Does the Future Have an Ancient Heart? Experimental Evidence on the Origins of Savings

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Abstract

Does imperial legacy causally determine contemporaneous savings behaviors? If so, through what channels? I investigate these questions through a spatial regression discontinuity design (RDD) using experimental and survey data collected in present-day Romania across the Habsburg-Ottoman imperial border. I develop a simple model to motivate my analysis, which predicts that history can affect savings indirectly through risk and time preferences or directly through differential access to formal financial institutions. In my empirical analysis I confirm that there is indeed historical persistence in savings. Farmers living in Habsburg regions ("Habsburgs") save more than their Ottoman counterparts. I find no evidence that savings legacies are transmitted through preferences and instead argue that transactions costs in the formal financial sector are the main mechanism through which history affects savings: Habsburgs live significantly closer to formal financial institutions. Decreasing the distance to a financial institution is associated with a significant increase in accumulated assets. Lastly, I explore alternative mechanisms through which imperial legacies may transmit, such as cultural norms of savings or portfolio choice, as well as trust in formal financial institutions, and find no evidence supporting these hypotheses.

1 Introduction

Savings is critical to economic development. At the macroeconomic level, it is a strong determinant of future growth. At the microeconomic level, it is an important tool for smoothing consumption and mitigating risks, especially for the poor. Nonetheless many of the world's poor do not save enough. Figure 1 suggests that both within and between countries, the poor consistently save too little, especially in formal financial assets. Understanding the origins of these patterns is an issue that is relevant to both developing and developed economies, alike.

Romania is the second poorest country in the European Union (EU), with 33% of the population employed in agriculture − 68% of whom work on farms under 2 hectares − and a per capita GDP of less than $9,500 (Eurostat, 2010; World Bank Development Indicators, 2013). Moreover, household savings rates in Romania are consistently the lowest in the EU (AMECO, 2014).[1] Why don't Romanians save more? Recent literature in development economics has placed emphasis on understanding why the poor save too little. While numerous hypotheses exist, from social networks (Karlan, 2005; Karlan et al., 2009) to hyperbolic time preferences and an inability to commit to saving (Ashraf et al., 2006; Tanaka et al., 2010; Bauer et al., 2012; Gine et al., 2013; Dupas and Robinson, 2013) or the existence of "temptation goods" (Banerjee and Mullainathan, 2010), the role of history has been largely ignored. This paper explores whether imperial legacies in savings behaviors exist today; and if so, through what mechanisms? To answer these questions, I implement a field experiment around historical imperial boundaries in present-day Romania.

Romania embodies a rich economic and political history. For hundreds of years prior to World War I, the country was split between two economic and political powers: the Habsburg and Ottoman empires. To what extent might these histories have influenced economic outcomes in Romania today? A thriving set of literature confirms that history matters in determining economic development (see Nunn (2009) for a review). Specifically

[1] AMECO defines the household savings rates as gross savings as a percentage of gross disposable income.

in regard to Habsburg vs. Ottoman rule, new research suggests that throughout Eastern Europe differences in imperial histories have determined contemporaneous trust preferences (Becker et al., 2011; Grosjean, 2011*b*; Mendelski and Libman, 2011), institutional quality (Dimitrova-Grajzl, 2007; Becker et al., 2011), judicial performance (Mendelski and Libman, 2011), financial development (Grosjean, 2011*a*), belief in democratic ideals (Grosjean and Senik, 2011; Grosfeld and Zhuravskaya, 2014), and transportation infrastructure (Grosfeld and Zhuravskaya, 2014). While these studies have substantiated the importance of history in economic development, few have been able to identify the channels through which historical trends persist (Nunn, 2009).

The theoretical and empirical savings literature postulates that a primary determinant of savings is economic preferences for risk and time. To the extent that history determines these preferences, one might expect to observe indirect imperial legacies in savings outcomes through historical persistence in preferences. In addition, given the vast literature concerning institutional legacies in economic development and infrastructure (see Nunn (2009) for a review), as well as growing theoretical (Bisin and Verdier, 2000, 2001; Tabellini, 2008) and empirical (Grosjean, 2011*b*,*a*; Grosjean and Senik, 2011) evidence of cultural persistence in economic outcomes, direct imperial effects on savings independent of preferences are plausible.

Figure 2 illustrates that regional disparities in savings rates existed as early as the 19th century: Habsburg provinces that had previously been exposed to Ottoman rule saved less than their purely Austrian counterparts. The first task of this study, therefore, is to determine whether or not these patterns have lingered into the 21st century. In the event there is evidence of historical persistence in savings behaviors, the second task is to identify the channels of transmission. The paradigm in Figure 4 represents the framework that motivates my analysis. I hypothesize through a theoretical model developed in section 4 that history can affect savings *indirectly* through risk and time preferences, and *directly* through transactions costs in the formal financial sector.

To test my hypotheses, I designed a spatial discontinuity experiment across the Habsburg-Ottoman border in present-day Romania among a group of rural farmers who recently applied to an EU conditional cash transfer program. Primary data collection consisted of experimental games intended to elicit risk and time preferences, as well as a household survey that measured individual, household, and farm characteristics. I combine the experimental and survey data in order to determine whether imperial history affects savings behaviors, and the mechanisms through which these behaviors have transmitted over time.

The contributions are threefold. First, this study highlights a largely unexplored feature of savings patterns among the poor−imperial history. It is a well-substantiated fact that historical events are an important determinant of economic development, as they influence institutions, trust, education, infrastructure, health, and technology (Nunn, 2009). Little attention, however, has been dedicated to quantifying the effects of historical legacy on savings. To the extent that savings rates have serious implications for economic development, it is crucial to understand their origins. In addition, while the empirical savings literature has made significant progress in quantifying the role of economic preferences in savings, we know little about how these preferences arise, especially in middle-income countries like Romania. This paper is the first to identify the relationship between imperial legacy, preferences, and savings. The second contribution of this study is methodological. While much of literature identifying why history matters has recently introduced micro data and creative identification strategies such as IV, falsification tests, and regression discontinuity, this paper is the first to the best of my knowledge to use experimental economic methods. To the extent that experiments allow researchers to monitor realistic behavior, rather than potentially biased answers to stated preference questions, the methodological contribution is large. Lastly, this paper follows in the tradition of Nunn and Wantchekon (2011) and dedicates considerable focus to identifying the channels through which historical legacy affects economic development. Diagnosing these channels of causality remains one of the primary unanswered questions in the literature.

In the analysis that follows I confirm that there is indeed historical persistence in savings behaviors. Farmers living in Habsburg regions ("Habsburgs") are 16 percentage points more likely to have saved 1,000 Lei or more ($\sim$ 30 USD or a month's salary in Romania) and have accumulated 240 Lei more in assets than their Ottoman counterparts−a 30 percent increase from the mean. When I examine the indirect channels of transmission, I find causal evidence of imperial legacies in risk and time preferences: Habsburgs are more willing to take financial risk and exhibit higher discount rates. Theory predicts, however, that higher risk tolerance and discount rates should be correlated with lower savings. I therefore rule out the possibility of transmission through preferences and instead argue that transactions costs in the formal financial sector are likely driving the results: Habsburgs live significantly closer to formal financial institutions. Moreover, decreasing the distance to a financial institution by 1 percent is associated with a 6 to 8 percentage point increase in the probability of having saved 1,000 Lei or more, and an approximate 130 to 180 Lei increase in accumulated assets−a 17 to 23 percent increase from the mean.

As a robustness check that speaks to the literature on cultural transmission (Bisin and Verdier, 2000, 2001; Hauk and Saez-Marti, 2002; Guiso et al., 2006; Grosjean, 2011*b*; Guiso et al., 2013), which suggests that shared savings norms embedded in imperial history could perpetuate differences in savings cultures today, I test for cultural transmission in savings and find no evidence supporting this hypothesis. Furthermore, I test whether there is cultural transmission in the preference for formal vs. informal assets, which could affect savings rates. for example, if returns to informal assets are consistently lower than formal assets (Zimmerman and Carter, 2003; Karlan et al., 2014), and reject this as a plausible channel. In addition, I find no evidence of disparate trust in formal financial institutions, nor do I find that trust in financial institutions has any effect on overall savings. Lastly, I run a falsification test, which arbitrarily moves the imperial border to the northwest and southeast, and find no evidence of a placebo Habsburg effect, thereby validating a causal interpretation of the original results.

The paper proceeds as follows. The next section discusses the historical setting in which differential savings patterns might have emerged, while Section 3 briefly places my work in the context of the existing literature. In Section 4 I present a simple theoretical framework that motivates the identification strategy, estimating equations, and results presented in Sections 5 and 6. Section 7 explores robustness checks, Section 8 offers a discussion of the results as they relate to the channels of persistence, and Section 9 concludes.

2 Habsburg vs. Ottoman Imperial History

2.1 Political and Legal Institutions

As Figure 5 illustrates, the Habsburg and Ottoman empires spanned much of what is Central and Southeastern Europe today. The imperial border divides the modern Romanian state in half, with the Habsburg territories of Transylvania and Bukovinia to the northwest and the Ottoman-ruled Romanian vassal states of Wallachia and Moldavia to the southeast. Each region experienced respective imperial rule for well over 100 years (see Table 1).[2] Although Romania is a contiguous country today, with a largely homogenous population − 89% are ethnic Romanian and 87% identify as Orthodox Christians (Romanian Census, 2011; see Figure 16)− important institutional differences existed between the nation's imperial histories that defined the early stages of political and economic development.

Political distinctions between the two empires may best be classified through the inclusive vs. extractive framework proposed by Acemoglu and Robinson (2012). Habsburg political institutions, while centralized through parliament in Vienna, were highly decentralized at the local levels, with an administration of civil servants and county governors established

[2]Grosjean (2011*b*) shows that having belonged to a particular empire for over 100 years or more can have significant lasting effects on trust. In addition, she shows that longer exposure to Ottoman rule is significantly correlated with lower financial development (Grosjean, 2011*a*). Note that while portions of the modern Romanian state did formerly experience Ottoman rule, I consider their more recent inclusion in the Habsburg empire during the late 18th and early 19th centuries − a time of rapid developments in political and economic thought − to have been more important to modern economic development.

in the mid 18th century. (Becker et al., 2011). Ottoman bureaucracy, on the other hand, was heavily centralized and run by officials who regarded their positions as opportunities for private gain (Dimitrova-Grajzl, 2007). The Romanian vassal states had no political representation in Ottoman government and instead obtained political privilege through the amount of tribute paid to the Sultan. Payments were sent from Romania to Istanbul and could come in three forms: 1) annual monetary tribute; 2) gifts from newly throned Romanian princes; or 3) supply of food and raw materials to Istanbul (Sugar, 1977).

The empires embodied stark differences in regard to property rights, as well. Land tenure institutions in the Habsburg empire emerged as early as the 17th century, establishing *zadruga* as a legal entity in 1630 (Dimitrova-Grajzl, 2007), and underwent significant reform throughout the 18th and 19th centuries (Good, 1984). While the Habsburgs emancipated the serfs in 1848, granting formal land rights to peasants (Good, 1984), the Ottomans established a much more extractive tenure system in which land was formally owned by the Sultan, with conditional tenure granted to those who paid tribute (Sugar, 1977).

Moreover, legal institutions in the Ottoman empire were notoriously corrupt, known for their clientelist networks and rampant nepotism (Sugar, 1977; Dimitrova-Grajzl, 2007; Mendelski and Libman, 2011). Black market activity was common in Ottoman lands, particularly as imperial power began to decline in the early 20th century (Dimitrova-Grajzl, 2007). In contrast, Habsburg legal institutions emphasized accountability of judges through the Ministry of Justice and disciplinary councils (Mendelski and Libman, 2011) and an efficient bureaucracy who attempted to establish trust by providing consistent rule and discouraging radical shifts in administration (Dimitrova-Grajzl, 2007). These differences have been shown to have perpetuated more demand for litigation in the Habsburg regions of Romania today (Mendelski and Libman, 2011), and a lower functioning rule of law in former Ottoman regions of Southeastern Europe (Dimitrova-Grajzl, 2007). To the extent that political and legal institutions interact with financial institutions, these differences could have important effects on savings and investment incentives today.

2.2 Financial Institutions

The development of the financial sector in each empire faced significantly disparate trajectories that have been shown to persist today (Grosjean, 2011*a*). These differences are often thought to have originated in the opposing treatment of usury by the main religious institutions in each empire. Following Islamic law, the prohibition on interest remained a primary feature of Ottoman finance well into the 19th Century. In contrast, Roman Catholicism − the official religion of the Habsburg empire − abolished usury restrictions in the early 17th century, while the Orthodox church never prohibited interest in the first place−although, there were restrictions for clergy (Pamuk, 2004).

The Islamic ban on interest encouraged the development of many informal lending networks, such as business partnerships, transfers of debt, and letters of credit (Pamuk, 2004). Tax-farming arrangements between the central bureaucracy and those with liquid capital assets created strong disincentives to develop formal public financial institutions (Pamuk, 2004), while Islamic inheritance law and its discouragement of corporations hindered the establishment of private ones (Kuran, 2005). Consequently, the first formal lending bank in the Ottoman empire was not established until the 1840s, and the central bank was not instituted until 1863 (Pamuk, 2004). In contrast, private banking houses in the Habsburg empire flourished as early as the late 17th century. The first savings bank was established in 1819 and numerous credit cooperatives formed in the early 1800s to serve small saver and borrowers throughout the empire (Good, 1984). Accordingly, banks played a significant role in industrial development throughout the 19th century, constituting the majority of joint-stock enterprises in the second half of the century (Good, 1984).

The legacy of Ottoman financial institutions has been shown to have had a lasting negative effect on financial development both between and within countries today, even when controlling for Islamic religious beliefs (Grosjean, 2011*a*). In fact, the Ottoman impediment to financial development in Romania was documented as early as 1910, in which only 140 banks existed in Wallachia and Moldavia combined, versus the 430 in Habsburg Transylvania

(Mendelski and Libman, 2011).[3] Descriptive evidence from my own data suggests that these disparities may still exist within Romania. Figure 3 reveals that the number of financial institutions (i.e., credit, insurance, and banks) per capita is significantly different across the imperial border today. This trend appears to be consistent within the study region, Suceava, as Table 2 indicates. Even when controlling for population and geophysical characteristics[4], people in the former Habsburg regions of Suceava live significantly closer to formal banks (proxied for by the number of bank-affiliated ATMs available in a given district) and have more banks in rural areas.

To the extent that financial development affects savings, the historical differences in imperial financial development could have important consequences for this study. Stylized data in Figure 2 suggests that discontinuities in savings patterns existed as early as the 19th century. Each bar represents a Habsburg province and its per capita bank deposits as a percent of provincial GDP. While all provinces were Habsburg territories at the time, some provinces had formerly been exposed to Ottoman rule. It is clear from the figure that regions that experienced any Ottoman influence typically saved less than purely Habsburg provinces. The primary objective of this study, therefore, is to explore whether these patterns have endured into the present.

2.3 Exogeneity and Enforcement of Borders

Differences in imperial rule should only affect contemporaneous outcomes if the borders between empires were enforced. If the borders were merely symbolic, with a permeable flow of people, ideas, and resources it is unlikely that institutional distinctions would have been able to take hold within a reasonable distance of the border. To the extent that southern Transylvania was considered a 'military frontier' of the Habsburg empire, it is arguable that imperial borders with the Ottomans were strict. Land tenure in these regions depended

[3]Note that Wallachia and Moldavia are double the geographic size of Transylvania.

[4]Controlling for religion is not necessary in Romania, as the vast majority of people identify as either the Orthodox or Catholic (see Figure 16).

on military service and at any given time 50,000 peasants from could be mobilized in the Austrian army (Clyde, 1866).

The study region for this research is located in Suceava County, Romania (see Figure 6), which comprises a particularly important military border between the Habsburg region of Bukovina and the Ottoman-influenced vassal state of Moldavia (see Figure 7). In 1498, Stefan cel Mare, the Moldavian prince revered for great military victories against Poland, Hungary, as well as the Ottomans, was forced to accept Ottoman suzerainty over the Bukovinian and Moldavian regions that now comprise Suceava. Ottoman rule reigned over this region until the late 17th century, when the Russian Empire engaged in a series of Russo-Turkish wars in an attempt to encroach into eastern Moldavia. The Habsburgs, whose states of Transylvania to the west and Galicia (not pictured) to the north, began to grow anxious as a result of the ongoing conflict just across their borders, despite their formal allied relationship with the Russian Empire. The eastern border of Transylvania was only loosely fixed at that time, following the ridge and watershed of the Carpathian Mountains. Therefore, Habsburg delegates were sent to eastern Transylvania and southern Galicia in the late 1760s to demarcate a strict border (Veres, 2014).

