Serbia. Specifically, there are approximately 0.24 to 0.32 more “empire” projects per 10,000 individuals in former empire territories. There is no evidence of such a jump in investment projects from the rest of the world at this same border. Additionally, we find no evidence of a jump in any other characteristics that may impact this allocation of FDI at the former empire border.

Many of the previous studies examining the effect of culture on FDI are conducted at the country level and examine only one aspect of culture such as language or religion. However,

culture is much larger than just one element of a population. Common language and religion are rough proxies for the elements that unite a people. While institutions also matter, most formal institutions are typically at the national level, making it difficult to determine whether the effect captured is due to institutions or culture. Other papers in the cultural economics and business literature use the Hofstede index to calculate the cultural distance between countries. While this index made great strides in allowing comparisons of cultural distance between countries, it also has many shortcomings. First, culture may not be homogeneous within a country, which may also affect the distribution of FDI. Additionally, the distance between two countries may not be symmetric. Finally, it is also a concern that all components of the Hofstede index are typically given equal weight in distance calculations; it is very possible that some dimensions may matter more in some business contexts than others (Beugelsdijk and Maseland 2011). By defining culture as belonging to a historical empire and examining variations in investment patterns within countries, we are able to separate the effect of culture from nationality, language, and formal institutions. This allows us to capture the effect of cultural differences and historical ties on the allocation of FDI today.

In the next section, we place our research in the context of the current literature. Section 3 examines the historical background of the Habsburg Empire in order to better understand the mechanisms through which the empire affiliation may have impacted the culture and spatial allocation of FDI today. Sections 4 and 5 introduce the data and methodology, and Section 6 presents the main results of the analysis. Section 7 presents various robustness checks, while Section 8 concludes.

II. Literature review

The impact of history on economic development

It is now accepted that historic ties can impact economic development today. The importance of history for economic development is documented in a review of the literature by Nunn (2009). In previous studies, the impact of history is mainly examined under the context of Europe's colonization and expansion. The channel through which history impacts development is through the effect that it can have on institutions (Nunn 2009). There are three main strands of literature which explore this proposition. The first relates to the importance of factor endowments and colonial rule to economic development. Engerman and Sokoloff (1994) examine differences in land endowments suitable for the cultivation of traded crops, like sugar, which were best produced on large-scale plantations using slave labor. The study reveals that areas relying on slave labor promoted laws that protected the elites, resulting in political and economic inequality. While this first paper was primarily qualitative, subsequent extensions of this hypothesis also find negative relationships between the past use of slavery and economic development measures across states and countries, as well as in new world countries today (Mitchener and McLean 2003; Lagerlöf 2005; Nunn 2009).

The second strand of literature examines the role of legal institutions transplanted during colonial rule and their effects on investor protection and financial development. For example, La Porta et al. (1997) find that British common law offers the greatest investor protection today.

The final strand of literature examines the historical origins of current institutions and their importance for long-term economic development. The seminal paper by Acemoglu, Johnson, and

Robinson (2001) examines the disease environment in former colonies. The authors hypothesize that Europeans were more likely to settle in areas with less disease. As a result, Europeans were only able to set up growth promoting institutions, which protected property rights, in areas where they settled. In contrast, Europeans did not often settle in areas with harsher disease environments and instead chose to set up extractive institutions in these colonies. The authors use an instrumental variable approach using early European settler mortality rates as the instrument for institutions to show that areas with lower mortality rates have higher per capita incomes today. While these papers made great strides in determining that history impacts economic development, they do not explore why regions within countries may experience varying levels of economic development today. This study differs from this body of literature by building upon the fact that history matters by examining the effect of history on regional development today.

Several papers make important contributions in the analysis of how history matters at the regional level. Dell (2010) examines the effect of the mita, a forced mining labor system established in Peru and Bolivia between 1573 and 1812. This paper uses a regression discontinuity design to compare outcomes in mita and non-mita districts today. By comparing outcomes very close to the border, the author shows that the mita had negative effects on long-term economic development. Specifically, she finds that consumption is 32% lower in the mita side which is driven by lower levels of education and less developed road networks. This is attributed to the fact that mita governments restricted large land holdings and it was the landowners that typically lobbied for a greater provision of public goods. In this case, history impacted the concentration of wealth and power which, in turn, affected the development path of these regions.

Ambrus, Field, and Gonzalez (2020) examine how disease can permanently alter the growth path of urban areas. In this paper, the authors investigate the impact of the cholera epidemic in one London neighborhood. The cholera outbreak in this neighborhood was devastating. In one month, 5% of families lost their main wage earners and became impoverished. The authors demonstrate that this incident had an effect on neighborhood poverty, as captured by real estate prices immediately after the outbreak. These differences in real estate prices persist even 160 years after the end of the epidemic, suggesting that such localized health shocks can affect the trajectories of cities today. This study employs methodologies similar to Dell (2010) and Ambrus, Field, and Gonzalez (2020); however, it builds upon this regional literature to examine the impact of history on another important aspect of economic development, the allocation of FDI today.

The effect of history and institutions on culture

While it is evident from this discussion that history matters for economic development, it can also have lasting effects on cultural development. One important characteristic that history can affect is trust. Rather than examining the historical effect on income or consumption, Nunn and Wantchekon (2011) examine the role of history on trust in the context of the slave trade in Africa. They find very strong impacts of the number of slaves taken from an individual's ethnic group on an individual's trust in others today. The authors hypothesize that individuals carry culture with them while institutions remain fixed in place. They use this definition to see which effects, culture or institutions, have a bigger impact on trust. If culture matters more, it should matter whether an individual's ancestors were enslaved. If institutions matter more, it should matter whether an individual lives in an area that was historically affected by the slave trade. The authors find evidence that both factors matter, but the effect of culture is stronger than the effect of institutions on trust.

Exploiting the location of the Habsburg Empire in Eastern Europe, Becker et al. (2016) demonstrate that the Habsburg Empire had persistent effects on the trust of individuals living in former empire regions today. The authors use the 2006 Life in Transitions survey data and employ a border specification to test whether individuals living in cities within 200 kilometers of the Habsburg border have higher trust in courts and police today. In addition to higher trust in institutions, the authors also show that the Habsburg affiliation also impacts the extent to which individuals feel that they must pay bribes in courts or to police. The authors propose that in this case, the Habsburg Empire established cultural norms which are still present in the interactions of individuals with their respective institutions today. This paper establishes an interesting and compelling foundation for the current study. Since the empire affected cultural and social norms in former empire territories, this setting is crucial for examining the impact of these norms on FDI. While it has long been recognized that culture can impact the allocation of FDI, compelling evidence, especially at the local and regional level, remains limited.

Culture, institutions, history, and FDI

There are several determinants of FDI that are well known. Of these determinants, one of the most important is distance. Distance can make international exchanges costly (Makino and Tsang 2011). Geographic distance increases transportation costs. Institutional distance affects the success and profitability of a prospective firm in a new location, as both formal and informal institutions define the rules of the game that shape economic exchanges and interactions (North 1990). Historical ties are important in reducing costs since they can shape shared values, norms, and cultural beliefs. Historical ties can also affect expectations and reduce uncertainty in international exchanges (Makino and Tsang 2011). Rangan (2000) argues that historical ties make the search and assessment of potential locations easier and less costly while also making ongoing operations more efficient. Additionally, interactions among countries which share historical ties may result in a positive feedback loop, where any similarities in cultural norms or institutions positively reinforce historical ties. This can also serve to narrow the “distance” between countries. Cultural distance can also be costly. It can create behavioral uncertainty and affect an investor’s commitment to invest. Furthermore, cultural distance can impact the performance of a foreign firm in a new market. For these reasons, understanding the intricacies of culture and its effect on FDI is imperative to business leaders. Several studies find evidence of this effect.

Makino and Tsang (2011) examine the role of historical ties in the timing of FDI flows into Vietnam following its opening to international markets. The authors show that culture has a differential impact on the timing of investment. Specifically, the authors find that investors from Mainland China moved in later than investors from Taiwan and Hong Kong. This finding is significant since Vietnam has historically experienced strained relations with Mainland China following the Sino-Vietnamese War. The authors also demonstrate that investors from socialist countries were early movers. This is similar to Crane, Peterson, and Oliker (2005), who find that Russian investors are more likely to invest in former Soviet Republics today. Additionally, Makino and Tsang (2011) show that colonial ties can matter through their finding that French-speaking countries were early movers.

Glaister, Driffield, and Lin (2020) examine the effect of prior colonial relationships on FDI in Africa. This is an excellent setting in which to examine this issue, given that Africa’s recent history has been dominated by a variety of colonial arrangements. Colonialism has persistent impacts on the language, institutional structures, and business practices of former colonies. Each of these

factors can reduce the liability of foreignness (Liou and Rao-Nicholson 2017). Additionally, history can also create informal institutions that are challenging to overcome. The ingrained image of a country or potential investor is an example of an informal institution that can form through historical ties. This could be a positive image or negative stigma that is associated with the investor, affecting the subsequent success of the foreign investor (Glaister, Driffield, and Lin 2020). For example, former colonies may experience negative feelings towards their colonizer stemming from past labor exploitation and resource depletion (Jones 2013; Nunn 2007). Glaister, Driffield, and Lin (2020) find a positive effect of prior colonial ties on inward FDI; however, the nature and influence of these historical ties are more complex than previously considered and vary by colonizer. Specifically, there is a positive effect on inward FDI from British investors. The authors suggest that British colonizers engaged in greater institutional development than other colonizers. This may have resulted in a positive historical tie between countries, making former colonies more open to receiving investment from British investors. Furthermore, the authors also find that the length of the colonial period negatively affects inward FDI, while the length of independence exhibits a U-shaped effect. Immediately following independence, due to a recent association of oppression, there is a negative effect on FDI. However, over time, the benefits of a longer shared history outweigh the negative effects of colonialism, resulting in a positive effect of the length of independence on FDI. While making important theoretical contributions for the importance of culture and history on FDI, both Makino and Tsang (2011) and Glaister, Driffield, and Lin (2020) only present evidence of the importance of culture on FDI at the country level.

Only a few other papers examine discontinuities in FDI and trade within countries. Ma (2017) examines the effect of language on the allocation of FDI in China and studies investments from Hong Kong, Macau, and Taiwan at the borders of various dialects in China to show that cultural similarity increases FDI. Egger and Lassmann (2015) examine import behavior at native language boundaries in Switzerland to show that culture can affect international trade; they find that, on average, more products are imported from areas with a common native language. Both of these papers are methodologically similar to our study in that they take advantage of the regional heterogeneity of culture within a country to estimate the impact on FDI or trade today. However, as discussed in previous literature, language is only one small facet of culture. It is cultural norms that can be more impactful. North (1995) suggests that while formal institutions can quickly change, informal institutions are less likely to change and may even endure over time. Since cities on either side of the long-gone Habsburg border have shared common institutions for the last 100 years, we do not argue that formal institutions impact the allocation of FDI today. Rather, it is the informal institutions, or cultural norms, that can impact the allocation of FDI. Becker et al. (2016) show that Habsburg Empire affiliation affected the trust in institutions and perceived corruption that individuals living in former empire territories have today. However, based on these findings, it is not directly evident how this could affect FDI. It is possible that empire affiliation shaped the cultural norms of individuals and, therefore, impacted the functioning of the same institutions today (Tabellini 2010). However, if the only impact of the empire affiliation is the functioning of local institutions, there would be a discontinuity in all FDI at the border. If the empire affiliation affected cultural norms through a historical tie, there should only be a discontinuity in FDI originating from other former Habsburg territories. To our knowledge, this study is the first to test these factors along with the intricacies of culture and historical ties and their effects on FDI at a regional level. In order to understand the context and mechanisms through which the empire affiliation may have impacted the allocation of FDI today, it is important to understand the history and influence of the Habsburg Empire in Romania and Serbia.

III. The historical background of the Habsburg Empire

The royal House of Habsburg was one of the most powerful and influential families in Europe. As early as the 11th century, the house had acquired lands as far west as Spain and as far as Galicia (Poland) in the East. The association of the Habsburg name with Austria began when Rudolf IV, of House Habsburg, ascended to the throne of the Holy Roman Empire in 1273. After that time, the empire continuously expanded eastward through wars until more than half of Europe was controlled by the House of Habsburg (Becker et al. 2016).

The major influence of the empire in Eastern Europe began when Ferdinand of Austria was elected King of Hungary, Croatia, and Bohemia. It was at this time that Austrians had to seriously contend with the force of the Ottoman Empire. The Habsburgs drove further into Eastern Europe, each time pushing the Ottoman Empire back even further. In 1683, the Ottomans failed to capture Vienna for a second time which marked the beginning of the Habsburg dominance in Eastern Europe (Becker et al. 2016).

One of the defining characteristics of the empire is that even though the empire was composed of many states and cultures, the ruling class largely respected and protected its citizens. The citizens recognized this and considered the bureaucracy to be reliable, honest, and hardworking. The laws were fair and efficient, and it was the legal system that served as a uniting factor throughout an empire composed of many different ethnic groups. The ruling style of the empire was decentralized until the rule of Maria Theresa in the mid-18th century. She established a set of governors that would supervise local administrations throughout the empire. Once a new territory fell under Habsburg rule, the old administration was abolished and a new Austrian governor would be installed. This governor was charged with establishing a new local administration, often filling roles with natives that had been sent for training in Vienna. Due to the competency of the Austrian trained administration, these institutions sometimes remained in place even after a territory became autonomous (Becker et al. 2016).

Maria Theresa's son, Josef II, carried on this legacy and enhanced her policies by instilling legal reforms, ending censorship, and promoting education. He also went on to found institutions of social and medical care and laid the foundations for infrastructure development. Josef gave subsidies to fund infrastructure projects such as railroads in less developed parts of the empire in order to encourage integration (Becker et al. 2016). This included highway development and improvements in the navigability of the Danube River and the Save and Kulpa Rivers in Hungary. By 1800, 7,460 km of highways were in existence throughout the empire. By World War I, 40,000 km of railways were built throughout the empire. Connecting the financial heart of Vienna to major cities throughout the empire was important for the unity of the empire as well as for the transportation of goods and services which would lay the foundation for economic growth (Good 1984).

Throughout the 18th century, the empire made a conscious effort to industrialize and develop. Mercantilist policies were enacted to develop the agricultural regions of the empire. In the Bohemian lands, subsidies were given to machine builders and inventors were given exclusive production privileges for several years. The textile and iron industries also experienced lessening restrictions. Political advisors tried to encourage the movement away from agriculture by encouraging manufacturing in Hungary and the less developed regions of Austria. Plans were made to increase Hungarian productivity in the areas of textile, leather, paper and wood products, and iron manufacturing. Tariff barriers were reduced or eliminated (Good 1984).

In the 18th century, the economic development of the empire was split between west and east. The western portion of the empire was much more industrialized while the eastern portion was more agrarian. According to several historians, economic development started in the western portion of the empire and slowly moved east. During this time, the western portion of the empire had several strong industries, including the linen/woolen textile industry as well as the glass industry and chemical industry. Austria was a strong center of mining and metallurgy. By the late 1700's, Austria had become one of the largest producers of pig iron in all of Europe, with its Styrian region producing more iron than all of England. At this time, the Eastern portion of the empire specialized in grain and livestock production (Good 1984).

In Hungary, the main strength was the flour milling industry. Croatia-Slavonia had some grain production, but it could not compete with the output from Hungary. This pushed the Serbian region towards livestock production. In Transylvania, the main industry was mining and metallurgy. The expansion of the rail and credit networks in the region allowed Transylvania to have easy access to Budapest. This stimulated the industry further, allowing the region to become a major exporter of coal, pig iron, and timber. In the years leading up to World War I, Transylvania and Croatia-Slavonia had much larger industries and industrial output than their neighbors: Romania, Serbia, and Bulgaria (Good 1984).

A turning point for the empire occurred in 1866, when Austria was defeated and considerably weakened in the Austrian-Prussian War. This forced Austria to relinquish control of Lombardy-Venetia to Italy, and with the dissolution of the German Confederation, it also lost its status as the leader of the German speaking states. The war left Austria in a great deal of debt. It was around this time that the emperor, Franz Joseph, decided to reexamine the empire's affairs. By this time, there was unrest in the empire as many ethnic groups, especially the Hungarians, were demanding equal status with the Austrians. In fear of losing even more power, the Austrians engaged in negotiations with the Hungarians which ended in the *Ausgleich* of 1867. This compromise regulated the relations between Austria and Hungary and created the Austro-Hungarian Empire. Through negotiations, it was decided that the Hungarians would have full internal autonomy. The two powers would remain united for war and other foreign affairs and would operate under a customs union which would be reevaluated every 10 years. Austria and Hungary would both have their own constitutions, with their own governments and parliaments. The parliament was composed of an appointed upper house and an elected lower house. They both remained under the rule of a common emperor, his court, and ministers of foreign affairs and war. Franz Joseph was crowned the King of Austria-Hungary and Gyula Andrassy was named the first prime minister of Hungary (Boyer 2022; Seton-Watson 1939).

Even under the newly reformed empire, many of the laws protecting citizens' rights remained. The Fundamental Laws, which became known as the December Constitution, were instated in 1867 and lasted until the dissolution of the empire. These laws ensured equality and freedom of speech, press, and assembly, and protected the rights of minority groups. They proclaimed that "all nationalities in the state enjoy equal rights, each one having an inalienable right to the preservation and cultivation of its nationality and language." The equal rights of all languages in local use were guaranteed by the state in schools, administration, and public life (Boyer 2022; Seton-Watson 1939).

The history of Transylvania and Serbia is complicated, political, and even controversial. In the next section, we discuss the key distinguishing characteristics of the regions to shed light on the influence of the empire in these regions.

Transylvania

Transylvania was historically governed by princes and a Diet. The Diet was an administrative body composed of Hungarian nobility, German Saxons, and Szekely Hungarians. This group often referred to themselves as the three nations and decided on all economic, legal, and military matters, even though the majority of the population in the area was ethnically Romanian. The Romanians in the area held little power; they were mostly peasants that worked under serfdom for Hungarian noblemen. As they were not fairly represented by legislative bodies, clashes and protests between the Romanians and Hungarians often ensued (Encyclopedia 2020).