It is well documented, however, that as the Russo-Turkish War of 1767-1774 came to a close, these delegates incited a land-grab into northern Bukovina (Veres, 2014). In 1773, the Habsburg emperor Joseph II traveled to Transylvania to monitor the cartographic excursions. In his time there, he observed the vast forest resources in the area and strategic geographic positioning of the Bukovinian region between Galicia and Transylvania, arguing that it would be necessary to annex the territory in order to build a road between the two Habsburg provinces (Veres, 2014). Therefore, in an impressively covert effort, the mapping excursions effectively redrew the boundaries to include Bukovina in Habsburg territory. Distracted by conflict, the Ottomans lacked the resources to rebuff the Habsburg expansionist activities (Veres, 2014). When the war ended in 1774, the international boundaries had already been well-documented, such that Final Convention of Bukovina's borders in 1776 set a

clear boundary between the new Habsburg Bukovina and Ottoman Moldavia (Veres, 2014). Although the Russians defeated the Turks, the 1774 Treaty of Kücük Kaynarca stipulated that Ottomans maintain influence over Moldavia.

It is unclear from the historical literature the extent to which the borders drawn by the Habsburg cartographic excursions were exogenous to economic preferences, financial institutions, and savings behaviors. Some accounts mention resistance by the Ottoman-ruled subjects, who often incited violence against the mapping teams (Veres, 2014). This might make one concerned that the Habsburgs only included regions where people were sympathetic to Habsburg rule and, therefore, more supportive of private property, rule of law, and inclusive institutions. Others, however, claim that the borders were drawn exogenously according to geographic characteristics, such as valleys and watersheds (Lavric, 2012). Figure 8 illustrates the true border in Suceava. It is not clear that this border follows clear geographic patterns. Furthermore, digital elevation modeling (DEM) simulations in which I attempted to "naturally" draw the border did not produce results consistent with the true border. Therefore, in my sampling I drew a Euclidean exogenous border across the region and only sampled villages that lay within both the true and exogenous borders. The details of the sampling design are described in Section 5, below.

While the exogeneity of the borders is unclear, there is, however, sufficient evidence that these borders were enforced. Historical and military accounts reveal that in an attempt to control the Plague, strict cordons were established at all Habsburg borders and remained in place 130 years after the Plague ended (Pesalj, 2013). In addition, strong anti-Ottoman sentiments throughout the Empire required Ottoman subjects already residing in the Monarchy to acquire and maintain paperwork documenting their Ottoman status (Pesalj, 2013). Lastly, the Transylvanian military border remained armed with soldiers until 1876 (Pesalj, 2013). It is, therefore, an arguably reasonable assumption that the Habsburg-Ottoman border in Suceava was strict enough to foster and maintain differences in the people living on either side.

3 Contributions to the Literature

The development economics literature has placed much recent attention on understanding the behavioral motivations for savings and why these may cause the poor to save less. Characteristics such as hyperbolic discounting and low risk aversion preferences (Ashraf et al., 2006; Tanaka et al., 2010; Gine et al., 2013), an inability to commit to saving (Bauer et al., 2012; Dupas and Robinson, 2013), or the existence of "temptation goods" (Banerjee and Mullainathan, 2010) have all been cited as potential explanations for why the poor consistently save too little. In addition, recent work on social networks (Karlan, 2005; Karlan et al., 2009) suggests that these traits may have a social or cultural nature. What we do not know, however, is the extent to which these preferences and behaviors are rooted in history. A primary objective of this work is to address an unexplored feature of the savings literature in order to highlight the additional channels, specifically historical ones, through which savings behaviors are determined.

Furthermore, while the existing literature has made important progress in understanding savings behavior in the developing world, there has been little focus on the relationship between preferences and savings at later stages in the growth trajectory. Recent work by Grosjean (2011a, 2011b) and Grosjean and Senik (2011) suggests that Central European economies exhibit heterogeneity in economic preferences and outcomes that have historical roots. Specifically: 1) patterns of social trust are more homogenous for individuals who live in places that have the same imperial histories (Grosjean and Senik, 2011); and 2) the institutional legacy of the Ottoman Empire in Southeastern Europe is significantly correlated with a lack of financial development today (Grosjean, 2011*a*). In this study, I experimentally identify whether or not preferences are determined by history and use these findings to explore whether historically-rooted preferences are correlated with savings outcomes. Moreover, my empirical strategy allows me to causally identify historical persistence in financial development and elucidate its correlation with savings outcomes in a region that has been largely ignored by the development literature.

While I do not currently have data on nineteenth century per capita savings across the Habsburg-Ottoman divide within Romania, previous work indicates that there were at least differences in the presence of financial institutions between the empires. As of 1911, the Ottoman regions of Romania (i.e., Moldavia, Wallachia, and Dobrogea) had only 151 commercial banks, while in the Habsburg lands, Transylvania had 430 (Mendelski and Libman, 2011). Moreover, Figure 2 confirms that there were also disparities in savings rates in places that experienced differential imperial rule between Habsburgs and Ottomans. While this data is highly stylized, the goal of this study is to causally identify whether differential access to financial institutions and savings patterns exist today.

As Nunn (2009) argues in his review of the literature, it is a fairly well-established fact that history affects economic development. While much of the existing literature has focused on broad cross-sectional studies, a new set of microeconomic studies is evolving (see Nunn (2009) for a comprehensive review). Despite the use of household survey data and cleaner identification through Regression Discontinuity Designs (RDD) and instrumental variables, however, there is no work to my knowledge that employs experimental methods. To the extent that experiments allow researchers to observe behavior, rather than rely on potentially-biased answers to stated preference questions, this study makes a large methodological contribution to the literature.

Furthermore, while we are able to prove with a fair degree of certainty that history does determine economic outcomes, we know very little about the channels through which these effects occur. In particular, there is significant debate over the extent to which institutional or cultural channels matter (Nunn, 2009). Nunn and Wantchekon (2011) develop a novel way of testing whether or not institutional or ethnic (a proxy for "culture") factors have transmitted mistrust in West Africa and find that, while institutional channels play a role, ethnic channels were more important in determining contemporary mistrust (Nunn and Wantchekon, 2011). In this paper, I extensively investigate the channels through which imperial history might affect savings. Following the framework in Figure 4, I specifically attempt to identify

whether observed discontinuities in savings behaviors occur indirectly through history's effect on preferences (a proxy for culture) or directly through transactions costs in the formal financial sector (a proxy for institutions) that are a result of differential persistence in financial development. The next section sketches a simple model to motivate how these indirect and direct channels determine savings behaviors.

4 Theoretical Framework

4.1 Environment and Equilibrium Conditions

The simple framework below is inspired by the Samuelson (1969) two-period portfolio allocation problem, in which an infinite sequence of overlapping representative agents choose to allocate savings between a formal and informal asset. The model predicts that when there are transactions costs in the formal financial sector individuals accumulate less savings. History affects savings decisions indirectly, through cultural transmission in risk and time preferences, and directly through the persistence of transactions costs, which are a function of the demand for formal assets in the first period. Where full expressions or proofs are not provided, refer to section A in the Appendix.

Assume an infinite sequence of representative agents, each who lives two periods. In the first period, the agent earns exogenous income (Y_1) and saves a portion of this income (S_1), which she can invest in either a "formal" (e.g., bank deposits) or "informal" asset (e.g., livestock, grain inventory, or an informal risk-sharing network without full commitment). Let ω represent the portion of savings invested in the "informal" asset and $(1-\omega)$ represent the portion invested in the "formal" asset. As is typical in many developing economies, I assume there are "iceberg" transaction costs associated with the formal financial sector−which could be due to a lack of financial infrastructure or rampant corruption, all potentially rooted in

history−such that a portion τ of all savings invested in the formal asset "melts" away.[5] Furthermore, the formal asset receives a known rate of return $(1 + r)$, while the informal asset receives a stochastic rate of return, Z, such that the weighted rate of return on first period savings is: $[(1 - \omega)(1 + r)\tau + \omega Z]$, where for simplicity $Pr(Z = \lambda) = 1/2$ and $Pr(Z = 1/\lambda) = 1/2$, as Samuelson (1969) assumes.

In the second period the agent does not earn labor income and instead lives entirely off of her accumulated savings, while a new agent commences his first period decisions. Therefore, define the utility maximization problem for a given agent as:

$$\begin{aligned} &\max_{C_1, C_2, S_1, \omega} U(C_1) + \mathbb{E}\,\beta U(C_2) \\ &\text{s.t. } Y_1 = C_1 + S_1 \\ &\qquad S_2 = S_1[(1 - \omega)(1 + r)\tau + \omega Z] \\ &\qquad C_2 = S_2 \end{aligned} \tag{1}$$

where $\tau \in [0, 1]$; $\beta \equiv \frac{1}{(1+\delta)}$; $\delta \geq 0$; $Z = \begin{cases} \lambda & w.p.\ 1/2 \\ \frac{1}{\lambda} & w.p.\ 1/2 \end{cases}$; and $\lambda \geq 0$. Note that C_1 is consumption in period 1 and C_2 is consumption in period 2, δ is the discount rate (i.e., impatience) and β is the discount factor (i.e., patience).[6]

Let utility follow logarithmic form, such that a precautionary motive for savings is preserved (Kimball, 1990) − i.e., savings is increasing in risk aversion. Plugging the constraints from equation (1) into the objective function redefines the consumer problem as:

$$\max_{C_1} \log(C_1) + \beta \log(Y_1 - C_1) + \max_{\omega} \mathbb{E} \log[(1 - \omega)(1 + r)\tau + \omega Z] \tag{2}$$

Taking the first order conditions and solving for the equilibrium choice variables defines the

[5] Note that $\tau \in [0, 1]$, such that $\tau \to 1$ implies decreasing transaction costs and $\tau \to 0$ implies increasing costs.

[6] Since $\beta \equiv \frac{1}{(1+\delta)}$, a higher discount rate δ implies a lower discount factor β and hence less patience for future consumption decisions.

optimal conditions:

$$\begin{aligned} C_1^* &= \frac{Y_1}{\beta + 1} \\ S_1^* &= Y_1 - \frac{Y_1}{\beta + 1} \\ \omega^* &= f(\tau, r, \lambda) \\ S_2^* = C_2^* &= f(S_1^*, \omega^*, \tau, r, \lambda) \end{aligned} \tag{3}$$

The equilibrium above reveals a few important conclusions. The first is consistent with Samuelson (1969) and shows that the optimal portfolio allocation decision is *independent* of the optimal consumption/savings decision. That is, the choice to allocate savings between the formal or informal asset does not affect consumption. The transaction cost τ, however, factors directly into both the optimal portfolio allocation decision, as well as the second-period accumulated savings. To the extent that these transaction costs are rooted in history, this finding could have important implications for understanding the direct effects of history on savings. Similarly, note from S_1^* that time preferences indirectly affect accumulated savings S_2^* through the decision of how much to save in the first period. In addition, due to the nature of the logarithmic utility function, risk preferences should also have a bearing on savings through the precautionary motive (Kimball, 1990). I perform comparative statics in the next section to develop predictions on how preferences and transaction costs may affect savings decisions both indirectly and directly.

4.2 Comparative Statics and Predictions

4.2.1 Indirect Historical Channel: Preferences

Equation (3) shows that the savings decision is a function of time preferences. Taking the partial derivative of S_2^* with respect to $\beta \equiv \frac{1}{1+\delta}$ proves that savings is increasing in patience (or decreasing in the discount rate).

$$\frac{\partial S_2^*}{\partial \delta} < 0 \tag{4}$$

This result is formalized in the hypothesis below.

Hypothesis 1. *Individuals with a higher (lower) discount rate will have accumulated less (more) savings.*

While it is not directly interpretable from the optimal conditions above, the construction of the logarithmic utility function (i.e., an isoelastic utility function with Hyperbolic Absolute Risk Aversion (HARA) and Constant Relative Risk Aversion (CRRA)) carries a precautionary motivation for savings (Kimball, 1990). That is, as risk aversion increases, the desire to smooth consumption across time also increases. Therefore, I should expect to observe that individuals with higher risk aversion (i.e., less tolerance for making risky financial choices) have more savings. This hypothesis is formalized, below.

Hypothesis 2. *Individuals with higher (lower) risk aversion will have accumulated more (less) savings.*

How do the theoretical predictions on preferences relate to historical persistence in savings behaviors? To the extent that imperial history affects preferences, and these preferences persist over time, I may expect to observe indirect historical legacies in savings behaviors. Models of cultural transmission (Bisin and Verdier, 2001; Hauk and Saez-Marti, 2002) formally describe how this process occurs, which is beyond the scope of this paper. Instead, I empirically test whether imperial history affects preferences, and whether or not preferences affect savings. There is a vast literature that provides evidence of historical persistence in preferences, such as trust (Guiso et al., 2004*b*, 2006; Tabellini, 2010; Nunn and Wantchekon, 2011; Becker et al., 2011; Grosjean, 2011*b*; Mendelski and Libman, 2011), but to the best of my knowledge, none have explored persistence in risk and time preferences, nor the extent to which these preferences affect economic outcomes. In Section 6 I test hypotheses (1) and (2) in order to substantiate the role of preferences in savings decisions. I then use the spatial RDD to extrapolate whether or not imperial history determines such preferences. In the event that: a) the theoretical predictions on the relationship between preferences and

savings holds, and b) history affects preferences in a way that is consistent with theory (e.g., Habsburgs save more and are also more risk averse and patient), I may conclude that there is sufficient evidence of indirect channels of historical legacies in savings.

4.2.2 Direct Historical Channel: Transaction Costs

Equation (3) shows that the optimal allocation of savings to the informal asset is a function of transaction costs. Taking the partial derivative of ω^* with respect to τ predicts that this decision is *increasing* in the level of transaction costs:

$$\frac{\partial \omega^*}{\partial \tau} < 0 \text{ if } \mathbb{E}(Z) > \frac{2(r+1)\tau}{(1+r)^2\tau^2+1} \tag{5}$$

which holds for any $r > -1$ and $\lambda > 0$. Since $0 \leq \tau \leq 1$, the result from (5) implies that as transaction costs *decrease* (i.e., τ increases), agents will decrease the proportion of savings allocated to the informal asset (and consequently increase the proportion allocated to the formal asset). Alternatively, as transaction costs increase (i.e., τ decreases), proportionally more savings will be allocated to the informal stochastic asset. These results are formalized in Hypothesis 3.

Hypothesis 3. *As transaction costs in the formal financial sector increase (decrease), the allocation of savings to informal assets will increase (decrease).*

How might transactions costs affect total accumulated savings? In equation (3), τ enters S_2^* directly through the weighted rate of return on savings, but it also enters through the optimal portfolio choice ω^*. Taking the total derivative of S_2^* with respect to τ shows that total accumulated savings is decreasing in transaction costs:

$$\frac{dS_2^*}{d\tau} > 0 \text{ if } (1+r)\tau > 1 \tag{6}$$

Equation (6) predicts that as transaction costs decrease (i.e., τ increases), total accumulated savings should increase, as long as the interest rate on formal savings after adjusting

for transaction costs is greater than 1. Alternatively, as transaction costs increase (i.e., τ decreases), total savings will decline. This result is formalized below.

Hypothesis 4. *As transaction costs in the formal financial sector increase (decrease), total accumulated savings will decrease (increase).*

Since portfolio choice is affected by transactions costs, one might also be interested in understanding how portfolio choice affects savings, holding transaction costs constant. To see this, I take the partial derivative of S_2^* with respect to ω^*, holding τ constant.

$$\frac{\partial S_2^*}{\partial \omega^*} > 0 \text{ if } \mathbb{E}(Z) > (1+r)\tau \tag{7}$$

From equation (7), it is clear that as the proportion allocated to the informal asset increases, total accumulated savings will increase only if the return on the informal asset is larger than the return on the formal asset (after transaction costs). This is formalized in the hypothesis below.

Hypothesis 5. *Increasing the portion of savings allocated to the formal (informal) asset will increase total accumulated savings if the return on the formal (informal) asset is greater than the return on the informal (formal) asset, holding transaction costs constant.*

It is crucial to note that the parameter τ is an exogenous feature of the model and does not fully describe how history might affect savings. As a thought experiment, let the first period represent the imperial era and the second period the present. To the extent that τ was exogenously different across the Habsburg-Ottoman border in the first period and carried forward to the second period, I may expect to observe historical legacies in savings through transactions costs. Within Romania, disparities in the prevalence of commercial banks across the Habsburg-Ottoman border existed as early as 1910 (Mendelski and Libman, 2011). Similarly, Figure 2 suggests that regions under Ottoman influence saved significantly less during this period. Recent literature posits that these patterns have endured over time, with a current lack of financial development in former Ottoman regions of Eastern Europe,

even when controlling for Islamic religion (Grosjean, 2011*a*). Moreover, in my own data I find that there is a persistent imbalance in formal banks across the Habsburg-Ottoman border within Romania today. Figure **??** reveals that the Habsburg regions of Romania have more financial institutions per capita than Ottoman regions. Similarly, Table 2 shows that within Suceava County people live significantly farther away from a bank-affiliated ATM on the Ottoman side than on the Habsburg side.

To formalize the process through which history might affect transactions costs, and in turn savings, restate τ in the first period as τ_1 and let the demand for formal financial institutions in the first period be equivalent to the demand for formal assets. That is: $D_1^F = S_1^*(1-\omega^*)$. In addition, let the supply of financial institutions in the second period be a function of the demand for financial institutions in the first period: $Q_2^F = f(D_1^F)$, where $\frac{\partial f(D_1^F)}{\partial D_1^F} > 0$. That is, assume financial markets are in equilibrium, such that an increase in the demand for financial institutions in the first period increases the quantity supplied in the second period. Furthermore, I normalize $Q_2^F \in [0,1]$, which implies that there is an upper bound on the supply of financial institutions (i.e., $Q_2^F = 1$ indicates a fully developed financial sector).

Let the supply of financial institutions in the second period be equivalent to transaction costs in the second period: $Q_2^F = f(D_1^F) = f(Y_1, \beta, r, \lambda, \tau_1) = \tau_2$, such that the next agent in the sequence who makes his period 1 decisions is faced with transaction costs that are a function of the previous period's transaction costs. That is, $\tau_2^i = \tau_1^j$, where i represents the first agent in the sequence and j represents the next agent. It is easy to show that changes in period 1 transaction costs τ_1 will affect transaction costs in the second period. To begin, note that demand for financial institutions is increasing as period 1 transaction costs decrease:

$$\frac{\partial D_1^F}{\partial \tau_1} > 0 \text{ if: } \mathbb{E}(Z) > \frac{2(1+r)\tau_1}{(1+r)^2\tau^2 + 1} \tag{8}$$

which is satisfied for all $r > -1$ and $\lambda > 0$. Furthermore, since $Q_2^F = f(D_1^F) = \tau_2$, and

$\frac{\partial f(D_1^F)}{\partial D_1^F} > 0$ and $\frac{\partial D_1^F}{\partial \tau_1} > 0 \Rightarrow \frac{\partial \tau_2}{\partial \tau_1} > 0$. That is, future transaction costs are positively correlated with initial transaction costs. If initial transaction costs are low, second period transaction costs will be low (and vice versa). Initial conditions matter.

For the agent j who makes her period 1 decisions faced with $\tau_2^i = \tau_1^j$, it is clear from hypotheses 3-5 above how (the now historically-rooted) transaction costs will affect savings. Initial conditions in transaction costs affect future transaction costs, which will affect the savings of future generations. Even though the initial conditions have disappeared (e.g., there is no reason to believe there are stark differences in the protection of private property, rule of law, or inclusive vs. extractive institutions across the Habsburg-Ottoman border in Suceava today), differences in imperial history have affected contemporaneous bank presence, which determines savings patterns. I formalize this in the hypothesis, below.

Hypothesis 6. *Imperial history has disproportionately affected access to formal financial institutions such that people living in Habsburg regions face better access to formal financial institutions and have therefore accumulated more savings.*

In the following sections I test hypotheses 1-6 in order to differentiate the indirect from the direct channels of historical persistence in savings.

5 Identification Strategy

5.1 Experimental Design and Data Collection

In order to quantify the causal relationship between imperial history and savings, I implemented a "Fuzzy" Spatial Regression Discontinuity Design (RDD) across the Habsburg-Ottoman border in present-day Suceava, Romania. The primary assumption in the spatial RDD methodology is that within a restricted bandwidth of the spatial boundary there is no discontinuous jump in demographic and geophysical covariates, such that any observed discontinuous jump in outcomes across the border may be causally attributed to the discon-

tinuity Lee and Lemieux (2010) − or in this case, imperial history.

In designing my sample frame, it was therefore imperative to ensure that the samples on either side of the exogenous (see Figure 8) imperial border were similar in as many ways as possible. With this in mind, I constructed the sample frame from a group of semi-subsistence rural farmers who had applied to the EU conditional cash transfer program, "Measure 141: Assistance to Semi-subsistence Farmers" (M141)[7]. In order to ensure relative homogeneity across the border, I selected farmers who received application scores[8] between 15 and 55 (out of a possible 75 points) to participate in the study. While I was granted access to the application lists, which included the farmers' villages, application scores, and other information about how they intended to use the cash transfer, I was unable to obtain the physical addresses or phone numbers of the farmers. I, therefore, collaborated with village mayors to inform the farmers of the study and invite them to my experimental sessions. Out of 560 farmers invited by the mayors, 331 participated in the study − an almost 60% participation rate. Of these, 164 live in villages that were formerly ruled by the Habsburg empire, while 167 reside in villages that were once Ottoman[9].

Data collection occurred in the Fall of 2013, after the final harvest, and consisted of both experimental and survey methodologies. In order to increase the efficiency of data collection,

[7]Measure 141 is a conditional cash transfer program offered by the EU to farmers with between 2 and 8 economic size units (roughly €2000 to €8000 annual profits) who would like to transition into commercial farming. Selected applicants receive €1500 each year over 5 years, for a total of €7500. After the third year, recipients are monitored by a M141 representative to ensure that they are expanding production and complying with specified EU environmental standards. In the event they do not meet the third year criteria, the last 2 years of transfers are revoked. At the time of the survey, none of the farmers had yet completed their third year of funding.

[8]Farmers applying to M141 must complete an application that is scored by an EU review committee, with a selection cutoff of 35 points. However, this cutoff was somewhat 'fuzzy' in that farmers with scores of 35 were both selected and rejected from the program. The number of applicants in Suceava with a score of 35 was not large enough to provide sufficient power, so I expanded the sample frame to between 15 and 55 points.

[9]One might be concerned that there were disparities across the imperial border in regard to recruitment, thereby biasing the sample. Table 3 shows the recruitment statistics for both Habsburg and Ottoman respondents. Because there were fewer Ottoman applicants to the M141 program−presumably due to the fact that the geographic size of the Ottoman region in Suceava is significantly smaller than the Habsburg area (see Figure 8)−proportionally more Ottoman applicants were recruited. However, of those recruited, there is minimal difference between the proportion of Habsburg and Ottoman applicants who attended the survey and experimental sessions.

farmers were invited in groups of 20 to participate in the experimental games at their local community centers. At the beginning of each session farmers answered questions intended to elicit risk and time preferences. For the risk portion, farmers completed a menu of "safe" and "risky" lottery choices, modeled after the Holt and Laury (2002) methodology. In this game, farmers chose between a safe lottery A in which they could win either 8 or 6 Lei with a given probability, or a risky lottery B in which they could win either 20 or 2 Lei with a given probability, over 10 rounds, with the odds of winning the higher amount increasing with each round (see Figure 9). In the last round, there was a 10 out of 10 chance of winning the higher amount, such that those who chose the safe lottery in this round revealed that they did not understand the game. Most people start by choosing lottery A, then switch over to lottery B as the odds of winning the higher amount increase. The number of As vs. Bs chosen allows me to make inferences about the respondent's tolerance for financial risk. [10]

The time questions followed a multiple price list (MPL) methodology in which farmers were given a choice of receiving 8 Lei in a near period (either tomorrow or in 1 week), or a larger amount in a later period (1 week after the near period) - see Figure 10. The amount offered in the later period increased by 1 Lei over 10 rounds, such that in the first round respondents chose between 8 Lei in the near period and 9 Lei in the later period, and in the last round between 8 Lei in the near period and 18 Lei in the later period (roughly a quarter of the daily income for a Romanian farmer). The point at which the respondent decides to wait for the larger amount suggests her financial patience. That is, the more Lei one requires to wait a week, the less patient she is.

Farmers answered the MPL twice: once for a decision between tomorrow and 1 week, and again for a decision between 1 week and 2 weeks. Discount rates were calculated according to the standard method (Andreoni and Sprenger, 2012*a*): $\delta = (\frac{X}{Y})^{1/k}$, where X is the point

[10]Enumerators were instructed to assist farmers who did not initially understand the risk questions until their comprehension was clear−i.e., there was no switching between A and B, and lottery B was selected for the last round.

at which the respondent switches, Y is the later amount, and k is the time between the near and later periods. The discount rate used in the analysis below is the average of the discount rates calculated for each set of questions. I also use these questions to understand the role of hyperbolic discounting (or present-bias) in savings decisions. While my theory does not make direct predictions on hyperbolic preferences, it is a topic that is of recent concern in the savings literature (Ashraf et al., 2006; Tanaka et al., 2010; Dupas and Robinson, 2013; Bauer et al., 2012; Gine et al., 2013), which I briefly address in the results.

In addition to the risk and time questions, each farmer played a trust game (Berg et al., 1995), which I do not directly explore, but rather use to control for potential confoundedness of risk, time, and trust preferences (e.g., Karlan, 2005; Schechter, 2007; Nguyen et al., 2012). In this game, Player 1 received 8 Lei, of which she could send a portion (8, 6, 4, 2, or 0 Lei) to an anonymous Player 2, which was tripled. Player 2 then decided what portion (if any) of the tripled amount to return to Player 1. The proportion sent measures Player 1's trust and the proportion returned measures Player 2's trustworthiness. Each farmer played the trust game twice, once as Player 1 and again as Player 2, in order to obtain measures of each respondent's trust and trustworthiness.

Because each of the choices in the trust game were made anonymously, all farmers made their decisions in a separate room with an enumerator, while the remaining respondents waited their turn to be called. For a group of 20 farmers, it took approximately 2-3 hours for everyone to make their decisions. While each farmer waited her turn, she completed a household survey containing demographic questions about herself, her household, farm characteristics, and savings and investment decisions since 2010 − the year that M141 was introduced in Suceava.[11]

Note that all experiments were incentivized in order to elicit realistic behavior on the part of the farmer. In the trust game, the respondent received the sum of his Player 1 and Player 2 earnings. For the risk and time games, 1 out of the 30 questions were chosen at

[11]All farmers in the sample are literate. However, an additional enumerator was present in the survey room to help clarify any confusion with the questionnaire.

random to be played 'for real'. The total payout received by the farmer was the sum of the trust and risk/time earnings. On average, respondents received 26 Lei (approximately $7, or 30 percent of the daily wage) in total payouts.

5.2 Summary Statistics

Table 4 presents the summary statistics for the full sample. Note that while there are 331 farmers in the sample, not all of them completed the experimental games. Therefore, the sample size for regressions that require experimental data are slightly lower than 331. In addition, in some cases the farmer listed on the M141 application list (from which I constructed my sample frame) was not able to attend the session and instead sent a representative for the household. In these cases, it is difficult to link the experimental data with the survey data. To correct for this discrepancy, I collected data on the age, gender, and education level of the representative, as well as her relationship to the invited farmer. I also asked the representative to complete the survey from the perspective of the farmer listed on the application, since some of the data will be used in another study to evaluate the impact of M141 on land use outcomes. If the representative was the spouse or parent of the farmer[12], I treat the experimental data as if it were that of the farmer. However, for all other cases in which regressions must use experimental data, I drop observations for which a representative was sent. Consequently, many of my estimates have sample sizes well below 331.

Table 5 presents normalized differences in outcomes and covariates. Normalized differences are interpreted in standard deviations, where the rule of thumb indicates that differences above 0.25 standard deviations are statistically significant (Wooldridge and Imbens, 2007). In order for the RDD assumptions to hold, the only discontinuous jumps I should observe between Habsburg and Ottoman respondents should be in the outcome variables: risk and time preferences, as well as savings outcomes. As Table 5 indicates, there are some important differences in covariates. In particular, farmers living in the Habsburg region ap-

[12]In qualitative interviews, it was revealed that in some cases, farmers applied for M141 in their children's names, since there is some weight given to farmers under 40 years of age in the application scoring process.

plied slightly later to M141, live significantly closer to an ATM, and reside in villages with higher slopes and elevations, and that are farther away from the true and exogenous imperial borders.

In terms of outcomes, there are some statistically significant differences between Habsburg and Ottoman preferences. Namely, Habsburgs are more willing to take risk and have (almost significantly) higher discount rates. While there is no clear difference in savings, controlling for some of the differences in preferences and village-level covariates through formal regression analysis may elucidate this finding.[13]

6 Estimating Equations and Results

6.1 The Causal Relationship Between History and Savings

The first task is to determine whether or not imperial history affects savings. Once this relationship has been established, I also seek to identify the mechanisms through which these patterns may have persisted−either indirectly (via preferences), directly (via transaction costs), or both. It is important to note that due to the nature of a Spatial RDD, I am able to establish causal relationships in the first part of my analysis. That is, in the event that I find a significant relationship between imperial history and savings, I can conclude that imperial history determines savings outcomes. However, I am currently unable to causally identify the mechanisms through which these outcomes have persisted. At best, I can identify a causal relationship between imperial history and preferences, as well as imperial history and transaction costs, but any identified relationship between preferences, transaction costs and savings would only imply a correlation between the historically-influenced mechanisms and savings.

[13]Note that in a classic spatial RDD I would also want to include graphics that illustrate a discontinuous jump in outcomes and no discontinuous jump in covariates near the border, which diminish as the distance from the border increases. However, since respondents live within 10 km of the border on average, and 35 km at most, summary statistics of this kind are not particularly illustrative. Most classic spatial RDDs use secondary data that examines spatial bandwidths of 50 km or more.

For instance, if I find evidence of imperial legacies in both financial development and savings, it is not clear whether the direction of causality is from financial infrastructure to savings or savings to infrastructure. As in the theoretical model in section 4, the demand for formal assets reinforces savings decisions in equilibrium and vice versa: people will save more with better access to banks if returns to bank savings is higher, and banks will locate in places where people save more. Nonetheless, these correlations can be useful in beginning to understand the channels through which imperial legacies affect economic development. In subsequent sections, I will try to provide descriptive evidence of where the correlative channels originate, but first I explore the main question: whether or not there is an imperial legacy in savings.

I begin by estimating the following equations:

$$\begin{aligned} Portfolio_{iv} &= \alpha + \beta Habsburg_v + \gamma Risk_{iv} + \sigma X_{iv} + \phi Z_v + \varepsilon_{iv} \\ Save_{iv} &= \alpha + \beta Habsburg_v + \delta Time_{iv} + \gamma Risk_{iv} + \sigma X_{iv} + \phi Z_v + \varepsilon_{iv} \end{aligned} \tag{9}$$

where $Habsburg_v$ is a dummy variable for whether or not the farmer lives in a village that was a part of the Habsburg empire, X_{iv} is a host of individual and household controls, including age, gender, education, household size, wealth, and whether or not the respondent was selected for the M141 program. Z_v are geophysical characteristics of the farmer's village, including slope, elevation, and the natural log of distance to the exogenous Habsburg border, while ε_{iv} is the error term clustered at the village level.

The first equation is a linear probability model, where $Portfolio_{iv}$ represents various binary outcomes that proxy for both formal and informal savings methods, such as owning a bank account, saving cash at home, saving in illiquid assets, or risk-sharing.[14] Note that I do not control for time preferences in these regressions − except for in the case of the frequency

[14]I classify someone as "risk-sharing" if they answered "yes" to either of the following questions: 1) *If you needed money immediately, what is the primary way you would obtain it?* - Borrow from friends or family; 2) *If you needed money in the next 6 months, what is the primary way you would obtain it?* - Borrow from friends or family.

and level of bank deposits, which are more akin to $S_1^*(1-\omega^*)$ in the theoretical model – since time preferences do not enter into ω^* in my theoretical predictions on portfolio choice. I do, however, control for risk tolerance, since the stochastic nature of informal assets is likely to deter risk averse farmers. Any imperial legacy in portfolio choice would require β to be statistically significant.

In the second equation, $Save_{iv}$ is a proxy for total accumulated savings (of both formal and informal assets) that was constructed from a self-reported categorical variable from 1 to 5, where 1 represents savings between 0 and 50 Lei and 5 for savings greater than 1,000 Lei (see Table 4). In some estimates I examine a dummy variable equal to 1 for savings greater than 1,000 Lei (i.e., the average monthly salary in Romania) and in others I assign a value of total savings equal to the midpoint of the indicated savings category. In addition, X_{iv} includes ln(crop output) to proxy for income, as well as a dummy variable equal to 1 if the farmer saves at a bank, since the reported savings amounts include both financial (i.e., bank) and non-financial assets (i.e., cash at home, jewelry, animals, and crop inventory). Including this variable also provides insight on the theoretical prediction that saving in the formal asset will increase savings if the rate of return to the formal asset is greater than the informal asset.