After Austria defeated the Ottoman Empire in 1684, the Habsburg monarchy started to impose their rule in Transylvania. They strengthened the government and promoted the Catholic Church. In 1711, the Transylvanian princes were replaced by Habsburg governors. In 1765, the Grand Principality of Transylvania was formed. This granted Transylvania a special status as an independent state within the Habsburg monarchy (Britannica 2020a). This time period, however, was not peaceful; the area experienced civil unrest due to competing interests between the large ethnic groups. In 1784, the Romanians revolted against the Hungarians, demanding political and religious equality with other ethnic groups. The rebellion was crushed, and no reforms were made. In 1791, the Romanians again demanded religious equality from the Habsburg emperor to no avail. In 1848, during the revolutions, the Hungarian parliament proposed the union of Transylvania with Hungary. At first, the Romanians were optimistic about the union because they hoped that it would bring much needed reforms. However, they quickly realized that the Hungarians would not support Romanian national interests. A Romanian Diet was formed which requested proportional representation in the Transylvanian Diet along with an end to the social and ethnic oppression of Romanians. The Saxons supported the Romanians as they also opposed the union with Hungary for fear that they would lose their class status in Transylvania. The vote to join Hungary was pushed through, regardless of the opposition from many groups. This move led to war within the area between the Romanians/Saxons and the Hungarians. The Hungarians were eventually defeated but requested that national borders be drawn along ethnic boundaries, giving them control of Transylvania. The Austrians declined this request because they favored the creation of a Romanian province which would unite Transylvania, Banat, and Bukovina (all areas of the Habsburg Empire with high concentrations of Romanians). The empire, at the time, was trying to balance civil unrest along ethnic lines with the desire to maintain a united empire. They feared that if not supported, the Romanians would also desire to separate from the empire. The year following the revolution was characterized by many small battles and civil unrest which was eventually quelled by the Austrians. After the wars ceased, the Austrians imposed a repressive regime on Hungary and ruled Transylvania through a military regime, making German the official language. The Austrians acknowledged the Romanian citizens, giving them land to farm, but living conditions were generally poor (Encyclopedia 2020).

The start of the Austro-Hungarian Empire in 1867 marked the end of autonomy for Transylvania and Serbia. As a result of the Ausgleich, Transylvania was no longer considered a separate state; it was now a province ruled by the Hungarian Diet. During this time, Romanians were oppressed under Magyarization, or the process of Hungarian cultural assimilation (Encyclopedia 2020). However, this time period was not all bad for the Transylvanian region. The Austro-Hungarian Empire brought forth infrastructure development and the boom of industry in the area. Prior to 1867, Transylvania did not have a rail network. By 1910, rail density in Transylvania was 96 km per 100,000 people. This level of development was comparable to the

more developed regions of Austria and far exceeded the established rail networks on the other side of the border. For reference, in Romania, rail density averaged around 49 km per 100,000 people at this time (Good 1984). These types of projects were financed by two Austrian companies, the Staatseisenbahn-Gesellschaft and the Danube Steamship Company. These companies not only invested in railways but also waterways and coal mining industries in the Hungarian Empire. In addition to infrastructure development, banking and capital networks were also developed by the late 1860's. There were six main bank branches throughout the empire, one of which was located in Brasov (Transylvania). From 1890 to 1913, the eastern part of the empire experienced an industrial revolution and an emergence of industry. This timing was concurrent with the diffusion of the rail and credit network. During this time, capitalism spread throughout the eastern regions, and Austrian capital financed large investments in infrastructure and the expansion of the agriculture and food processing industries. Some of the innovations that occurred included the mechanization of farming practices as well as the introduction of artificial fertilizers (Good 1984). After World War I and the collapse of Austria-Hungary, the deputies of Transylvanian Romanians declared the union of Transylvania with Romania on December 1st, 1918.

Serbia

The association of Serbia with the Habsburg Empire began during the Great Serb Migration, a time when many Serbians fled Ottoman rule and settled into the Habsburg Monarchy. During this time, Serbians settled in the lower half of Hungary with a large portion also settling in the Vojvodina area of northern Serbia. The Habsburgs provided these Serbians special rights, recognizing them as their own nation within the empire in exchange for the provision of a defense against potential invaders, namely the Ottoman Empire. In 1716, the Austrian government temporarily forbade settlement in the area by Hungarians while allowing German speakers to move in to repopulate the area and develop the agricultural sector. During 1848, the area experienced civil unrest between the Serbs and Hungarians. Following the defeat of the Hungarians in 1849, a new administrative region called the Voivodeship of Serbia and Banat of Temeschwar was formed. This region was an Austrian crown land but was autonomous. In 1860, this was abolished, and it again became a Hungarian crown land at the decision of Franz Joseph, the then-emperor of Austria-Hungary. As in Transylvania, the region experienced great economic growth during empire rule; however, ethnic relations were tense during this time (Britannica 2020b).

Summary

From this discussion, we infer several hypotheses on the lasting effect of the historic and cultural ties with the Habsburg Empire. The first hypothesis describes the view of the empire in Romania and Serbia. We propose that Romanians and Serbians positively view their association with the former Habsburg Empire and, as an extension, there exists a positive relationship between countries that share this affiliation. This stems from the fact that the empire frequently protected both Romanians and Serbians from their oppressors while also allowing them to enjoy long periods of autonomy. In addition, the empire promoted the development of fair and well-functioning institutions while also investing heavily in infrastructure. This led to great economic growth in these former empire territories. Even though periods of time were characterized by ethnic clashes, the length of independence should outweigh any short-term negative associations with the empire that may have occurred. For these reasons, we expect to find a greater number of investments from

countries affiliated with the empire in former Habsburg territories. The best identification of the effect of culture on FDI comes from local variations in culture which should be localized to the former empire border.

The second hypothesis builds on the first by proposing that some historical ties may be stronger than others. Throughout history, Romanians and Serbians were often oppressed by the Hungarians and, as a result, often engaged in battles over territories. Pockets of Romania and Serbia still have significant Hungarian minority populations. In Romania specifically, cultural and political tensions between Romanians and Hungarians still exist. It is possible that Hungarian investors would be more drawn to areas with large Hungarian populations due to language and cultural similarities. Since Austrian capital financed most of the infrastructure and industry development in the former empire territories, we propose that Austrians formed the strongest ties in these areas.

IV. Data

The primary data used in the analysis come from fDi Markets, a database maintained by the Financial Times, which tracks cross-border greenfield investments from 2003 to 2018. This database is unique in that it identifies many details about each investment project. It provides the source and location of each investment, in most cases down to the city level. It also provides the industry of each investment project as well as the size of the investment as measured by the amount of capital invested and the number of jobs created. From 2003 to 2018, there were a total of 2,221 projects identified in 217 cities in Romania and 910 projects identified in 115 Serbian cities. Estimation of the model requires the precise location of each city.

We used GeoNames to obtain the geographic coordinates and population of each city in the data set. In addition to the cities with investment projects, we also included cities in Romania and Serbia that did not receive any foreign investment to avoid any selection issues. We included all cities in Romania and Serbia that are considered seats of administrative divisions. In addition to these cities, we also included all populated places with 5,000 or more individuals. The average population of cities with foreign investments is 6,113. We chose to include all populated places with populations above 5,000 individuals in order to capture all similarly sized cities that may have also been considered for investment. This results in a total of 3,018 cities in Romania and 157 cities in Serbia, for a total of 3,175 cities in our sample. After obtaining the city coordinates, we used ArcGIS software to map the cities, the current country borders, and the historical empire border. We used this software to calculate the geodesic distance from each city to the nearest point on the former empire border in kilometers.

The analysis is performed at the city level. To form the dependent variable, we construct a measure of FDI per capita. To do this, we calculate the number of “Habsburg” projects in city i , from 2003 to 2018. This measure is then scaled per 10,000 individuals as this corresponds to the average population of the cities in the sample. We define a Habsburg project as any investment coming from Austria, Hungary, the Czech Republic, Slovakia, Slovenia, Croatia, or Bosnia-Herzegovina. These countries were selected since they were completely contained within the boundaries of the Habsburg Empire from 1867 to 1918, the period of time that regions of Romania and Serbia also officially belonged to the empire.

The analysis also requires data on location-specific characteristics that may impact the allocation of foreign direct investment. Ideally, these data would be available at the city level;

however, this is not readily available for every location in the data set. The smallest statistical unit for which we can collect data is the municipal or district level.

In the European Union, each member country is divided into various regions for statistical purposes. This classification system is called the Nomenclature of Territorial Units for Statistics, or NUTS for short. Eurostat specifies three NUTS levels in each country. These levels are based on existing institutional divisions within each country as well as on certain population thresholds. The largest classification is NUTS1, and the smallest classification for which data is collected is NUTS3. The average population of the NUTS3 division is between 150,000 to 800,000 individuals. All Romanian data on economic and demographic characteristics are obtained from Eurostat at the NUTS3 level as of 2016, the most recently published Romanian data. Serbia is not in the European Union; however, it is a candidate country and, therefore, is in the process of transitioning to the NUTS classification system for data collection. The smallest administrative unit in Serbia is a district. Serbia currently has 24 districts that are proposed to be equivalent to the NUTS3 classification. All Serbian data come from a report on the municipalities and regions of Serbia published by the Statistical Office of the Republic of Serbia. We draw on data from the 2017 publication of this report which provides information for Serbian districts as of 2016.

In Romania, the location characteristics considered are land area measured in square kilometers and the following population characteristics: population density per square kilometer, median age, and GDP per capita. We also include information on total employment and employment by industry. The industries considered are manufacturing, IT, and agriculture. Since educational characteristics are not available at the NUTS3 level, we also include information on the total number of professional, scientific, or technical establishments and the number of EU trademark applications in an effort to capture human capital differences across regions.