If there are imperial legacies in savings, β should be statistically significant. More specifically, however, if the savings patterns in Figure 2 have persisted, I expect β to be statistically significant and *positive*: Habsburg regions exhibited higher savings rates in the imperial era and if savings legacies have remained, Habsburgs should also save more today. Since I am also interested in testing the theoretical predictions on the relationship between preferences and savings, consistent with hypotheses 1 and 2, I would expect δ and γ to be negative (since $Time_{iv}$ is the discount rate and $Risk_{iv}$ is the number of risky choices made in the risk lottery, and not risk aversion per se).

Tables 6 and 7 present the initial results. In regard to portfolio choice, the relationships move in the anticipated directions, but are imprecisely estimated. That is, evidence suggests

that farmers living in Habsburg regions are more likely to save in the formal asset (i.e., at a bank into which they also deposit more frequently), whereas Ottomans are more likely to save in informal assets, like animals, grain inventory, jewelry, and risk sharing. However, the large standard errors do not provide a lot of confidence in the estimates. In regard to preferences, the imprecise estimates do not allow me to draw strong conclusions, but there is some evidence that risk averse people are more likely to save in the formal asset, with its known rate of return, and that impatient people deposit less frequently, but in larger amounts − perhaps as windfalls arise.

One might be concerned that portfolio choice may be driven by wealth and income differences between the Habsburg and Ottoman populations, thereby confounding the $Habsburg$ estimates. While portfolio choice is not a function of income in the theoretical model, it is worth exploring whether or not differences exist between the two imperial populations, since the regional wealth differences could determine the supply of portfolio options−banks in particular. Table 24 in the Appendix explores the correlation between imperial history and wealth and finds no significant correlation.

The findings in regard to savings legacies are far more revealing (see Table 7). First, it does not appear that Habsburgs are any more likely to save on the extensive margin than Ottomans (columns (1) and (2)). On the intensive margin, however, Habsburgs are 16 percentage points more likely to have accumulated total savings greater than 1,000 Lei (approximately $300) and have saved roughly 240 Lei more than Ottoman farmers−a 30 percent increase from the mean. Interestingly, the theoretical predictions on preferences are only consistent for hyperbolic time preferences, supporting the numerous recent findings that present-bias is a hindrance to savings (Ashraf et al., 2006; Tanaka et al., 2010; Bauer et al., 2012; Gine et al., 2013; Dupas and Robinson, 2013). The discount rate moves in the anticipated direction, but is imprecisely estimated, while a precautionary motive for savings only holds on the extensive margin and is also imprecisely estimated. While it is counter-intuitive to the theory, the findings for the a lack of a precautionary motive are consistent with other

empirical studies of preferences and savings.[15]

In columns (3)-(5) I impute average annual bank deposits based on the categorical amount respondents said they typically deposit at the bank[16] and how frequently they make deposits, conditional on owning an account, and regress that on the Habsburg dummy. While the sample size is small, there is evidence that Habsburgs not only have higher total savings (columns (6)-(13)), but that their formal banks savings are larger, as well. Moreover, note that consistent with the theoretical predictions, saving at a bank (i.e., saving in the formal asset) increases total savings, which implies that the return to saving in formal bank accounts is higher than the rate of return on informal assets in Suceava. This is not surprising given that the incentives for bank saving appear to be quite strong in Romania: the deposit interest rate in Romania has been consistently higher than in most European countries since 2008, and was approximately 6 percent in 2012 versus 2 percent in France, 3 percent in the Netherlands, and 5 percent in Hungary (World Bank Development Indicators, 2013). Furthermore, growing evidence on the returns to informal assets in developing countries suggests that informal savings, namely animals, is often costly and/or not profitable (Zimmerman and Carter, 2003; Karlan et al., 2014).

While there is some evidence that preferences affect savings, it is unclear at this point whether or not the effect is through imperial history. There is stronger evidence of time preference effects than risk effects, but with the exception of present-bias, these relationships are not precisely estimated. In the next section I explore whether or not there is any evidence of indirect effects through historical persistence in preferences. In addition, while I conclude that, holding preferences constant, Habsburgs do in fact save more, I know from Figure 3

[15]Bauer et al. (2012) find no significant correlation between risk preferences and total savings, and some evidence of a positive correlation between willingness to take risk and the proportion of savings held at home for women only. In regard to wealth, Binswanger (1980) finds no significant correlation between wealth and risk aversion, while Tanaka et al. (2010) find no significant correlation between household income and risk aversion, but a positive and significant correlation between mean village income and risk aversion. While they do not examine risk preferences per se, Jalan and Ravallion (2001) show that there is a *small* correlation between income risk and the accumulation of unproductive liquid wealth, but that it is only significant for middle income groups.

[16]These are the same amounts as the total savings categories in Table 4

and Tables 2 and 5 that Habsburgs also have better access to formal financial institutions. From the theoretical predictions I should not be surprised to find that Habsburgs save more if they face lower transaction costs in the formal financial sector. In the next section I also test whether or not there is a direct effect on savings from having better financial access.

6.2 Indirect and Direct Channels of Persistence

6.2.1 Indirect Mechanisms: Preferences

To explore a causal relationship between imperial history and preferences, I estimate the following equation:

$$Pref_i = \alpha + \beta Habsburg_v + \sigma X_i + \phi Z_v + \varepsilon_{iv} \tag{10}$$

where $Pref_i$ represents the various risk and time measures described in Table 4, and the controls are the same as those discussed in the previous section. Any imperial legacy in preferences would require β to be statistically significant.

Before presenting the results, it is important to note that recent literature finds that risk preferences may influence respondents' decisions in inter-temporal allocation experiments like the one conducted in this study, since the present is certain and future is inherently risky (Andreoni and Sprenger, 2012*a*,*b*). These findings suggest that I ought to include the risk measurement in my estimations of time preferences. Similarly, other experimental studies find a significant correlation between trust and risk (Karlan, 2005; Schechter, 2007), and trust and time preferences (Nguyen et al., 2012). While the direction of correlation in these studies is from risk to trust and time to trust, respectively, the mere existence of a correlation may suggest the need to include trust indicators in the risk and time regressions. To the extent that imperial history determines preferences, however, inclusion of these parameters as covariates in a regression that also includes *Habsburg* could be confounding. I explore correlations between preferences in Table 23 of the Appendix and find that there is some correlation between risk and time preferences, but no correlation between risk, time, and

trust preferences. I, therefore, estimate my risk and time regressions both including and excluding other the other preference, but do not control for trust.

The results of estimating equation (10) are displayed in Table 8. Habsburgs make more risky choices in the lottery game and have higher discount rates, but are no more likely to be hyperbolic or trusting. Consequently, I conclude that imperial history affects preferences. What is perplexing, however, is that it affects them in ways inconsistent with the savings results in Table 7. That is, higher risk tolerance and discount rates are *negatively* correlated with savings. Yet, while Habsburgs save more, they also have *higher* risk tolerance and discount rates on average. This attenuation bias is visible in Table 7. Since preferences are negatively correlated with savings, but positively correlated with *Habsburg*, omitting them from the savings regressions would create a downward bias on the *Habsburg* coefficient. Correctly, I find that including risk and time preferences increases the coefficient on *Habsburg*. Nonetheless, even when controlling for preferences, I still find a persistent effect of history on savings. However, since the effect of imperial legacy on preferences moves in the opposite direction of the effect of preferences on savings, I conclude that the mechanism through which history affects savings is likely *not* through an indirect preferences channel. In the next section I explore whether or not there is evidence of a direct effect through transaction costs in the formal financial sector.

6.2.2 Direct Mechanisms: Access to Financial Institutions

There is fairly well-substantiated evidence, both in the existing literature (Grosjean, 2011*a*), as well as in my own data (Figure 3, Table 2, and Table 5) that there is disproportionate access to formal financial institutions across the Habsburg-Ottoman border today, making it more costly for those living in financially underdeveloped regions to save in formal ways. From the theoretical predictions, I know that not only do declining transaction costs in the formal financial sector increase the amount invested in the formal asset (which will indirectly increase savings if the rate of return on the formal asset is greater than the

expected rate of return on the informal asset), they also directly increase total accumulated savings. Since Habsburgs have fewer transaction costs in formal assets and also save more, I might be inclined to think that the direct channel through which history affects savings is through its effect on financial intermediation. To explore this, I run the following estimates:

$$\begin{aligned} Portfolio_i &= \alpha + \beta \ln(DistBank_v) + \gamma Risk_i + \sigma X_i + \phi Z_v + \varepsilon_{iv} \\ Save_i &= \alpha + \beta \ln(DistBank_v) + \delta Time_i + \gamma Risk_i + \sigma X_i + \phi Z_v + \varepsilon_{iv} \end{aligned} \tag{11}$$

where I have replaced the $Habsburg$ variable with $\ln(DistBank_v)$, the natural log of the distance to the nearest bank-affiliated ATM − a proxy for financial development, in the savings regressions. Since there are so few ATMS in Suceava county (67 identified as of 2014), $\ln(DistBank_v)$ represents the distance of farmer i's village to the nearest municipality with any ATM. I run estimates using both the Euclidean distance (Tables 9 and 10), as well as the road driving distance and time, controlling for local road density (Tables 25 and 26 in the Appendix).

The main results are presented in Tables 9 and 10. In Table 9 I find that increasing transaction costs in the formal asset decreases the frequency with which one makes bank deposits, but increases the average deposit amount per transaction. In addition, increasing the distance to a formal financial institution increases the probability of saving in illiquid assets and risk sharing. The robustness checks in Table 25 also indicate that transaction costs decrease the probability of saving in a formal bank account. The evidence, therefore, suggests a potential habit formation explanation for why Habsburgs save more. With better access to formal financial institutions, one is less likely to save in informal assets, which have a lower rate of return and are accumulated infrequently[17], and more likely to save in formal assets. Furthermore, better access, while decreasing the average amount of each deposit, increases the average frequency of deposits, potentially instilling a habit of saving and hence larger overall savings. This finding is consistent with de Mel et al. (2013) who show that

[17]In my sample, respondents have purchased 0.69 animals on average since 2010.

habit formation effects not only increase the frequency of deposits, but also increase total savings.

If the above hypothesis is true, I should expect to see higher savings with better financial intermediation. I find in Table 10 that decreasing transaction costs in the formal asset (i.e., decreasing the distance to ATMs) also significantly increases savings. A 1 percent increase in the Euclidean distance to an ATM decreases the probability of having saved 1,000 Lei or more by roughly 8 percentage points and reduces total accumulated savings by approximately 180 Lei (roughly 50 USD or 23 percent of average savings). The results are slightly more conservative when I examine actual driving distance in Table 26: increasing the distance to an ATM by 1 percent (120 meters, on average) decreases the probability of having accumulated 1,000 Lei by 6 percentage points and reduces total savings by 130 Lei.

To the extent that there are imperial legacies in financial access−a finding that is fairly well substantiated in the data−the results in Tables 9 and 10 provide convincing evidence that one of the important channels through which history determines savings patterns is through transaction costs. What is not identifiable, however, is whether or not the disparity in financial access is due to demand or supply factors. That is, financial access on either side of the border is an equilibrium outcome and likely endogenous to average savings in the region. Banks will locate in places where they can make a profit. This is correlated with many observable factors, such as population density, infrastructure, and observable savings and investment behavior, as well as unobservable factors such creditworthiness, entrepreneurship, and effort (i.e., moral hazard and advserse selection). The natural question stemming from these findings, therefore, is why do banks choose to locate more prevalently in former Habsburg regions, particularly after the numerous covariate political and economic shocks in the post-imperialist era that should have wiped out imperial influence? While this is not identifiable in a causal way from my data, I explore some descriptive evidence for why this is in Section 8. First, however, I entertain alternative hypotheses for why we observe imperial legacies in savings and examine the plausibility of my results with a falsification test.

7 Alternative Hypotheses and Robustness Checks

The channels of causality explored in the previous section are largely motivated by the theoretical model in section 4. Nonetheless, it is plausible that savings legacies could have persisted for other reasons. For instance, to the extent that generations have remained relatively immobile[18], I might expect that Hasbsburgs have cultivated a "culture of savings", originating in the imperial era when they also saved more. Or, perhaps with better access to formal financial institutions in the imperial era, Habsburgs have developed a preference for formal over informal assets, such that there is cultural transmission in portfolio choice. Or moreover, what if Ottomans, with a legacy of corrupt financial and legal institutions, have fostered mistrust in formal financial institutions, such that they are less inclined to use them? I empirically explore some of these alternative hypotheses, below.

7.1 A Culture of Savings?

The literature on cultural transmission (Bisin and Verdier, 2001; Hauk and Saez-Marti, 2002; Guiso et al., 2006; Grosjean, 2011*b*; Guiso et al., 2013) demonstrates that certain norms and beliefs−many of which are important to economic development, such as trust and cooperation−persist over time. These norms can transmit either "horizontally" via intergenerational family transfers, or "vertically" through socialization (Bisin and Verdier, 2001). Horizontal and vertical transmission are substitutable, such that the prevalence of a given trait in one's social network may be a predictor of individual behavior. I apply this framework to test whether or not a "culture of savings" can explain the observed historical persistence in savings behaviors. That is, what if the observed Habsburg effect is actually because savings cultures emerged within certain villages[19] during the imperial era?

To estimate these effects, I first employ an empirical strategy akin to that used in peer

[18]60 percent of families in my sample have lived in their village for 100 years or more−long enough to have experienced imperial rule. 82 percent have lived in their village for 50 years or more.

[19]I have not gathered formal data on social networks and rather assume that one's social network is correlated with geographical proximity at the village level.

effects analysis. That is, if savings behaviors persist through the cultural transmission of savings norms embedded during the imperial era, I would expect to observe that village savings behaviors explain individual savings. Furthermore, if cultural transmission is the primary mechanism through which savings norms persist, I would expect that village-level savings explains a larger portion of individual savings than simply living in a Habsburg or Ottoman village. To test this, I include the village-mean savings, excluding the ith observation, in my regressions (Moffitt, 2001):

$$Save_i = \alpha + \gamma \bar{Save}_{v/i} + \beta Habs_v + \delta P_i + \sigma X_i + \phi \bar{X}_{v/i} + \psi Z_v + \varepsilon_{iv} \tag{12}$$

where $\bar{Save}_{c\backslash i}$ and $\bar{X}_{c\backslash i}$ are village-means, excluding the ith observation, and ε_{iv} is the error term clustered at the village level. If cultural transmission is solely driving the imperial effects, I would expect γ to be positive and β to be zero.

Table 11 presents the results from estimating equation 12. I find no evidence of cultural transmission in savings, since γ is statistically insignificant (and negative, interestingly). However, notice that the *Habsburg*, as well as the financial access, effects hold. As Manski (1993) demonstrates, however, these specifications likely suffer from "reflection" bias because of reverse causality in individual and village-level behavior. Furthermore, there is likely spatial dependence between observations. As Head and Mayer (2008) and Grosjean (2011*b*) show, using a gravity equation to estimate the above relationships can eliminate these biases.[20] If geographic proximity determines individual behavior, I would expect that villages close to one another exhibit more similar savings behaviors than those that are farther apart.

[20]Manski (1993) uses the analogy of a mirror to describe the reflection problem: one's actions occur simultaneously with the reflection in the mirror. It is therefore unclear to the observer whether the person or the mirror is driving the action. Furthermore, there is likely spatial dependence between observations if networks are formed geographically. Hauk and Saez-Marti (2002) show theoretically that through vertical or horizontal cultural transmission, the share of a particular trait or behavior in one network depends on the share of the trait in each network to which it is connected. Head and Mayer (2008) show that by measuring *dissimlarity* in trait shares between networks and including location fixed effects one avoids the econometric issues associated with reflection bias. Multi-way clustering of standard errors Cameron et al. (2011) corrects for the dependence between every pair that contains a specific observation, while spatial dependence is eliminated by controlling for the distance between locations Grosjean (2011*b*).