We obtain similar regional, economic, and demographic characteristics for Serbia. For Serbia, we examine statistics on land area measured in square kilometers as well as the following population characteristics: population density per square kilometer, average age, average net salary per employee, as well as the average annual number of workers employed in various industries. The industries included are agriculture, manufacturing, finance and insurance, and real estate. These data serve to establish the industrial profile of the regions in the analysis.

V. Identifying the effect of culture on the allocation of FDI

In this study, we implement a spatial regression discontinuity design to test whether there is a discontinuous increase in Habsburg investment at the former empire border in present day Romania and Serbia. This method allows an identification of within country variation in the allocation of FDI that can be directly attributed to cultural and historical differences. The former empire had a boundary which split present day Romania and Serbia in half. We present evidence that this empire affiliation had persistent cultural effects on the people living in these former empire regions. Perhaps the most important cultural effect is the formation of historical business ties between countries sharing an affiliation with the former Habsburg Empire. We take advantage of this variation in culture along the no longer existing boundary to identify differences in the location of FDI at the border. Cities on either side of this boundary share a common language and religion. Additionally, cities located on either side of this border have shared common institutions for over 100 years. These features allow us to separate the effect of culture from the effect of institutions, language, and religion which are often entangled in other definitions of culture used in previous

studies examining the effect of culture on FDI. We follow the literature in implementing a one-dimensional forcing variable, distance to the former empire border in kilometers. In order to estimate how culture impacts FDI at the former empire border, we estimate the following equation:

$$FDI_{Habsburg_i} = \beta_0 + \beta_1 Empire_i + f(D_i) + Empire_i f(D_i) + c_j + \epsilon_i \quad (1)$$

where $FDI_{Habsburg_i}$ represents the number of Habsburg projects per 10,000 individuals in city i . $Empire_i$ is a dummy variable which is equal to one if city i is located within a region that formerly belonged to the Habsburg Empire. D_i represents the distance from city i to the historical border measured in kilometers. C_j represents location country fixed effects which control for any country-specific factors, such as formal institutions, language, and religion, which could all impact the allocation of FDI today. We present two estimations of this model. In the first estimation, we present results from a local linear approach where $f(D_i) = D_i$. In this estimation, we follow the literature and use an optimal bandwidth of 84.84 kilometers, as determined by the methodology proposed by Calonico, Cattaneo, and Titiunik (2014). In the second estimation of the model, we include various orders of polynomials of the distance variable as controls which are captured by $f(D_i)$. The coefficient of interest in all of these estimations is β_1 , which reflects the role of Habsburg culture on FDI.

This empirical analysis requires several important assumptions. The first assumption is that if Habsburg investment is an important determinant of FDI, there should exist a discontinuity, or a jump, in foreign investment coming from former Habsburg investors as one moves into the former Habsburg territory. The second assumption is that foreign investment coming from the rest of the world does not change discontinuously at the border. This is an important feature because if foreign investment coming from the rest of the world also jumps at this border, it is likely that these regions provide better business environments for foreign investors. In order to attribute the change in investment patterns to culture, it must be the case that only Habsburg investment is impacted at the former empire border. The final necessary assumption is that any other factor that may impact the spatial allocation of foreign investment is continuous at this border. If these assumptions hold, it is reasonable to conclude that any increase in Habsburg FDI at the border can be attributed to a Habsburg cultural effect. To test these assumptions, we create a similar measure of FDI per capita by calculating the number of “Rest of the World” (ROW) investments in city i , from 2003 to 2018. This measure is also scaled per 10,000 individuals for consistency. We replace the dependent variable in Equation 1 with FDI_{ROW_i} to formally test the first assumption. We repeat this process with each of the location characteristics collected to test the validity of the final assumption.

Graphical analysis

Before presenting the results from the regression model, it is important to examine the distribution of Habsburg investment near the border. Figure 1 presents the density of investment projects in Romania and Serbia. Figure 1a depicts projects from Empire investors. While there are clearly some investments that are being drawn to the capital city of Bucharest, it appears that Habsburg investments are almost completely contained within the former empire territory. Figure 1b provides the density of projects from the rest of the world. In contrast to previous results, there is no clear pattern for these investors. These investors appear to be geographically distributed throughout both countries, with the largest cities drawing more investments. Figure 2 plots the location of Habsburg and ROW investments, respectively, with larger circles representing a larger

number of projects per capita. These figures present similar evidence for Habsburg investors. Empire investment projects occur almost exclusively in former empire territories while ROW projects are more or less evenly distributed throughout Romania and Serbia.

Figure 1: Density of FDI.

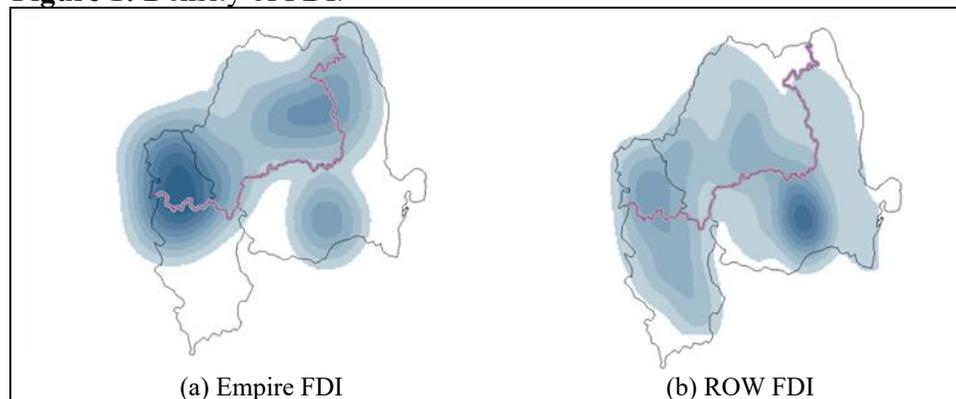
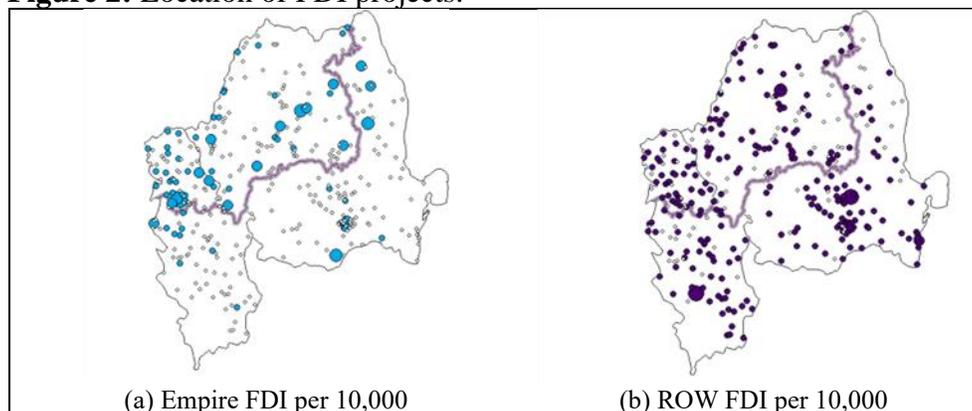


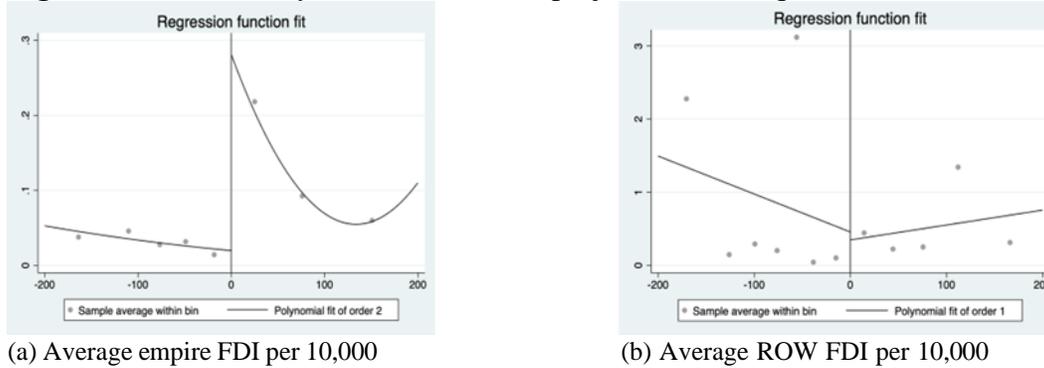
Figure 2: Location of FDI projects.



Next, we present the graphical evidence of a discontinuity. Figure 3a plots the average number of Empire FDI projects per 10,000 individuals over various distances from the border. The horizontal axis indicates the distance in kilometers from the empire border. Positive values represent the distance from the border to cities within the former empire territory, while negative values represent the distance from the border to cities that were never in the empire. While the average number of Habsburg FDI projects is relatively low across Romania and Serbia, there is a striking jump in the average number of Habsburg projects that is only evident within 100 kilometers of the border in the former empire territory. Figure 3b plots the average number of ROW projects per 10,000 individuals over various distances from the border. In contrast to the previous figure, there is no evidence of a discontinuity in projects from the rest of the world. ROW investments are flat across the former empire border. The only spikes in ROW projects seem to correspond with larger cities that fall on either side of the border. This establishes the fact that Habsburg investors are being drawn to the former empire territories of Romania and Serbia. Since this pattern does not exist

for investors from the rest of the world, these graphs provide initial evidence that the discontinuity found is not solely indicative of a better business environment for all foreign investors.

Figure 3: Discontinuity in number of FDI projects at the empire border.



Note: These figures portray how FDI varies across the former empire border. The vertical axis denotes the average value of FDI projects per 10,000 individuals, while the horizontal axis denotes the distance in kilometers from the border. Negative values represent the distance to the border from cities that were never in the former empire, while positive values represent the distance to the border from cities that were located in the former empire territory.

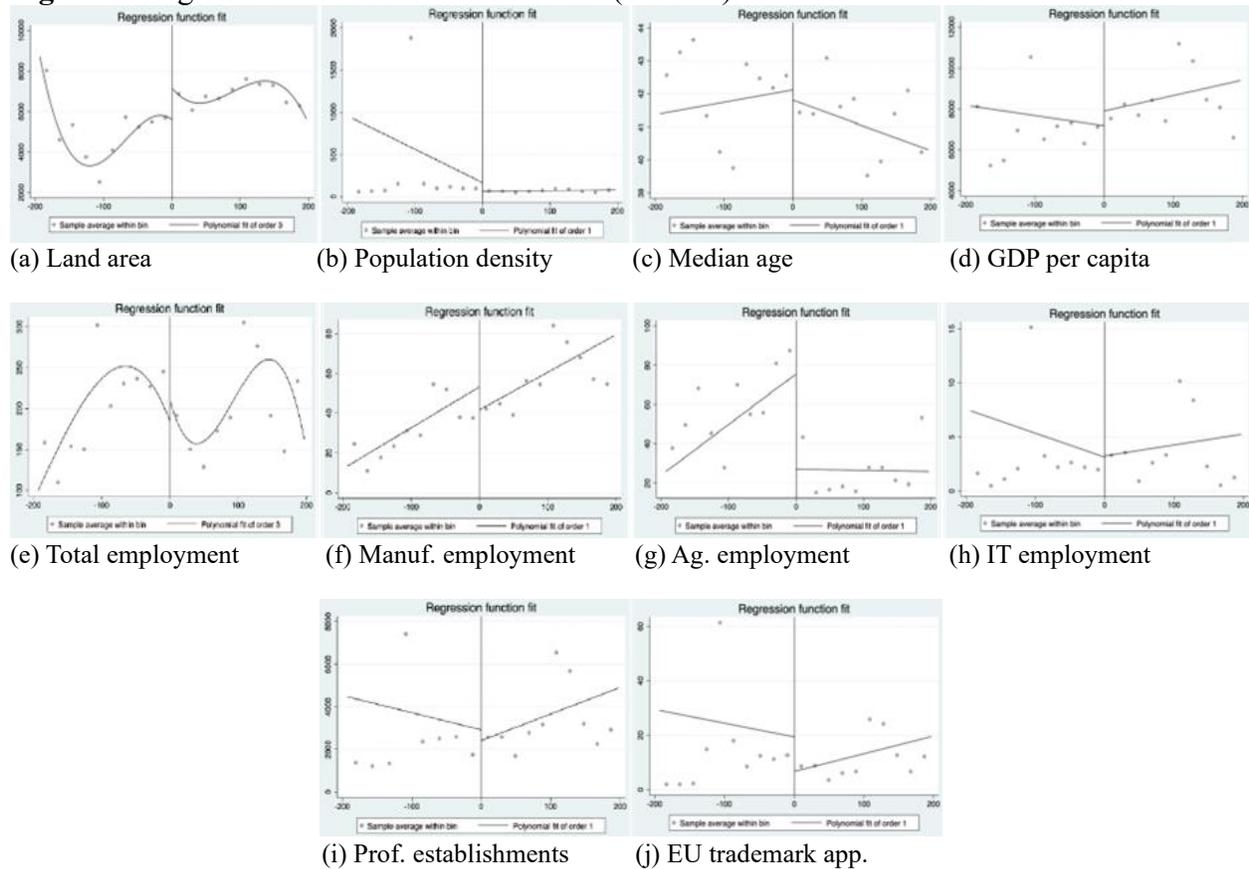
A valid regression discontinuity design requires that all other factors that may impact the spatial allocation of FDI in both Romania and Serbia remain continuous across the former empire border. We present graphical evidence of this by country as these statistics are drawn from different sources for Romania and Serbia. The statistics presented are as of 2016, the most current year available for both countries.

When examining the factors that may impact the allocation of FDI in Romania, it is evident that most demographic and industry characteristics are continuous across the border. Demographic characteristics such as median age, population density, and GDP per capita are continuous, which indicates that there are no significant human capital differences across regions. While it would be preferable to have data on the educational characteristics of the population in these areas, these data are not available. More compelling evidence of this is reflected in the graphs depicting the number of EU trademark applications, IT employment, and the number of professional, scientific, or technical establishments. Each of these graphs provide evidence that no trend or discontinuity exists across the former empire border, suggesting that the educational characteristics of the individuals living in these areas do not differ significantly.

There are two important industrial characteristics to note. First, there is an observable trend in manufacturing employment across the border. Second, there is a significant difference in agricultural employment across the border. These differences in the industrial characteristics of the regions could be persistent effects of the Habsburg Empire affiliation. Under Habsburg rule, the empire invested heavily in the development of industry and infrastructure, especially in the eastern portions of the empire. Towards the end of the 19th century, the Transylvanian area no longer focused on agricultural production but instead focused on producing timber and iron (Good 1984). The affiliation with the Habsburg Empire may have propelled the former empire territory towards other industries while the non-empire territory may have lagged behind. Interestingly, differences

in economic development, as captured by the GDP per capita and other measures of the industrial employment of individuals living in these areas, do not persist. These factors, however, still do not explain the discontinuity observed in the number of Habsburg projects. The top industries of investment for Habsburg investors are real estate and financial services. This means that the trends in manufacturing and agricultural employment alone cannot explain the pattern of Habsburg investment. While agricultural employment is significantly lower in the former Habsburg territory, this factor does not seem to affect the allocation of FDI from the rest of the world, as there is no difference in the amount of FDI coming from the rest of the world across this border. This suggests that Habsburg investors are being drawn to areas where they hold cultural and historic business ties.

Figure 4: Regional characteristics of Romania (NUTS3).

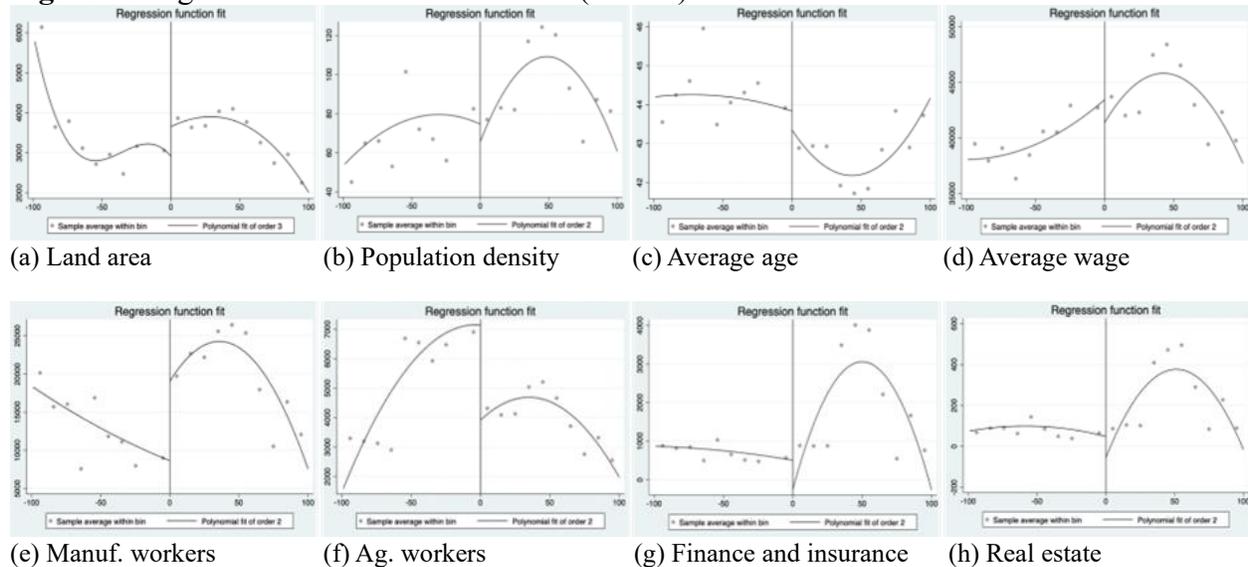


Note: These figures portray how regional and economic characteristics in Romania vary across the former empire border. The vertical axis denotes the average value for a given variable, while the horizontal axis denotes the distance in kilometers from the border. Negative values represent the distance to the border from cities that were never in the former empire, while positive values represent the distance to the border from cities that were located in the former empire territory.

In Serbia, the capital city of Belgrade falls on the former Habsburg Empire boundary. In addition, five large cities fall within 5 kilometers of this border. It is likely that some investors may choose to locate in these cities in order to be in close proximity to Belgrade. In order to prevent these large cities from skewing the results, we drop them from the main analysis. The following graphs depict factors that may influence the spatial allocation of FDI in Serbia, excluding Belgrade and the five large cities that were dropped from the analysis.