To test this, I estimate the following equation:

$$|\bar{Y}_{v_i} - \bar{Y}_{v_j}| = \alpha + \gamma ln(distance_{v_i v_j}) + \sigma|\bar{X}_{v_i} - \bar{X}_{v_j}| + \tau_{v_i} + \phi_{v_j} + \varepsilon_{v_i v_j} \tag{13}$$

where $\bar{Y}_{v_i}$ is the village mean of savings in village i, $ln(distance_{v_i v_j})$ is the natural log of the distance between villages i and j, and $\bar{X}_{v_i}$ is the village mean of all covariates used in the previous OLS estimates of savings. In addition, I include a dummy variable for each village in the dyad and implement multi-way clustered standard errors at the village level, following the Cameron et al. (2011) method. The intuition behind equation (13) is that as the distance between two villages increases, the average savings behaviors are increasingly different, such that $\gamma > 0$. Or alternatively, as geographic proximity increases, savings behaviors are more similar.

Table 12 presents the results of the gravity estimates. There is no evidence of cultural transmission in savings. In fact, while the coefficient for ln(*distance*) is statistically insignificant, it is negative, which is counterintuitive to the empirical model. What is interesting to note, however, is that there does appear to be evidence of cultural transmission in risk and time preferences (although the coefficient on time is only statistically significant at the 88% level). So, while a "culture of savings" does not appear to have persisted, I do find that risk and time attitudes are likely driven by cultural transmission. I know from the previous savings results, however, that the historical origins of these preferences do not appear to drive observed savings behaviors.

7.2 A Culture of Portfolio Choice?

Next, consider the hypothesis that there is less financial intermediation in Ottoman villages because Ottomans simply have a preference for allocating savings to informal assets, such as livestock, grain inventory, or risk sharing, that are substitutes for formal savings. This behavior is rooted in imperial times, when informal financial instruments evolved due to the bank on usury, as well as the underdeveloped formal financial sector. As such, farmers in Ottoman villages would be less likely to demand financial institutions, since they

are not inclined to use them. If the return to informal assets is lower than formal assets (Zimmerman and Carter, 2003; Karlan et al., 2014), this may explain the disparities in savings. In this setting, I would expect to find empirical evidence of cultural transmission in portfolio choice. That is, the preference for saving in informal or formal assets is a cultural trait embedded in the people around you, which then affects your demand for financial institutions. Table 16 presents the results of a gravity equation for portfolio choice and finds no evidence of cultural transmission in savings methods−the preference for informal or formal savings instruments does not appear to be determined by geographic proximity.

7.3 (Mis)Trust in Financial Institutions

Next, consider a common hypothesis that because Ottoman rule was rampant with corruption, people living in Ottoman regions have less trust in financial institutions, and therefore, decreased demand for banks. Table 17 presents results from a secondary nationally-representative data source[21], which I used to model a fuzzy spatial RDD across the Habsburg-Ottoman border within Romania. The results indicate that there is no imperial effect on trust in formal financial institutions[22] or the probability of owning a bank account (which is consistent with my own findings). Moreover, trust in financial institutions does not appear to affect the probability of owning a bank account, nor is it correlated with total savings. What is striking, however, is that consistent with my own estimates, people living in Habsburg regions save more: 37 Lei (∼11 USD) more per month or 444 Lei (∼100 USD) per year on average−1.4 percent of annual income for Romanian farmers. While I cannot directly test the effect of financial access on savings in this sample, the fact that trust in financial institutions neither affects the demand for banks nor the level of savings suggests that a lack of demand for (stemming from mistrust in) the financial sector is likely not driving the

[21] I use the Life in Transitions Survey II (LITS II), developed by the European Bank for Reconstruction and Development (EBRD). While the data spans 34 countries throughout Eastern Europe and Central Asia, I confine my analysis to observations within Romania that are within 95 km (the mean distance) of the true imperial border.

[22] This result is consistent with Grosjean (2011*a*)

results.

7.4 Falsification Test

A potential concern with the results in Section 6 is that instead of identifying a true causal effect of imperial legacy, I am instead simply capturing a West-East trend (Becker et al., 2011). That is, perhaps I find that farmers living in the Habsburg regions are less patient, take more risks and save more, because they are closer to the more sophisticated economies of Western Europe. As a robustness check, I arbitrarily move the exogenous border to the northwest and southeast (see Figure 11) to test whether or not there is a pseudo Habsburg effect on the results discussed above. If the previous findings are robust, there should not be a statistically significant Habsburg effect on preferences and savings after moving the border. To begin, I move the exogenous border 7.37 km to the northwest (the median distance for Habsburg villages) and replace the Habsburg dummy with zeros for villages to the southeast of the new placebo border. I then rerun the savings and preferences regressions on the Habsburg sample alone. Similarly, I move the exogenous border 5.25 km to the southeast (the median distance for the Ottoman sample) and rerun the estimates for the Ottoman sample, replacing the Habsburg dummy with 1 for villages to the northwest of the placebo border. Note that this significantly reduces the sample sizes in my regressions, since I am estimating them on essentially half of the true sample at a time. Therefore, interpretation should be made with caution.

The results in Table 13 show no evidence of a placebo effect for the Habsburg dummy on savings. In addition, many of the coefficients also move in the opposite direction or are smaller in magnitude than the original estimates. I therefore conclude that the observed original effects of imperial history on savings are causal. In Table 14 I also test for whether or not there is a placebo imperial legacy in preferences and find no evidence of one. That is, while the coefficients for the placebo Habsburg dummy are statistically insignificant, they are also smaller than the original estimates. I therefore conclude that the observed imperial

effects on preferences are also causal. Lastly, I test for a placebo imperial effect on access to formal financial intermediation in Table 15. Note that since this analysis is at the *comuna* level, there is a serious small sample issue, particularly in the Ottoman sample. Nonetheless, the results suggest that the imperial legacy in financial development is also causal, since I do not observe a placebo effect of imperial persistence in access to banks. In fact, many of the coefficients move in the opposite direction of those in Table 2 or are notably smaller in magnitude.

8 Discussion

In the previous sections, I provide fairly convincing evidence of a causal effect of imperial legacy on savings. Furthermore, I show that the channels of transmission are likely not through preferences, but rather through differential access to formal financial institutions. People living in Habsburg regions have significantly better access to formal banks than those living in Ottoman regions, and financial development is significantly correlated with savings. This causal nature of this relationship, however, is not identifiable with my data, since the savings / financial intermediation relationship is an equilibrium outcome. Financial institutions choose to locate in places for many reasons, not least of which includes the demand for formal savings, and people who have access to formal accounts will save more. To causally test the effect of historically-determined differential financial access on savings behaviors would require a counterfactual. That is, if I were able to increase access to financial institutions on the Ottoman side, would this increase savings to levels comparable to their Habsburg counterparts? While this is not possible in the present study, it is motivating for future work in which field experiments could be run to randomly assign improved access to formal savings instruments (à la de Mel et al., 2013; Dupas and Robinson, 2013; Schaner, 2013) and measure any disproportionate effect on savings in the Ottoman regions.

Another follow-up question to my findings is why do former Habsurgs regions, which

experienced more rapid financial development in the imperial era, still have more banks today, in spite of the numerous political and economic shocks that should have conceivably 'leveled the playing field'? While this is not causally identifiable in my data, I explore some descriptive reasons for why this might be, below. If Habsburgs traditionally save more out of custom, this might explain the financial development trend. However, I do not find much evidence for this hypothesis in my test of cultural transmission in savings in section 7. Furthermore, I do not find any evidence of a cultural preference for formal/informal banking across the border that may affect the demand for banks. When thinking about the supply factors that influence financial development, banks often tend to locate in areas with higher population density, better infrastructure, or that are generally wealthier. However, as Figure 12 and Table 24 indicate, there is no observable difference in wealth across the imperial border, both throughout the country and within the study region, nor does there appear to be significant differences in population densities, as Table 18 reveals.

There is some evidence, however, of disparities in road infrastructure across the imperial border (see Table 19. This finding is substantiated in similar papers that find that Habsburg imperial history is correlated with better transportation infrastructure today (Grosfeld and Zhuravskaya, 2014). In Table 2 I also find that road density is correlated with financial development. In Suceava county, increasing road density by 1 square km is associated with having 2.5 additional ATMs in a given *comuna* on average, and .5 ATMs when the capital Suceava City is excluded from the analysis. Therefore, perhaps larger infrastructural legacies can help explain the financial infrastructure disparities.

To the extent that banks are looking for profitable lending opportunities, financial institutions may also want to locate in places where people have high credit worthiness or exhibit demand for borrowing, such as places with more entrepreneurial spirit. While these traits are unobservable, there is some observable data banks could use to gain intuition. In Figure 13, I plot nationwide differences of overdue loans as of August in each year from 2005-2014 at the county level and find that Habsburgs actually appear to be *less* creditworthy. How-

ever, the availability of credit might be driving the trends. In Table 20 I control for the number of financial institutions in a given county in a given year (for which I only have data from 2002-2008) and find that after controlling for financial development, year trends, and population, there is no observable difference in creditworthiness across imperial history. Observable differences in creditworthiness hence do not appear to be driving the financial development legacies.

When I examine entrepreneurship, however, I do find some suggestive evidence. Figure 14 suggests that there is a significant difference in self-employment across the imperial border today, while Figure 15 implies that this is positively correlated with financial development. When I perform a spatial RDD analysis on data from a nationally representative sample in Table 21, however, I find no evidence of imperial legacies in entrepreneurship[23], but I do find support for the hypothesis that financial intermedation and observable entrepreneurship are positively correlated. That is, people who are currently self-employed or who have ever tried to start a business are 8 to 13 percentage points more likely to own a bank account. Again, however, this relationship is likely endogenous. Nonetheless, this finding is consistent with Guiso et al. (2004*a*), who find that entrepreneurship is an important determinant of local financial development.

Lastly, one perplexing finding from the results in Section 6 is why, if Habsburgs are less patient, there would be more financial development on the Habsburg side, since patience is associated with financial prudence. That is, it would seem that impatient people would be less likely to demand access to banks, thereby resulting in a lower equilibrium level of financial intermediation. In the theoretical predictions, however, notice that portfolio allocation is not a function of time preferences. That is the decision to allocate savings into the formal asset (and therefore aggregate demand for formal assets) is not a function of patience. The theoretical relationship between time preferences and financial development is therefore ambiguous. Moreover, note in Table 22 that savings in liquid assets (i.e., at a bank or in cash

[23]This finding is consistent with Grosjean (2011*a*)

at home) are positively associated with impatience. To the extent that banks provide liquid assets, it makes sense that there would be more banks in places where people are impatient. While the direction of this relationship is unclear−i.e., does access to liquidity makes one more impatient or is the prevalence of liquid assets an equilibrium outcome of demand by impatient people?−the correlation provides descriptive evidence of why it is not completely counterintuitive to find more banks in (impatient) Habsburg regions.

9 Conclusion

Through a spatial RDD I provide strong causal evidence of imperial legacies in savings behaviors. On average, Habsburg farmers are 16 percentage points more likely to have accumulated savings in excess of 1,000 Lei−a month's salary−and have saved roughly 240 Lei (68 USD) more than Ottoman farmers. With sample average savings equal to 775 Lei, the Habsburg effect is proportional to a 30 percent increase in average savings. This effect would increase total savings to 3 percent of per capita GDP, making the imperial effects less than trivial. A falsification test supports a causal interpretation of the findings and rules out a placebo West-East trend in savings behaviors.

What do the results suggest about the mechanisms through which savings behaviors have persisted? While imperial history does causally determine risk and time preferences, there is little evidence that historically-rooted preferences affect savings in the way that theory predicts. Moreover, when I explore alternative hypotheses for why savings legacies may persist, such as a culture of savings, lingering preferences for formal/informal assets, or mistrust in formal financial institutions, I find no evidence supporting these mechanisms.

The evidence does strongly suggest, however, that one of the important channels of persistence is through transactions costs in the formal financial sector. Both the existing literature, as well as my own data, indicate that disparities in financial development during the imperial era still exist today. Moreover, access to formal financial institutions, proxied for by

the prevalence of bank-affilated ATMs, influences savings portfolio choices and significantly hinders the propensity to save. A 1 percent increase in the distance to an ATM is correlated with a 6 to 8 percentage point reduction in the probability of accumulating savings greater than 1,000 Lei (a 21 to 28 percent reduction from the mean probability), and a 130 to 180 Lei reduction in total savings (an approximate 17 to 23 percent reduction from the mean). The effects of financial transaction costs on savings are economically significant.

What I cannot identify, however, is whether the equilibrium outcome in financial access is due to demand or supply factors. Nonetheless, descriptive evidence suggests that imperial legacies in financial development are correlated with larger infrastructural disparities, namely road infrastructure, as well as observable differences in entrepreneurial factors. Future work should explore creating empirical counterfactuals through which I can measure whether or not creating greater access to formal financial institutions disproportionately affects savings on the Ottoman side of the border. In the event that this is successful, clear policy implications may develop.

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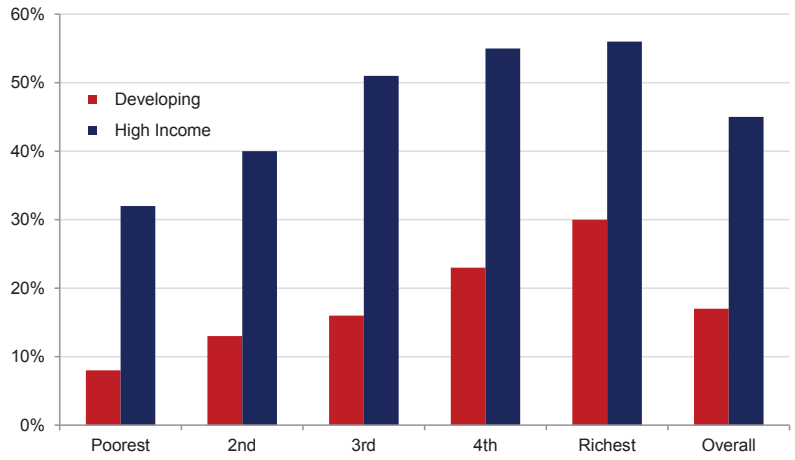
10 Tables and Figures

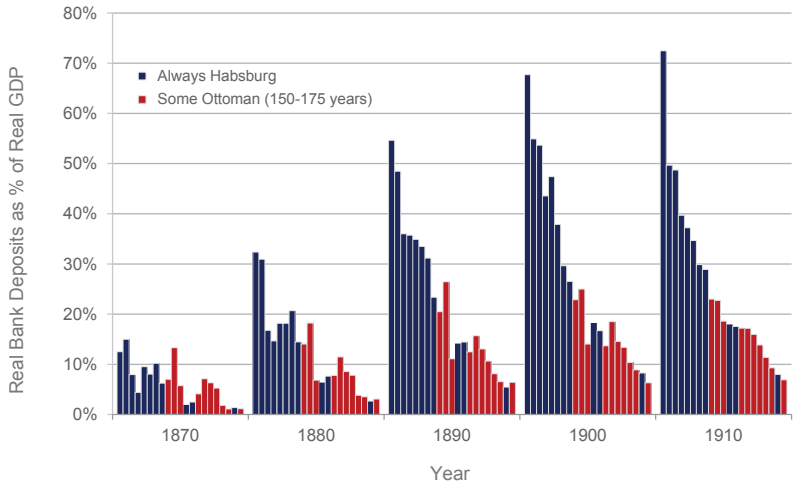
10.1 Figures

Figure 1: % Adults Saving at a Formal Financial Institution



Source: Demirguc-Kunt and Klapper (2012) via Global Financial Inclusion Database (World Bank)

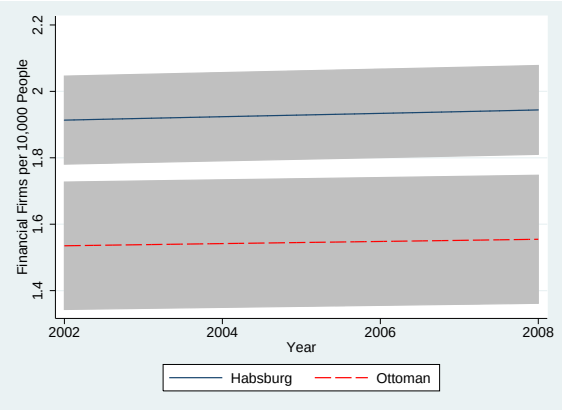
Figure 2: Savings Disparities Among Habsburg Provinces



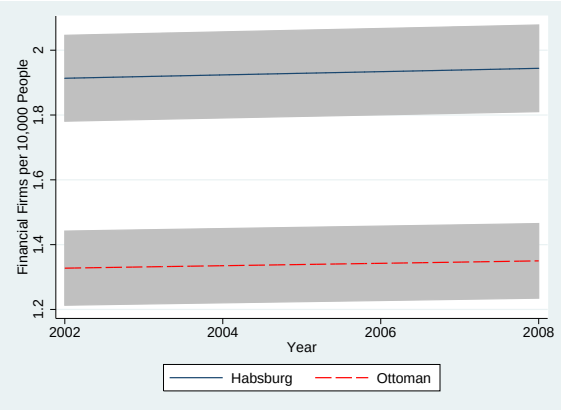
Source: Data provided by David Good

Figure 3: Disparities in Financial Intermediation: Romania

((a)) Romania



((b)) Excluding Bucharest



Source: Romanian National Institute of Statistics. Observations at the County level.

Figure 4: Primary Identification Problem

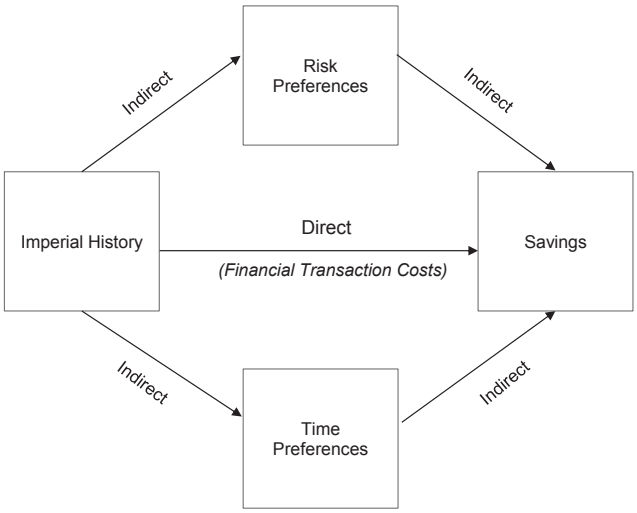


Figure 5: Habsburg-Ottoman Border in Eastern Europe

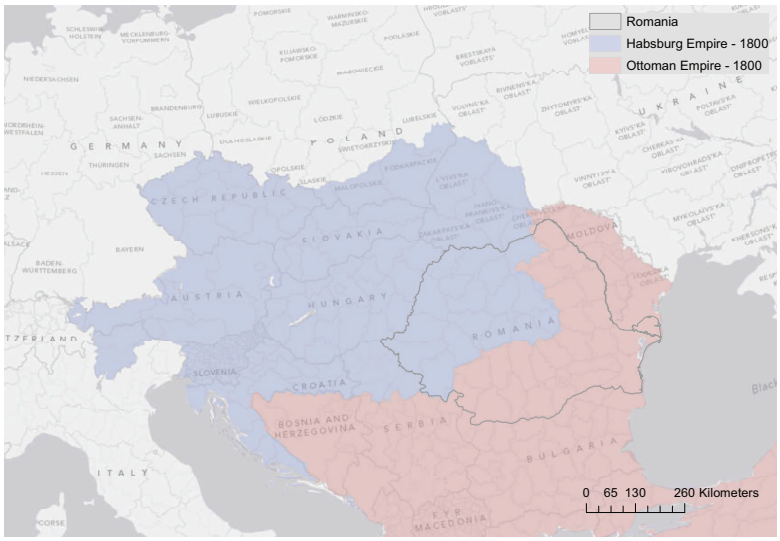


Figure 6: Habsburg-Ottoman Border in Romania

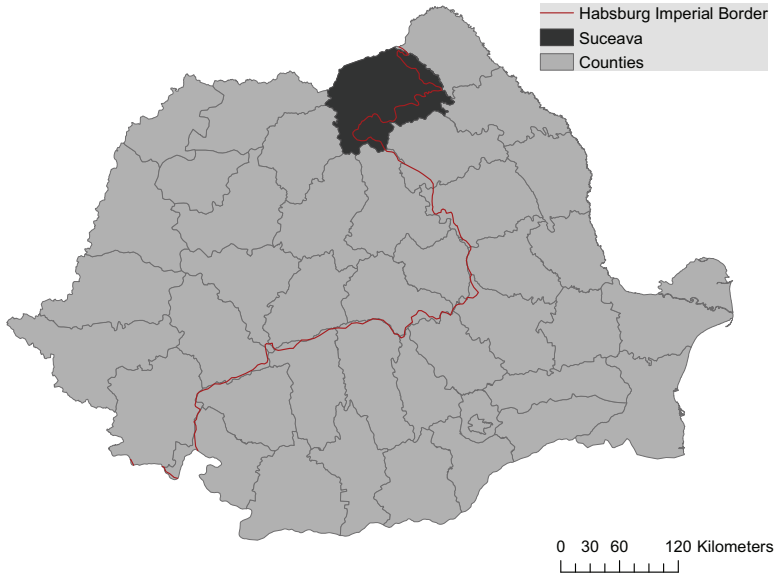


Figure 7: Bukovina and Moldova

Source: "Romania historic regions" by Andrein.
http://commons.wikimedia.org/wiki/File:Romaniahistoricregions.svgmediaviewer/File:Romaniahistoricregions.svg

Figure 8: Spatial Discontinuity in Suceava

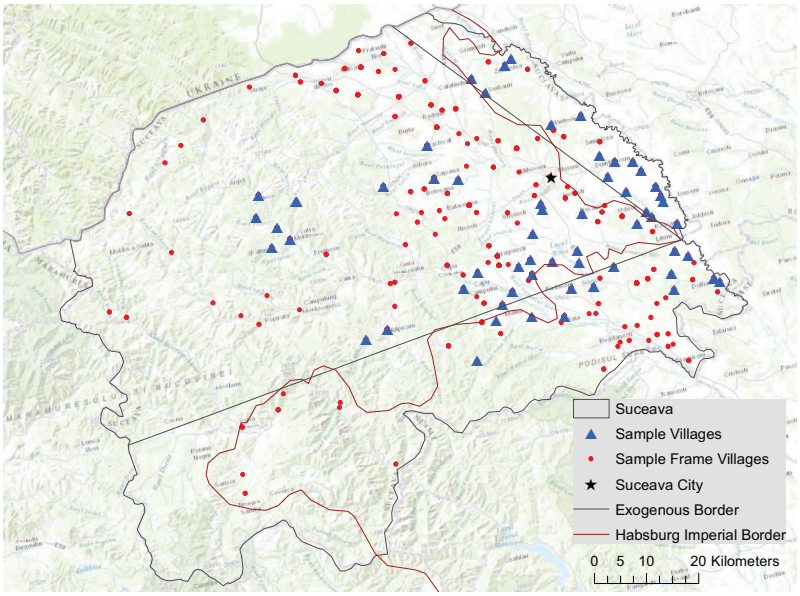


Figure 9: Holt-Laury Risk Menu

	Lottery A		Your Choice	Lottery B	
1	1 in10 chance **8 Lei** (choose 1)	9 in10 chance **6 Lei** (choose 2,3,4,5,6,7,8,9,10)		1 in 10 chance **20 Lei** (choose 1)	9 in10 chance **2 Lei** (choose 2,3,4,5,6,7,8,9,10)
2	2 in10 chance **8 Lei** (choose 1,2)	8 in10 chance **6 Lei** (choose 3,4,5,6,7,8,9,10)		2 in10 chance **20 Lei** (choose 1,2)	8 in10 chance **2 Lei** (choose 3,4,5,6,7,8,9,10)
3	3 in10 chance **8 Lei** (choose 1,2,3)	7 in10 chance **6 Lei** (choose 4,5,6,7,8,9,10)		3 in10 chance **20 Lei** (choose 1,2,3)	7 in10 chance **2 Lei** (choose 4,5,6,7,8,9,10)
4	4 in10 chance **8 Lei** (choose 1,2,3,4)	6 in10 chance **6 Lei** (choose 5,6,7,8,9,10)		4 in10 chance **20 Lei** (choose 1,2,3,4)	6 in10 chance **2 Lei** (allege 5,6,7,8,9,10)
5	5 in10 chance **8 Lei** (choose 1,2,3,4,5)	5 in10 chance **6 Lei** (choose 6,7,8,9,10)		5 in10 chance **20 Lei** (choose 1,2,3,4,5)	5 in10 chance **2 Lei** (choose 6,7,8,9,10)
6	6 in10 chance **8 Lei** (choose 1,2,3,4,5,6)	4 in10 chance **6 Lei** (choose 7,8,9,10)		6 in10 chance **20 Lei** (choose 1,2,3,4,5,6)	4 in10 chance **2 Lei** (choose 7,8,9,10)
7	7 in10 chance **8 Lei** (choose 1,2,3,4,5,6,7)	3 in10 chance **6 Lei** (choose 8,9,10)		7 in10 chance **20 Lei** (choose 1,2,3,4,5,6,7)	3 in10 chance **2 Lei** (choose 8,9,10)
8	8 in10 chance **8 Lei** (choose 1,2,3,3,4,5,6,7,8)	2 in10 chance **6 Lei** (choose 9,10)		8 in10 chance **20 Lei** (choose 1,2,3,4,5,6,7,8)	2 in10 chance **2 Lei** (choose 9,10)
9	9 in10 chance **8 Lei** (choose 1,2,3,4,5,6,7,8,9)	1 in 10 chance **6 Lei** (choose 10)		9 in10 chance **20 Lei** (choose 1,2,3,4,5,6,7,8,9)	1 in 10 chance **2 Lei** (choose 10)
10	10 in10 chance **8 Lei** (choose any number 1-10)	0 in10 chance **6 Lei** (no chance)		10 in10 chance **20 Lei** (choose any number 1-10)	0 in10 chance **2 Lei** (no chance)

Figure 10: Time Preference Elicitation

J1.	Would you prefer **8 Lei** tomorrow or **9 Lei** in 7 days? WRITE 1= TOMORROW →**J2** WRITE 2= LATER →**STOP! GO TO SECTION K**	[_____]
J2.	Would you prefer **8 Lei** tomorrow or **10 Lei** in 7 days?	[_____]
J3.	Would you prefer **8 Lei** tomorrow or **11 Lei** in 7 days?	[_____]
J4.	Would you prefer **8 Lei** tomorrow or **12 Lei** in 7 days?	[_____]
J5.	Would you prefer **8 Lei** tomorrow or **13 Lei** in 7 days?	[_____]
J6.	Would you prefer **8 Lei** tomorrow or **14 Lei** in 7 days?	[_____]
J7.	Would you prefer **8 Lei** tomorrow or **15 Lei** in 7 days?	[_____]
J8.	Would you prefer **8 Lei** tomorrow or **16 Lei** in 7 days?	[_____]
J9.	Would you prefer **8 Lei** tomorrow or **17 Lei** in 7 days?	[_____]
J10.	Would you prefer **8 Lei** tomorrow or **18 Lei** in 7 days?	[_____]

K1.	Would you prefer **8 Lei** 7 days or **9 Lei** in 14 days? WRITE 1= TOMORROW →**K2** WRITE 2= LATER →**STOP! GO TO SECTION K**	[_____]
K2.	Would you prefer **8 Lei** 7 days or **10 Lei** in 14days?	[_____]
K3.	Would you prefer **8 Lei** 7 days or **11 Lei** in 14days?	[_____]
K4.	Would you prefer **8 Lei** 7 days or **12 Lei** in 14days?	[_____]
K5.	Would you prefer **8 Lei** 7 days or **13 Lei** in 14days?	[_____]
K6.	Would you prefer **8 Lei** 7 days or **14 Lei** in 14days?	[_____]
K7.	Would you prefer **8 Lei** 7 days or **15 Lei** in 14days?	[_____]
K8.	Would you prefer **8 Lei** 7 days or **16 Lei** in 14days?	[_____]
K9.	Would you prefer **8 Lei** 7 days or **17 Lei** in 14days?	[_____]
K10.	Would you prefer **8 Lei** 7 days or **18 Lei** in 14 days?	[_____]

Figure 11: Placebo Borders

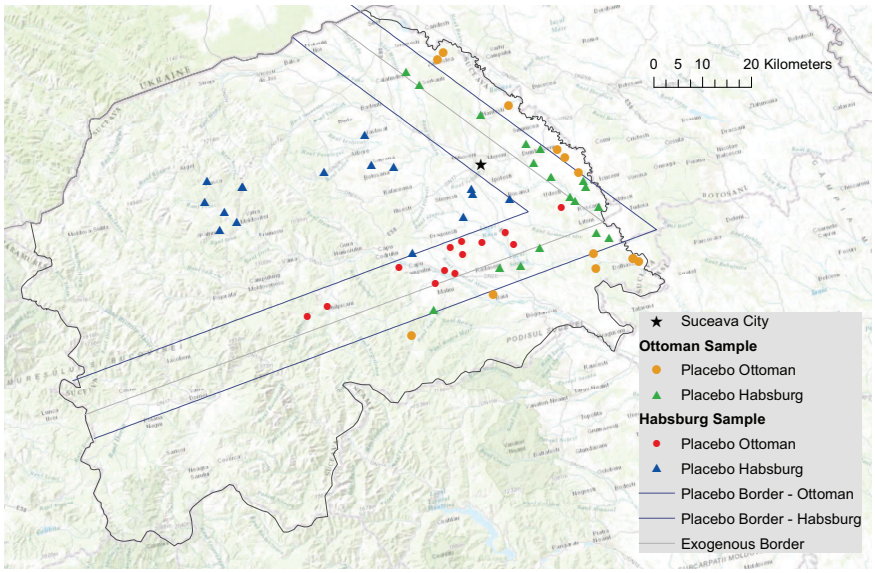
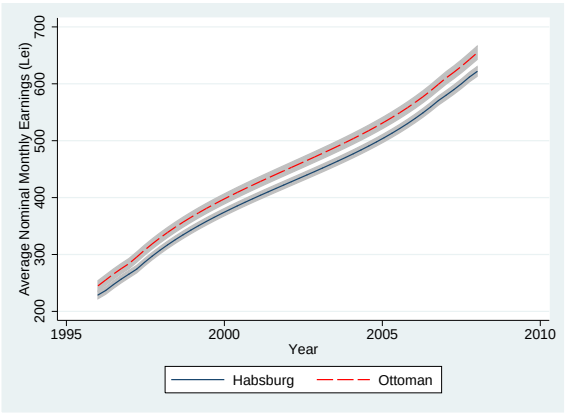
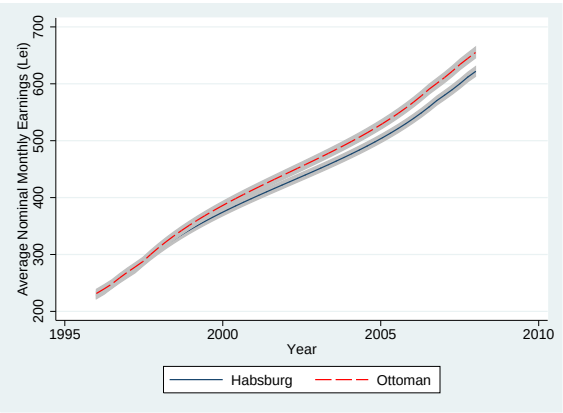


Figure 12: Differences in Nominal Earnings: Romania

((a)) Romania

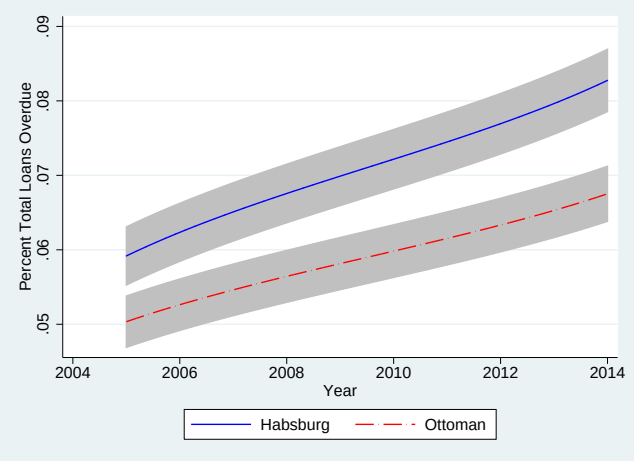


((b)) Excluding Bucharest



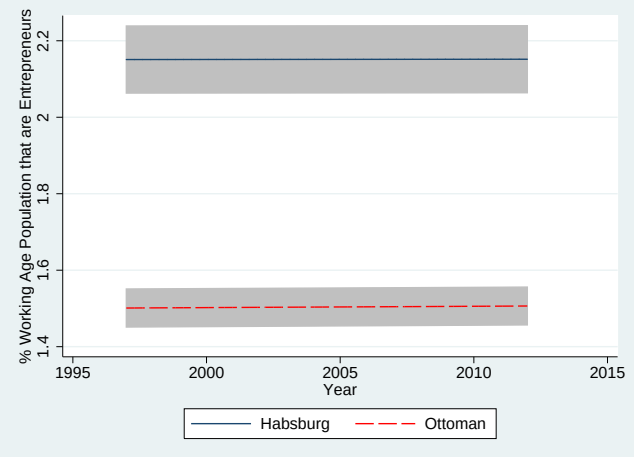
Source: Romanian National Institute of Statistics. Observations at the County level.