The graphs depicting Serbian characteristics present a similar story to that of Romania. In Serbia, there is a statistically significant difference in manufacturing and agricultural employment across the former empire border. This again indicates some evidence of the Habsburg influence on the industrial development of the region. While these graphs depict evidence of a few discontinuities in the economic and demographic characteristics of the regions of Serbia across the empire border, none of these characteristics explain why Habsburg projects per capita are higher in the former empire region of Serbia. As in Romania, the main industries that empire investors are associated with are service industries, primarily real estate and financial services. Investors from the rest of the world are also associated with service industries, but they also invest in the automotive and manufacturing industries. Yet, even these investors are equally likely to invest along either side of the border. Furthermore, when including all cities except for Belgrade in the analysis, there is no evidence of a discontinuity in any of the characteristics that may affect the allocation of FDI in Serbia, which provides a further indication that any effect captured by the model can be attributed to a Habsburg cultural impact. These graphs are included at the end of the paper.

Figure 5: Regional characteristics of Serbia (district).



Note: These figures portray how regional and economic characteristics in Serbia vary across the former empire border. The vertical axis denotes the average value for a given variable, while the horizontal axis denotes the distance in kilometers from the border. Negative values represent the distance to the border from cities that were never in the former empire, while positive values represent the distance to the border from cities that were located in the former empire territory. Belgrade and five surrounding cities are excluded from this analysis.

VI. Results from the regression discontinuity models

The main results of this analysis come from estimations including all cities in Romania and Serbia with populations of at least 5,000 individuals. It is important to include all possible cities that could have been selected by foreign investors to avoid any selection bias. However, once accounting for these additional cities, the sample size increases from 326 cities to 3,175 cities. For this reason, it is important to verify that the main results obtained from the model are not solely being driven by an increasing sample size. Before presenting the main results of the analysis using the full data set, we present the results for the subset of the data that features only the cities that were selected for investment. Table 1 presents these results which indicate that there are between 1.2 and 1.5 additional empire projects per 10,000 individuals at the former empire border. These results are robust even when including the five cities surrounding Belgrade. Results from an estimation including these five cities are presented at the end of the paper.

Table 1: Empire effect on empire investments for selected cities.

$FDI_{Habsburg_i}$	Polynomial Models			Local Linear
	2nd Order	3rd Order	4th Order	
Estimate	1.298**	1.443*	1.327*	1.490*
Std. error	0.647	0.866	0.746	0.858
Observations	326	326	326	130
Bandwidth				59.66

Note: a) This table presents estimates of the effect of Habsburg Empire affiliation on the number of Habsburg investments per 10,000 individuals. Each column represents a different estimation of Equation 1. Columns 1-3 present the estimates of the discontinuity in Habsburg investments at the former empire border using various orders of polynomials in distance from the border as controls. Column 4 uses a local linear approximation with an optimal bandwidth of 59.66 kilometers. Country fixed effects and robust standard errors are used in every estimation. These estimations feature only the cities that were selected for foreign investment. The analysis excludes Belgrade and five other surrounding cities. b) $p < 0.10^*$, $p < 0.05^{**}$, $p < 0.01^{***}$

Table 2: Empire effect on empire investments.

$FDI_{Habsburg_i}$	Polynomial Models			Local Linear
	2nd Order	3rd Order	4th Order	
Estimate	0.242**	0.311**	0.326**	0.277**
Std. error	0.107	0.145	0.144	0.118
Observations	3175	3175	3175	1689
AIC	6403.268	6405.838	6405.425	
Bandwidth				84.84

Note: a) This table presents estimates of the effect of Habsburg Empire affiliation on the number of Habsburg investments per 10,000 individuals. Each column represents a different estimation of Equation 1. Columns 1-3 present the estimates of the discontinuity in Habsburg investments at the former empire border using various orders of polynomials in distance from the border as controls. Column 4 uses a local linear approximation with an optimal bandwidth of 84.84 kilometers. Country fixed effects and robust standard errors are used in every estimation. The analysis excludes Belgrade and five other surrounding cities. b) $p < 0.10^*$, $p < 0.05^{**}$, $p < 0.01^{***}$

Table 2 reports the main estimation results of the analysis using Equation (1) and $FDI_{Habsburg_i}$ as the dependent variable. In this table, we only report the estimate of β_1 , the coefficient on the empire indicator variable, which measures the empire treatment effect that we capture with the spatial regression discontinuity design. The treatment effect captured is the estimated discontinuity in empire investments at the border. Each column in the table represents a separate estimation of the same equation. In the first three columns, we present results using the full sample and various orders of polynomials of the distance to the border as control variables. The fourth column presents the results from a local linear approximation of the equation with a bandwidth of 84.84 kilometers on either side of the border. This optimal bandwidth is obtained using the methodology proposed by Calonico, Cattaneo, and Titiunik (2014).

Table 3: Polynomial models over various bandwidths.

$FDI_{Habsburg_i}$	2nd Order Polynomial				
	Full Sample	126 km	Optimal	56 km	42 km
Bandwidth					
Estimate	0.242**	0.309**	0.327**	0.300**	0.075
Std. error	0.107	0.142	0.151	0.135	0.105
Observations	3175	2389	1698	1111	795

Note: a) This table presents estimates of the effect of Habsburg Empire affiliation on the number of Habsburg investments per 10,000 individuals. Each column represents a different estimation of Equation 1 using various bandwidths. A second order polynomial in distance and country fixed effects are used as controls in the estimation. Robust standard errors are used in every estimation. This analysis excludes Belgrade and five other surrounding cities. b) $p < 0.10^*$, $p < 0.05^{**}$, $p < 0.01^{***}$

Table 4: Local linear models over various bandwidths.

$FDI_{Habsburg_i}$	Local Linear				
	Full Sample	126 km	Optimal	56 km	42 km
Bandwidth					
Estimate	0.154**	0.220**	0.277**	0.313**	0.376**
Std. error	0.060	0.091	0.118	0.149	0.174
Observations	3175	2389	1698	1111	795

Note: a) This table presents estimates of the effect of Habsburg Empire affiliation on the number of Habsburg investments per 10,000 individuals. Each column represents a different estimation of Equation 1 using various bandwidths. These estimates are based on a local linear approximation with country fixed effects as controls. Robust standard errors are used in every estimation. This analysis excludes Belgrade and five other surrounding cities. b) $p < 0.10^*$, $p < 0.05^{**}$, $p < 0.01^{***}$

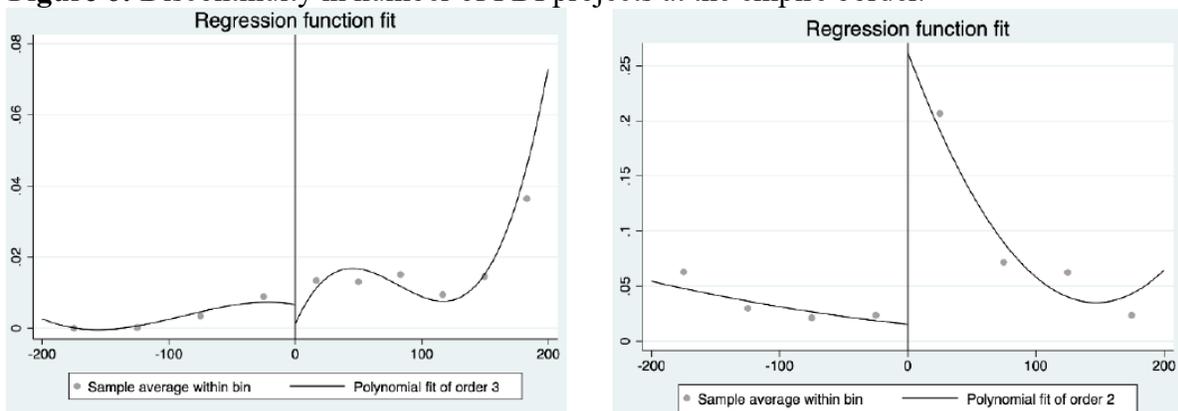
All model estimates show statistically significant results that demonstrate direct evidence of a sharp increase in empire projects per 10,000 individuals at the border. The magnitude of this increase ranges from 0.24 to 0.32 additional empire investments per 10,000 individuals. This is robust to various specifications of the model and various bandwidths. In Table 3, we present results from estimations of the model including a second order polynomial of distance as a control over various bandwidths. These bandwidths range from the full sample size of approximately 200 kilometers to 42 kilometers from the former Habsburg border. Only in the narrowest bandwidth of

42 kilometers does the estimate lose its significance. All other results presented are statistically significant at the 5% level and are stable, with around 0.3 additional Habsburg investments per 10,000 individuals. In Table 4, we present the results from a local linear approximation of the model again using the same range of bandwidths. In this estimation, the results are again stable and statistically significant, even using the narrowest bandwidth. These tables provide evidence that the main results of the model are not sensitive to bandwidth or model choice.

Alternative specifications of the model

Throughout Habsburg rule, Romanians and Serbians often engaged in disputes with their Hungarian neighbors. The regions of Romania and Serbia formerly belonging to the Habsburg Empire still maintain large Hungarian populations. However, the relations of Romanians and Serbians with these groups are still strained. In Romania, the large Hungarian groups of Transylvania still demand their independence. For this reason, it is important to check that the discontinuity in Habsburg investment is not solely being driven by Hungarian investors that are locating in regions where Hungarian is spoken. Figure 6a shows the average number of FDI projects made by Hungarian investors per 10,000 individuals. In this figure, there is no evidence of a discontinuity at the Habsburg border. This is an important finding because it suggests that the main results of the model are not solely driven by Hungarian investment. Interestingly, there is evidence that investment gradually increases in the former empire territory, especially as distance from the border increases. This indicates that Hungarian investors may be locating in regions that are primarily Hungarian. Since the average number of Hungarian projects increases with distance from the empire border, it is likely that Hungarian investors are locating in cities that are closer to the border with Hungary. This is consistent with our second hypothesis. Due to potential negative associations that Romanians and Serbians may hold for Hungarians, Hungarian investors may choose to locate in areas that are predominantly Hungarian, where such investments may be viewed more positively by the local community. Figure 6b shows the average number of FDI

Figure 6: Discontinuity in number of FDI projects at the empire border.



(a) Average Hungarian FDI per 10,000

(b) Average Empire FDI excluding Hungarians

Note: These figures portray how FDI varies across the former empire border. The vertical axis denotes the average value of FDI projects per 10,000 individuals, while the horizontal axis denotes the distance in kilometers from the border. Negative values represent the distance to the border from cities that were never in the former empire, while positive values represent the distance to the border from cities that were located in the former empire territory.

projects per 10,000 individuals from all Habsburg investors excluding Hungary. Even after excluding the Hungarian investors, there is clear evidence of a discontinuity at the Habsburg border. In fact, the graph looks almost identical to the graph using the main investment group. This reinforces the fact that the results are capturing evidence of a Habsburg cultural effect.

Across the empire’s reign, Austria served as the heart of the Habsburg Empire. Historically, Austrian leaders managed the transition to Habsburg rule, and it was Austrian capital that invested in infrastructure development and the development of industry in the Eastern regions of the empire. For these reasons, it is likely that Austrians formed stronger historic business relationships in former Habsburg territories than other former Habsburg members. To test this hypothesis, we test the effect of the Habsburg border on the number of Austrian investments per 10,000 individuals. Table 5 presents the results from the two specifications of the model considered in the main analysis. The results are statistically significant for the local linear and second order polynomial estimation of the model, with estimates of approximately 0.09 additional Austrian investments per 10,000 individuals at the border. While the estimates lose some precision when incorporating higher orders of polynomials, this specification of the model suggests that Austrian investors hold important historical and cultural ties to communities in the former empire regions of Romania and Serbia.

Table 5: Empire effect on Austrian investments.

<i>FDIAustria_{it}</i>	Polynomial Models			Local Linear
	2nd Order	3rd Order	4th Order	
Estimate	0.0978**	0.077	0.060	0.090**
Std. error	0.045	0.055	0.056	0.043
Observations	3173	3173	3173	1049
AIC	5679.777	5683.541	5683.288	
Bandwidth				53.54

Note: a) This table presents estimates of the effect of Habsburg Empire affiliation on the number of Austrian investments per 10,000 individuals. Each column represents a different estimation of Equation 1. Columns 1-3 present the estimates of the discontinuity in Austrian investments at the former empire border using various orders of polynomials in distance from the border as controls. Column 4 uses a local linear approximation with an optimal bandwidth of 53.54 kilometers. Country fixed effects and robust standard errors are used in every estimation. This analysis excludes Belgrade and five other surrounding cities. b) $p < 0.10^*$, $p < 0.05^{**}$, $p < 0.01^{***}$

VII. Robustness checks

In this section, we consider two additional robustness checks. In the first check, we include a set of border fixed effects for the main analysis. To implement this approach, we divide the former Habsburg border into 15 equal segments. When calculating the distance from each city to the border, we identify the segment of the border that each city in the sample is closest to. We choose to include these controls in the analysis in order to control for varying regional characteristics along the historical border. For example, in Romania, some regions along the border in the former Habsburg territory have large groups of Hungarian speakers. Additionally, in Serbia, the capital city of Belgrade falls on the border of the former Habsburg Empire. While Belgrade and five other

neighboring cities are removed from the main analysis, the estimates could still be capturing some agglomeration effects in the region. We present the results controlling for these factors in Table 6. The estimate remains statistically significant at the 5% significance level across all specifications of the model. The estimate is stable ranging from approximately 0.24 to 0.32 additional Habsburg investments per 10,000 individuals.

Table 6: Robustness check for empire effect on empire investments.

$FDI_{Habsburg_i}$	Polynomial Models			Local Linear
	2nd Order	3rd Order	4th Order	
Estimate	0.241**	0.313**	0.325**	0.283**
Std. error	0.108	0.142	0.146	0.121
Observations	3172	3172	3172	1687
AIC	6380.4	6382.749	6382.282	
Bandwidth				84.84

Note: a) This table presents estimates of the effect of Habsburg Empire affiliation on the number of Habsburg investments per 10,000 individuals. Each column represents a different estimation of Equation 1. Columns 1-3 present the estimates of the discontinuity in Habsburg investments at the former empire border using various orders of polynomials in distance from the border as controls. Column 4 uses a local linear approximation with an optimal bandwidth of 84.84 kilometers. Country fixed effects, border fixed effects, and robust standard errors are used in every estimation. This analysis excludes Belgrade and five other surrounding cities. b) $p < 0.10^*$, $p < 0.05^{**}$, $p < 0.01^{***}$

Table 7: Empire effect on empire investments using placebo borders.

Cutoff	Optimal Bandwidth	RD Estimator	p-value	CI	Obs. Left	Obs. Right
100	38.25	-0.031	0.517	[-0.126, 0.063]	716	2458
75	38.74	0.027	0.307	[-0.024, 0.077]	996	2178
50	42.40	0.034	0.423	[-0.049, 0.116]	1324	1850
25	40.23	-0.026	0.114	[-0.058, 0.006]	1704	1470
0	84.86	0.282	0.02	[0.044, 0.519]	1899	1275
-25	68.92	-0.272	0.142	[-0.634, 0.091]	2112	1062
-50	59.88	-0.066	0.444	[-0.233, 0.103]	2305	868
-75	46.81	0.082	0.29	[-0.07, 0.235]	2501	672
-100	39.5	-0.333	0.139	[-0.774, 0.108]	2700	473

Note: a) This table presents estimates of the effect of Habsburg Empire affiliation on the number of Habsburg investments per 10,000 individuals using a local linear approximation. These estimates come from separate estimations of Equation 1, using a series of false borders that are located in 25 kilometer increments from the true border, which occurs at $c = 0$. Only the true border provides an estimate that is statistically significant. This analysis excludes Belgrade and five other surrounding cities. b) $p < 0.10^*$, $p < 0.05^{**}$, $p < 0.01^{***}$

In the final robustness check, we manipulate the location of the Habsburg border to verify whether any other discontinuities exist in the data. If the initial estimate obtained is solely a “Habsburg” effect, there should not be any discontinuity associated with any other “false border.” To test this assumption, we check for evidence of a discontinuity using false borders located in 25-kilometer increments from the true Habsburg boundary. We find no evidence of a discontinuity on

either side of the true border, further indicating that the effect uncovered in the analysis can be attributed to a “Habsburg” cultural effect. The results from this analysis are summarized in Table 7.

While these robustness checks provide evidence that the main results are not being driven by other measurable factors, future research should investigate other data sources to improve the model. The model could benefit from the addition of better demographic characteristics including educational profiles of the regions as well as language and other cultural characteristics. The language characteristics would be especially important in proving that empire investors are not only being drawn to territories where a higher proportion of the population speaks a common language. It is well known that the former empire territories in Romania and Serbia still contain large Hungarian groups; however, without good regional data on the languages spoken in these areas, it is difficult to verify whether there is a jump in the number of people speaking Hungarian at this former empire border. It is also important to evaluate whether there exists a jump in the number of people speaking German at this border. Future research should also further investigate the industrial composition of the region and the investors. It would be interesting to examine the patterns of investment by industry and nationality of the investor to determine whether agglomeration characteristics matter for all types of investors.

VIII. Conclusion

This study demonstrates that previous Habsburg Empire affiliation significantly influenced the allocation of FDI in the former empire territories of Romania and Serbia today. Comparing the number of foreign investment projects in cities on either side of the long-gone Habsburg border, we find a higher number of investments, originating from countries that were also historically affiliated with the Habsburg Empire, in former empire territories. We argue that this difference in investment along the former empire border can be attributed to persistent cultural ties formed through historic business relationships. The Habsburg Empire made several important contributions to the development of the eastern portions of the empire. Perhaps the most important contributions they made were in the development of infrastructure and industry, which we argue led to the development of a historical business relationship which persisted over time.