Figure 13: Percent of Total Loans that are Overdue



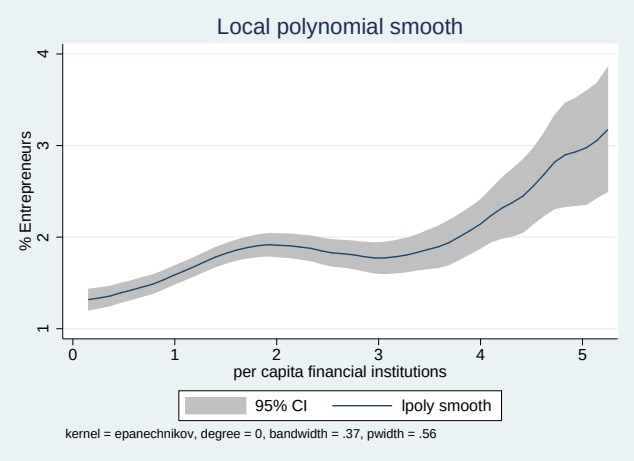
Source: National Bank of Romania. Observations at the County level.

Figure 14: Differences in Entrepreneurship



Source: Romanian National Institute of Statistics. Observations at the County level.

Figure 15: Relationship between Entrepreneurship and Financial Intermediation



Source: Romanian National Institute of Statistics. Observations at the County level.

10.2 Tables

Table 1: Regional Imperial History: Romania

	Habsburg	Ottoman
Transylvania	1690-1918	1541-1690
Bukovina	1774-1918	1504-1774
Moldavia	-	1504-1829
Wallachia	-	1476-1829

Table 2: Differences in Financial Access in Suceava

	ATMs	ATMs	ATMs	Straight Dist	Straight Dist	Straight Dist	Drive Dist	Drive Dist	Drive Dist	Drive Time	Drive Time	Drive Time
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Habsburg	0.011	-0.121	0.212*	-0.429**	-0.428**	-0.535***	-0.465**	-0.470**	-0.686***	-5.420***	-5.512***	-6.727***
	(0.417)	(0.273)	(0.126)	(0.184)	(0.185)	(0.189)	(0.220)	(0.221)	(0.238)	(1.960)	(1.958)	(2.210)
Road Density	2.462***	0.461*	-0.009	-0.216	-0.204	-0.029	-0.314**	-0.397*	-0.041	-2.585*	-3.978**	-2.264
	(0.298)	(0.257)	(0.132)	(0.132)	(0.174)	(0.199)	(0.157)	(0.207)	(0.250)	(1.403)	(1.839)	(2.316)
Sample	All	Ex Suc	Rural	All	Ex Suc	Rural	All	Ex Suc	Rural	All	Ex Suc	Rural
Observations	114	113	96	114	113	96	114	113	96	114	113	96
Adjusted R^2	0.510	0.242	0.326	0.218	0.185	0.218	0.139	0.115	0.087	0.174	0.172	0.172

Unit of observation is a district (Comuna). Ex Suc exludes Suceava City from the estimate. Standard errors in parentheses. *ATMs* are the number of ATMs in a given district. *Straight Dist* is the Euclidean distance from a given district to the nearest district with an ATM. *Drive Dist* is the natural logarithm of the driving distance from a given district to the nearest district with an ATM. *Drive Time* is the minutes of drive time from a given district to the nearest district with an ATM. Other covariates include elevation, population density, and ln(distance to exogenous border).

Table 3: Respondent Recruitment Across the Imperial Border

	Ottoman			Habsburg		
	Rejected	Selected	Total	Rejected	Selected	Total
M141 Applicants:	119	210	329	197	275	472
Farmers Invited:	95	157	252	123	146	269
Farmers Attended:	74	93	167	76	88	164
% Applicants Invited:	80%	75%	77%	62%	53%	57%
Of Invited, % Attended:	78%	59%	66%	62%	60%	61%

Table 4: Summary Statistics

	Description	N	Mean	SD	Min	Max
Variables of Interest						
Habsburg	1 if respondent lives in Habsburg region	331	0.50	0.50	0	1
Risky Choices	Number of risky choices made in Risk Game lottery (Out of 10)	296	5.47	1.64	1	10
Discount Rate	Implied discount rate from time preference game	296	0.90	0.04	0.73	0.92
Present-Biased	1 if respondent is present-biased	296	.122	.327	0	1
Proportion Sent	Proportion sent in Trust Game	313	.478	.200	0	1
Proportion Returned	Proportion returned in Trust Game	309	.382	.202	0	1
Save	1 if respondent saves (formal or informal)	330	0.92	0.27	0	1
Save at Bank	1 if respondent saves at a bank	329	0.46	0.50	0	1
Deposit Often	1 if respondent makes deposits monthly or weekly on average, conditional on saving at bank	150	0.27	0.44	0	1
Deposit Amount	Average bank deposit amount, conditional on saving at bank	140	836.07	810.89	25	2000
Save in Cash	1 if respondent saves at in cash at home	289	0.18	0.39	0	1
Save in Illiquid Assets	1 if respondent only saves in jewelry, animals, or grain inventory	289	0.79	0.41	0	1
Risk Share	1 if respondent would borrow money from friends or family in event of need	329	0.49	0.50	0	1
Savings>1000 Lei	1 if total savings is 1000 Lei or more	278	0.29	0.46	0	1
Savings 500-1000 Lei	1 if total savings is 500 to 999 Lei	278	0.14	0.35	0	1
Savings 100-500 Lei	1 if total savings is 100 to 499 Lei	278	0.21	0.40	0	1
Savings 50-100 Lei	1 if total savings is 50 to 99 Lei	278	0.15	0.36	0	1
Savings 1-50 Lei	1 if total savings is 1 to 49 Lei	278	0.20	0.40	0	1
Save Amount (Lei)	Midpoint of savings categories, above	278	775.99	824.94	25	2000
Bank Deposits (Lei)	Imputed annual bank deposits, conditional on saving at bank	123	1950.00	2047.55	25	9125
Control Variables						
Age	Age of respondent in years	320	44.77	10.98	20	73
Female	1 if respondent is female	330	0.39	0.49	0	1
Higher Education	1 if highest education is beyond high school (including Ag. Tech School)	330	0.50	0.50	0	1
Household Size	Total number of adults, elderly, and children	328	4.41	1.82	1	13
Raven Score	Score on raven's test (out of 12)	324	4.84	2.75	0	10
Wealth Index	1 for every item owned in durable goods menu. (Out of 11 items)	329	6.58	2.03	0	11
Ln(Crop Output)	Natural log of total crops (tons) harvested in 2013	312	2.89	1.21	-1.39	9.95
Ln(Land Holdings)	Natural log of 1 + total farmland holdings (ha)	329	1.533	.655	0	4.615
Year applied to M141	Year that respondent applied for EU M141 cash transfer	331	2010.55	0.54	2009	2012
Score on M141	Score on M141 application	331	32.39	9.42	15	75
Selected for M141	1 if respondent receives EU M141 cash transfer	331	0.55	0.50	0	1
Reapplied for M141	1 if respondent was originally rejected for M141, but reapplied	142	0.39	0.49	0	1
Land Subsidy	1 if respondent receives land subsidies	330	0.72	0.45	0	1
Animal Subsidy	1 if respondent receives animal subsidies	328	0.45	0.50	0	1
Include Experimental Data	1 if respondent completed experiments	331	0.92	0.28	0	1
Distance to ATM (Km)	Euclidean Distance in km to nearest bank-owned ATM	331	9.88	6.95	0	28.23
Drive Distance to ATM (Km)	Driving distance (on roads) to nearest bank-owned ATM	331	12.60	7.82	0	39.5
Drive to ATM (min)	Minutes of drive time (on roads) to nearest bank-owned ATM	331	15.98	9.15	0	45
Village-level Variables						
Slope	Slope of respondent's village	58	7.20	5.39	0.33	24.11
Elevation	Elevation of respondent's village	58	364.48	161.35	73.28	823.51
Distance to Suceava	Distance to Suceava City (capital) in km	58	25.71	12.99	5.46	57.17
Distance to True Border	Distance of respondent's village to the true border (km)	58	7.78	8.60	0.52	34.98
Distance to Exogenous Border	Distance of respondent's village to the exogenous border (km)	58	8.25	8.88	0.09	36.24
Road Density	Km of roads per sq. km of area	58	.18	.37	0	2.48

Table 5: Normalized Differences in Means

	N	Habsburg	N	Ottoman	Norm. Diff
Outcomes					
Risky Choices	162	5.759	134	5.112	0.278
Discount Rate	162	0.910	134	0.898	0.208
Hyperbolic	162	0.130	134	0.112	0.038
Proportion Sent	158	0.451	155	0.506	-0.195
Proportion Returned	157	0.378	152	0.385	-0.024
Save	166	0.910	164	0.933	-0.061
Save at Bank	166	0.476	163	0.436	0.057
Save in Cash	142	0.190	147	0.177	0.024
Deposit Often	79	0.316	71	0.211	0.169
Deposit Amount	74	829.054	66	843.939	-0.013
Save in Illiquid Assets	142	0.782	147	0.803	-0.037
Savings>1000 Lei	140	0.314	138	0.275	0.060
Savings 500-1000 Lei	140	0.121	138	0.167	-0.091
Savings 100-500 Lei	140	0.200	138	0.210	-0.018
Savings 50-100 Lei	140	0.143	138	0.167	-0.046
Savings 0-50 Lei	140	0.221	138	0.181	0.071
Save Amount (Lei)	140	795.893	138	755.797	0.034
Annual Bank Deposits	60	2225.833	63	1687.302	0.186
Individual Covariates					
Age	165	44.836	155	44.697	0.009
Female	166	0.361	164	0.415	-0.077
Higher Education	166	0.488	164	0.518	-0.043
Household Size	166	4.645	162	4.160	0.189
Raven Score	166	4.584	158	5.108	-0.135
Wealth Index	166	6.482	163	6.687	-0.071
ln(Crop Output - Kg)	155	2.789	157	2.999	-0.123
ln(1+Land Holdings)	166	1.515	163	1.552	-0.041
Risk Share	165	0.467	164	0.506	-0.056
Year applied to M141	166	2010.645	165	2010.448	0.261
Score on M141	166	32.410	165	32.364	0.003
Selected for M141	166	0.530	165	0.564	-0.047
Reapplied for M141	75	0.320	67	0.463	-0.207
Land Subsidy	166	0.777	164	0.671	0.169
Animal Subsidy	166	0.482	162	0.426	0.079
Include Experimental Data	166	0.922	165	0.909	0.032
Ln(1+Euclidean Distance to ATM)	166	1.760	165	2.241	-0.492
Ln(1+Drive Dist to ATM)	166	2.133	165	2.582	-0.388
Ln(1+Drive time to ATM)	166	2.326	165	2.853	-0.457
Village-level Covariates					
Slope	26	9.351	32	5.443	0.531
Elevation	26	456.723	32	289.537	0.833
ln(1+Distance to Suceava City)	26	3.212	32	3.135	0.106
ln(1+Distance to True Border)	26	2.085	32	1.574	0.435
ln(1+Distance to Exogenous Border)	26	2.258	32	1.506	0.646
ln(1+Road Density)	26	0.167	32	0.105	0.205

Table 6: Imperial Persistence in Portfolio Allocation

	(1) Save at Bank	(2) Save at Bank	(3) Deposit Often	(4) Deposit Often	(5) Deposit Amount	(6) Deposit Amount	(7) Save in Cash	(8) Save in Cash	(9) Save Illiquid	(10) Save Illiquid	(11) Risk Share	(12) Risk Share
Habsburg	0.0375	0.0507	0.0718	0.0592	11.83	26.54	0.0816*	0.0841*	-0.0814	-0.0872	-0.0726	-0.0688
	(0.140)	(0.141)	(0.0693)	(0.0769)	(143.4)	(156.9)	(0.0444)	(0.0451)	(0.0540)	(0.0558)	(0.0614)	(0.0659)
Risky Choices		-0.0226		0.0155		-13.11		-0.00431		0.00988		-0.00646
		(0.0175)		(0.0349)		(40.21)		(0.0105)		(0.0115)		(0.0204)
Discount Rate				-1.645		3091.8*						
				(1.446)		(1584.9)						
R^2	0.0812	0.0858	0.110	0.121	0.0555	0.0670	0.0432	0.0435	0.0527	0.0541	0.0504	0.0508
N	240	240	118	118	118	118	240	240	240	240	240	240

All regressions are OLS estimates. Robust standard errors clustered at the village level in parentheses. All estimations include the following covariates: age, higher education, female, household size, wealth index, selected for M141, elevation, ln(distance to exogenous border). * p< 0.10, ** p<0.05, *** p < 0.01.

Table 7: Imperial Persistence in Savings

	(1) Save (0 or 1)	(2) Save (0 or 1)	(3) Bank Deposits	(4) Bank Deposits	(5) Bank Deposits	(6) Save >1000	(7) Save >1000	(8) Save >1000	(9) Save >1000	(10) Save Amount	(11) Save Amount	(12) Save Amount	(13) Save Amount
Habsburg	-0.00932	-0.0130	3802.0*	3879.1*	4068.9*		0.152**	0.161***	0.161***		232.9**	250.9**	243.8**
	(0.0242)	(0.0251)	(2089.3)	(2294.1)	(2398.5)		(0.0569)	(0.0588)	(0.0538)		(112.3)	(117.9)	(111.5)
Discount Rate	-0.198			-2033.1		-0.923		-1.132		-1801.5		-2126.8	
	(0.146)			(14294.7)		(0.756)		(0.735)		(1399.5)		(1383.7)	
Risky Choices	-0.00946	-0.00980		-120.9	-106.1	0.0172		0.0116	0.00470	27.69		18.87	7.511
	(0.00873)	(0.00886)		(547.6)	(562.8)	(0.0174)		(0.0170)	(0.0179)	(37.27)		(37.08)	(36.54)
Present-Biased		0.0254			-3482.8				-0.231***				-308.6**
		(0.0192)			(2895.4)				(0.0771)				(127.5)
Save at Bank						0.124*	0.111*	0.122*	0.115*	266.4*	243.8*	262.9*	249.9*
						(0.0648)	(0.0646)	(0.0664)	(0.0651)	(132.3)	(133.5)	(135.6)	(134.0)
R2	0.0669	0.0660	0.125	0.125	0.129	0.0783	0.0899	0.0997	0.106	0.0937	0.0992	0.109	0.108
N	221	221	103	103	103	221	221	221	221	221	221	221	221

All regressions are OLS estimates. Robust standard errors clustered at the village level in parentheses All estimations include the following covariates: age, higher education, female, household size, wealth index, ln(crop output), selected for M141, elevation, ln(distance to exogenous border). * p< 0.10, ** p<0.05, *** p < 0.01.

Table 8: Imperial Persistence in Preferences

	(1) Risky Choices	(2) Risky Choices	(3) Discount Rate	(4) Discount Rate	(5) Present Biased	(6) Present Biased	(7) Proportion Sent	(8) Proportion Sent
Habsburg	0.453*	0.427*	0.0114**	0.0108**	0.0172	0.0220	0.00519	0.00915
	(0.260)	(0.253)	(0.00485)	(0.00514)	(0.0360)	(0.0347)	(0.0308)	(0.0297)
Discount Rate		2.279						-0.134
		(3.263)						(0.473)
Risky Choices				0.00138		-0.0104		-0.00562
				(0.00195)		(0.00766)		(0.00865)
R^2	0.0732	0.0761	0.0590	0.0619	0.0397	0.0439	0.0713	0.0743
N	277	277	277	277	277	277	272	272

All regressions are OLS Estimates. Robust standard errors clustered at the village level in parentheses. All estimations include the following covariates: age, higher education, female, household size, wealth index, selected for M141, elevation, ln(distance to exogenous border). * p< 0.10, ** p<0.05, *** p < 0.01.