Using a geographic regression discontinuity design, we present evidence of a sharp increase in the number of Habsburg investments along the former empire border. Specifically, we find an increase of 0.24 to 0.32 additional Habsburg investments per 10,000 individuals in former empire territories. This study provides a unique setting in which to examine the impact of cultural ties since the former Habsburg Empire had a border which ran through several present-day countries, including Romania and Serbia. This feature allows us to measure the effect of within country variation in culture on FDI. Since cities on either side of the border have shared formal institutions for over 100 years, this methodology allows us to separate the cultural impact of empire affiliation on FDI that cannot be explained by differing institutions. Through the analysis, we present evidence that the number of investment projects from the rest of the world do not change across this border, indicating that the former empire territories of Romania and Serbia are not simply offering better business environments for foreign investors. In examining other demographic and industrial characteristics of the regions in the analysis, we find only a few discontinuities in the industrial composition of the territories. These discontinuities are in manufacturing and agricultural employment. The former empire territories have stronger manufacturing sectors and

lower agricultural employment today. However, it is unlikely that the industrial composition is driving the main results. The top industries of investment for Habsburg investors are service industries, primarily real estate and financial services. As investors from the rest of the world are also primarily investing in services, industrial composition alone cannot explain the results of the model. While Romania and Serbia still have large populations of Hungarians throughout the former empire territories, the effect found is not attributed to Hungarian investors locating in Hungarian communities. The main results of the model are robust to the exclusion of the Hungarian group. In fact, we find no discontinuity across the former empire border for Hungarian investors. Rather, we present evidence of Hungarian investment increasing in the former empire territory and increasing in distance, suggesting that Hungarian investors are locating in areas that contain more Hungarians and in areas that are most likely closer to the border with Hungary. Furthermore, we show that a discontinuity still exists when considering only Austrian investors. This is in line with the main hypothesis of the model, since Austrians were most likely to develop the strongest cultural business ties in the area. The main findings of the model are robust to various specifications of the model including using various bandwidths and border fixed effects. Even more compelling, the results are robust to a falsification test using placebo borders located in 25-kilometer increments from the true border. In this test, only the true border provides statistically significant results for the estimate of the increase in Habsburg investment projects at the former empire border.

It is widely recognized in both the economics and international business literature that culture can impact the allocation of FDI. Culture can not only impact the location choice of a foreign investor, but it can also impact the long-term profitability of the foreign firm in the new country. While these implications are presumed, it has been difficult to formally test these assumptions since culture is inherently difficult to measure. Previous research attempts to measure culture through institutions, language, religion, or the Hofstede index; however, these characteristics are typically measured at the country level, making it difficult to disentangle the effect found from any other characteristic that also varies at the national level. By measuring culture through a historic empire affiliation, we provide evidence of the impact that cultural ties can have on FDI that is separate from other factors.

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Appendix A: Tables

Table 8: Empire effect for all selected cities.

$FDI_{Habsburg_i}$	Polynomial Models			Local Linear
	2nd Order	3rd Order	4th Order	
Estimate	1.152*	1.181	0.991	1.370*
Std. error	0.628	0.768	0.627	0.767
Observations	330	330	330	114
AIC	1396.259	1400.243	1399.035	
Bandwidth				51.32

Note: a) This table presents estimates of the effect of Habsburg Empire affiliation on the number of Habsburg investments per 10,000 individuals. Each column represents a different estimation of Equation 1. Columns 1-3 present the estimates of the discontinuity in Habsburg investments at the former empire border using various orders of polynomials in distance from the border as controls. Column 4 uses a local linear approximation with an optimal bandwidth of 51.32 kilometers. Country fixed effects and robust standard errors are used in every estimation. This analysis includes only the cities that were selected for investment, apart from Belgrade. b) $p < 0.10^*$, $p < 0.05^{**}$, $p < 0.01^{***}$

Table 9: Empire effect for all cities.

$FDI_{Habsburg_i}$	Polynomial Models			Local Linear
	2nd Order	3rd Order	4th Order	
Estimate	0.248**	0.275**	0.276**	0.277**
Std. error	0.111	0.138	0.133	0.120
Observations	3180	3180	3180	3180
AIC	6403.268	6405.838	6405.425	
Bandwidth				84.21

Note: a) This table presents estimates of the effect of Habsburg Empire affiliation on the number of Habsburg investments per 10,000 individuals. Each column represents a different estimation of Equation 1. Columns 1-3 present the estimates of the discontinuity in Habsburg investments at the former empire border using various orders of polynomials in distance from the border as controls. Column 4 uses a local linear approximation with an optimal bandwidth of 84.21 kilometers. Country fixed effects and robust standard errors are used in every estimation. This analysis includes all cities in the sample, apart from Belgrade. b) $p < 0.10^*$, $p < 0.05^{**}$, $p < 0.01^{***}$

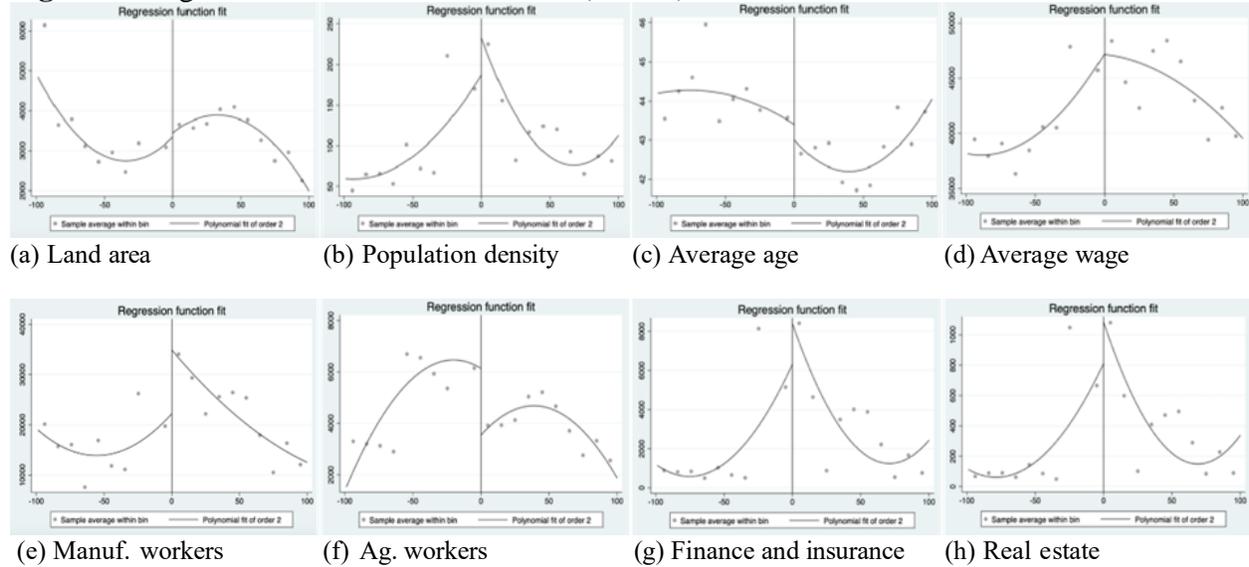
Table 10: Effect on empire investments excluding Hungary.

$FDI_{Habsburg_i}$	Polynomial Models			Local Linear
	2nd Order	3rd Order	4th Order	
Estimate	0.236**	0.298**	0.327***	0.266**
Std. error	0.106	0.144	0.143	0.115
Observations	3175	3175	3175	1700
AIC	6411.842	6414.77	6414.279	
Bandwidth				85.59

Note: a) This table presents estimates of the effect of Habsburg Empire affiliation on the number of Habsburg investments per 10,000 individuals. Each column represents a different estimation of Equation 1. Columns 1-3 present the estimates of the discontinuity in Habsburg investments at the former empire border using various orders of polynomials in distance from the border as controls. Column 4 uses a local linear approximation with an optimal bandwidth of 85.59 kilometers. Country fixed effects and robust standard errors are used in every estimation. This analysis excludes Hungarian investors, the city of Belgrade, and 5 surrounding suburbs. b) $p < 0.10^*$, $p < 0.05^{**}$, $p < 0.01^{***}$

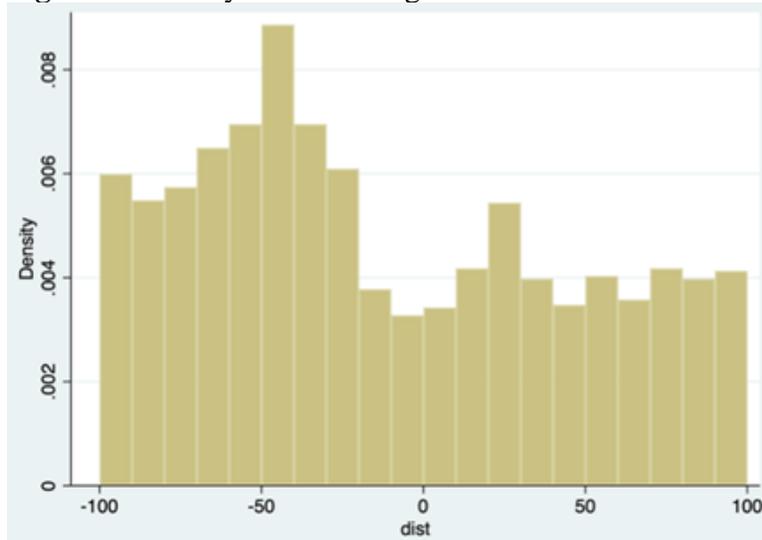
Appendix B: Figures

Figure 7: Regional characteristics of Serbia (district).



Note: These figures portray how regional and economic characteristics in Serbia vary across the former empire border. The vertical axis denotes the average value for a given variable, while the horizontal axis denotes the distance in kilometers from the border. Negative values represent the distance to the border from cities that were never in the former empire, while positive values represent the distance to the border from cities that were located in the former empire territory. Only Belgrade is excluded from this analysis.

Figure 8: Density of the forcing variable.



Note: This figure examines the density of the forcing variable, distance to the border in kilometers from cities in the analysis. This figure serves to establish that investors are not sorting into the former empire territory. To verify that this is the case, there should be no evidence of a discontinuity in the number of cities at the border. While there are more cities in the non-empire territory, this figure presents evidence that there is no discontinuity in the number of cities at the former empire border.