Table 9: Effects of Transaction Costs on Portfolio Allocation

	(1) Save at Bank	(2) Deposit Often	(3) Deposit Amount	(4) Save in Cash	(5) Save Illiquid	(6) Risk Share
ln(Euclidean Dist to ATM)	-0.0701	-0.103**	293.3***	-0.0379	0.0780**	0.0829***
	(0.0507)	(0.0452)	(74.91)	(0.0234)	(0.0305)	(0.0263)
Risky Choices	-0.0232	0.0157	-2.343	-0.00220	0.00922	-0.00613
	(0.0172)	(0.0341)	(36.65)	(0.0101)	(0.0112)	(0.0199)
Discount Rate		-1.546	2582.9*			
		(1.414)	(1413.7)			
R^2	0.0936	0.142	0.126	0.0400	0.0647	0.0609
N	240	118	118	240	240	240

All regressions are OLS Estimates. Robust standard errors clustered at the village level in parentheses. All estimations include the following covariates: age, higher education, female, household size, wealth index, selected for M141, elevation, ln(distance to exogenous border). * p< 0.10, ** p<0.05, *** p < 0.01.

Table 10: Effects of Transaction Costs on Savings

	(1) Save>1000	(2) Save>1000	(3) Save Amount	(4) Save Amount
ln(Euclidean Dist to ATM)	-0.0824**	-0.0836**	-184.1**	-187.7**
	(0.0381)	(0.0389)	(68.90)	(70.17)
Discount Rate		-0.850		-1651.7
		(0.785)		(1469.5)
Risky Choices		0.0105		13.04
		(0.0166)		(36.29)
R^2	0.0717	0.0776	0.0886	0.0948
N	221	221	221	221

All regressions are OLS Estimates. Robust standard errors clustered at the village level in parentheses. All estimations include the following covariates: age, higher education, female, household size, wealth index, ln(crop output) selected for M141, elevation, ln(distance to exogenous border). * p< 0.10, ** p<0.05, *** p < 0.01.

Table 11: Cultural Channels of Imperial Persistence

	(1) Save>1000	(2) Save>1000	(3) Save Amount	(4) Save Amount
Mean Village Savings	-0.0000795	-0.0000935	-0.104	-0.109
	(0.000118)	(0.0000964)	(0.232)	(0.196)
Habsburg		0.253***		404.9***
		(0.0820)		(142.7)
ln(Euclidean Dist ATM)	-0.0809		-179.6**	
	(0.0494)		(85.58)	
Risky Choices	0.0152	0.0141	22.50	22.64
	(0.0157)	(0.0162)	(35.87)	(37.18)
Discount Rate	-0.837	-1.026	-1621.4	-1859.0
	(0.842)	(0.810)	(1528.3)	(1477.5)
R^2	0.0895	0.117	0.103	0.114
N	216	216	216	216

All regressions are OLS estimates. Robust standard errors clustered at the village level in parentheses. All estimations include the following covariates: age, higher education, female, household size, wealth index, ln(crop output) elevation, ln(distance to exogenous border), and the village-mean values of all covariates (excluding observation i). * p< 0.10, ** p<0.05, *** p < 0.01.

Table 12: Gravity Estimates − Preferences and Savings

	(1) Risk Difference	(2) Time Difference	(3) Save (Manhattan Dist.)	(4) Save>1000 Difference	(5) Save Amount Difference
ln(Distance - km)	0.0580*	0.00198	-0.0196	-0.0156	-25.06
	(0.0307)	(0.00134)	(0.0366)	(0.0164)	(28.64)
Risk (Manhattan Distance)			-0.0243	-0.0163	-9.726
			(0.0508)	(0.0243)	(51.46)
Discount Rate Difference			0.284	0.670	1010.0
			(1.672)	(0.628)	(1161.2)
R^2	0.547	0.910	0.381	0.351	0.357
N	1275	1275	1128	1128	1128

The Manhattan Distance is a measure of dissimilarity in the categorical savings and risk questions between villages, where: $MD_{ij} = \Sigma_{r=1}^{R} |s_{ri} - s_{rj}|$ and s_{ri} is the share of responses in village i (or j) that correspond to the rth category in the savings variable, of which there are 5 for savings questions and 10 for risk questions. All estimates include robust clustered standard errors adjusted for multi-way clustering at the village level, following the Cameron et al. (2011) method. All regressions include dyadic differences in control variables from the cross-sectional regressions, as well as a dummy for each village in the pair (i.e., village 1 and village 2).
* p< 0.10, ** p<0.05, *** p < 0.01.

Table 13: Falsification Test − Savings

	(1) Save (0/1)	(2) Save>1000 Lei	(3) Save Amount
Placebo Habsburg	0.00320	-0.113	-262.6
(Habsburg Sample)	(0.0317)	(0.0911)	(162.6)
N	117	117	117
Placebo Habsburg	-0.0261	0.0485	80.07
(Ottoman Sample)	(0.0357)	(0.113)	(202.9)
N	104	104	104

All regressions are OLS Estimates. Robust standard errors clustered at the village level in parentheses. All estimations include the following covariates: age, higher education, female, household size, wealth index, ln(crop output), selected for M141, elevation, ln(distance to placebo border). * p< 0.10, ** p<0.05, *** p < 0.01.

Table 14: Falsification Test − Preferences

	(1) Risky Choices	(2) Discount Rate	(3) Present Biased	(4) Proportion Sent
Placebo Habsburg	0.115	-0.00219	-0.00882	0.0109
(Habsburg Sample)	(0.194)	(0.00432)	(0.0415)	(0.0301)
N	149	149	149	145
Placebo Habsburg	0.160	-0.0137	0.0376	0.0260
(Ottoman Sample)	(0.440)	(0.0111)	(0.0582)	(0.0445)
N	128	128	128	144

All regressions are OLS Estimates. Robust standard errors clustered at the village level in parentheses. All estimations include the following covariates: age, higher education, female, household size, wealth index, selected for M141, elevation, ln(distance to placebo border). * p< 0.10, ** p<0.05, *** p < 0.01.

Table 15: Falsification Test − Financial Access in Suceava County

	(1) ATMs	(2) Straight Dist	(3) Drive Dist	(4) Drive Time
(Placebo Habsburg)	-0.464	0.188	0.0775	0.422
Habsburg Sample	(0.460)	(0.222)	(0.263)	(2.261)
N	80	80	80	80
(Placebo Habsburg)	0.613	-0.194	-0.286	-4.665
Ottoman Sample	(0.663)	(0.257)	(0.301)	(3.027)
N	34	34	34	34

Unit of observation is a district (Comuna). Standard errors in parentheses. *ATMs* are the number of ATMs in a given district. *Straight Dist* is the Euclidean distance from a given district to the nearest district with an ATM. *Drive Dist* is the natural logarithm of the driving distance from a given district to the nearest district with an ATM. *Drive Time* is the minutes of drive time from a given district to the nearest district with an ATM. Other covariates include elevation, population density, road density, and ln(distance to placebo border)." * p< 0.10, ** p<0.05, *** p < 0.01.

Table 16: Gravity Estimates: Portfolio Allocation

	(1) Save at Bank Difference)	(2) Save in Cash Difference	(3) Deposit Often Difference	(4) Save Illiquid Difference	(5) Risk Share Difference
ln(Distance - km)	0.00223	0.00452	0.0120	-0.000781	-0.00128
	(0.0141)	(0.00603)	(0.0192)	(0.00551)	(0.0150)
Risk (Manhattan Distance)	-0.0186	0.0356*	-0.00493	0.0510**	0.0206
	(0.0196)	(0.0191)	(0.0194)	(0.0229)	(0.0198)
R^2	0.441	0.703	0.498	0.674	0.467
N	1275	1225	861	1225	1275

Robust clustered standard errors adjusted for multi-way clustering at the village level, following the Cameron et al. (2011) method. All regressions include pair-wise differences in control variables from the cross-sectional regressions, as well as a dummy for each village in the pair (i.e., village 1 and village 2).
* p< 0.10, ** p<0.05, *** p < 0.01.

Table 17: Results from a Nationally Representative Sample

	(1) Trust in Banks	(2) Own Bank Account	(3) Save per Month (Lei)	(4) Save per Month (Lei)
Habsburg	-0.234	-0.038	38.217***	42.702***
	(0.262)	(0.213)	(12.587)	(12.523)
Risk	-0.004	-0.007	0.060	0.006
	(0.025)	(0.012)	(2.521)	(2.463)
Trust in Banks		0.023		13.278
		(0.017)		(11.630)
R^2	0.062	0.194	0.036	0.048
N	457	457	390	374

Data obtained from the EBRD Life in Transition Survey II (LITS II). Estimates restricted to primary sampling units (PSUs) within 95 km (the median distance) of the imperial border. All estimates are OLS. Robust standard errors clustered at the PSU level. *Trust in Banks* is a categorical variable on a scale from 1 to 5, where 1 represents complete distrust in "banks and the financial system" and 5 represents complete trust (with a sample average of 2.05). *Own Bank Account* is a binary variable equal to 1 if the respondent owns a bank account. *Save per Month* is the average amount of Lei per month the respondent reports to save. All regressions include the following controls: risk (subjective question: "On a scale of 1 to 10 how willing are you to take risk?"), age, household size, higher education (0/1), female (0/1), employed (0/1), PSU elevation, PSU ln(distance to true border). * p< 0.10, ** p<0.05, *** p < 0.01.

Table 18: Normalized Differences in Population

	N	Habsburg	N	Ottoman	Norm. Diff
Romania					
Population	1192	5951.96	1765	7027.53	-0.021
Population Density	1192	81.04	1765	112.41	-0.072
Romania - within 100 km of Border					
Population	725	5528.03	1123	5725.359	-0.010
Population Density	725	83.59	1123	113.75	-0.070
Romania - Rural and within 100 km of Border					
Population	630	2969.49	992	3746.22	-0.267
Population Density	630	41.67	992	70.53	-0.430
Suceava County					
Population	80	5450.81	34	5804.59	-0.031
Population Density	80	109.34	34	118.40	-0.035
Suceava County - Excluding Suceava City					
Population	79	4353.72	34	5804.59	-0.247
Population Density	79	88.43	34	118.40	-0.169
Suceava County - Rural					
Population	70	3860.14	26	3908.31	-0.018
Population Density	70	74.65	26	89.82	-0.198

Observations at the district (*Comuna*) level. Population data from the 2011 Romanian Housing and Population Census.

Table 19: Differences in Road Infrastructure

	Dependent Variable: Road Density (km per sq. km)					
	Romania (1)	Romania (2)	Romania (3)	Suceava (4)	Suceava (5)	Suceava (6)
Habsburg	0.085***	0.096***	0.173***	0.104	0.092	0.222**
	(0.031)	(0.031)	(0.034)	(0.089)	(0.089)	(0.092)
Sample	All	100km	Rural (100km)	All	Ex Suceava	Rural
Observations	2957	1848	1622	114	113	96
Adjusted R^2	0.463	0.414	0.187	0.587	0.245	0.150

Unit of observation is a district (Comuna). 100km restricts estimates to observations within 100 km of the true border. Columns (1)-(3) include fixed effects and robust clustered standard errors at the county level. Ex Suceava exludes Suceava City from the estimate. Standard errors in parentheses. Other covariates include elevation, population density, and ln(distance to exogenous border).

Table 20: Creditworthiness and Imperial History

	(1) % Overdue	(2) % Overdue	(3) % Overdue	(4) % Overdue
Habsburg	0.0136***	0.0136***	-0.00104	-0.000401
	(0.00444)	(0.00443)	(0.000825)	(0.000711)
Year Trend	0.0188***	0.0188***	0.00183***	0.00202***
	(0.000875)	(0.000879)	(0.000426)	(0.000429)
Population		9.79e-09	-7.78e-09	
		(2.04e-08)	(5.58e-09)	
Number of financial institutions			-0.00000772	
			(0.00000816)	
Per capita financial institutions				-0.00139***
				(0.000530)
Constant	-0.0445***	-0.0475***	0.00704***	0.00573***
	(0.00355)	(0.00660)	(0.00196)	(0.00134)
R^2	0.7691	0.7692	0.1742	0.1708
N	400	400	160	160

Population (2002-2014) and financial intermediation (2002-2008) data obtained from the Romanian National Institute of Statistics. Credit data (2005-2014) obtained from the National Bank of Romania. Observations at the County level. All estimates include county fixed effects. Robust standard errors in parentheses. * p< 0.10, ** p<0.05, *** p < 0.01.

Table 21: Relationship Between Entrepreneurship and Financial Intermediation

	(1) Own Bank Account	(2) Own Bank Account	(3) Self Employed	(4) Ever Tried to Start Business
Self Employed	0.134**			
	(0.0592)			
Ever tried to start a business		0.0828**		
		(0.0364)		
Habsburg			0.0078	0.0088
			(0.0138)	(0.0239)
N	1026	1026	1026	1026

Data obtained from the EBRD Life in Transition Survey II (LITS II). All estimates are OLS. Robust standard errors clustered at the PSU (Primary Sampling Unit). Columns (1)-(2) include PSU fixed effects. Columns (3)-(4) control for elevation and ln(distance to border), since PSU is perfectly correlated with *Habsburg*. All estimates include the following additional covariates: age, female, higher education, risk tolerance. * p< 0.10, ** p<0.05, *** p < 0.01.

Table 22: Demand for Liquid Savings

	(1) ln(Dist. ATM)	(2) Liquid Asset	(3) Liquid Asset
liquid	-0.186		
	(0.140)		
Risky Choices	-0.0202	-0.0285**	-0.0299**
	(0.0292)	(0.0129)	(0.0123)
Discount Rate	-1.362	1.184*	1.040*
	(0.919)	(0.582)	(0.586)
ln(Distance to ATM)			-0.0911*
			(0.0510)
R^2	0.144	0.0522	0.0683
N	277	277	277

Liquid Asset is a dummy variable equal to 1 if the respondent saves in a bank account or in cash at home. All regressions are OLS Estimates. Robust standard errors clustered at the village level in parentheses. All estimations include the following covariates: age, higher education, female, household size, wealth index, selected for M141, elevation, ln(distance to exogenous border). * p< 0.10, ** p<0.05, *** p < 0.01.

A Expressions and Proofs

1. Define $\omega^* = f(\tau, r, \lambda)$.

$$\max_{C_1} \log(C_1) + \beta \log(Y_1 - C_1) + \max_{\omega} \mathbb{E} \log[(1-\omega)(1+r)\tau + \omega Z]$$

Take the first order condition with respect to ω:

$$\frac{\partial}{\partial \omega} = 1/2 \left[\frac{\lambda - (1+r)\tau}{(1-\omega)(1+r)\tau + \omega\lambda} + \frac{1/\lambda - (1+r)\tau}{(1-\omega)(1+r)\tau + \omega 1/\lambda} \right] = 0 \Rightarrow$$

$$\omega^* = \frac{(1+r)\tau[2(1+r)\tau\lambda - \lambda^2 - 1]}{2[\lambda(1+(1+r)^2\tau^2) - (1+r)\tau(\lambda^2+1)]}$$

where I have accounted for the expected value of Z: $\mathbb{E}(Z) = \frac{\lambda}{2} + \frac{1}{2\lambda}$ □

2. Define $S_2^* = C_2^* = f(S_1^*, \omega^*, \tau, r, \lambda)$

$$\begin{aligned} S_2^* = C_2^* &= S_1^* \left[(1-\omega^*)(1+r)\tau + \omega^* \mathbb{E}(Z) \right] \\ &= S_1^* \left[\left(1 - \frac{(1+r)\tau[2(1+r)\tau\lambda - \lambda^2 - 1]}{2[\lambda(1+(1+r)^2\tau^2) - (1+r)\tau(\lambda^2+1)]} \right) (1+r)\tau \right. \\ &\quad \left. + \left(\frac{(1+r)\tau[2(1+r)\tau\lambda - \lambda^2 - 1]}{2[\lambda(1+(1+r)^2\tau^2) - (1+r)\tau(\lambda^2+1)]} \right) \frac{\lambda^2+1}{2\lambda} \right] \end{aligned}$$

where I have plugged in $\mathbb{E}(Z) \equiv \frac{\lambda^2+1}{2\lambda}$ □

3. Savings is decreasing in impatience.

$$\frac{\partial S_2^*}{\partial \delta} = -\left(\frac{Y_1}{(\delta+2)^2} \right) \left[(1-\omega)(1+r)\tau + \omega \mathbb{E}(Z) \right] < 0 \tag{14}$$

□

4. Allocation to the informal (formal) asset is increasing (decreasing) in transaction costs.

$$\frac{\partial \omega^*}{\partial \tau} = -\frac{(1+r)\lambda\big((1+r)^2\tau^2(\lambda^2+1) - 4(1+r)\tau\lambda + \lambda^2 + 1\big)}{2\big((1+r)^2\tau^2\lambda - (1+r)\tau(\lambda^2+1) + \lambda\big)^2}$$

$$< 0 \text{ if } \mathbb{E}(Z) \equiv \frac{\lambda^2+1}{2\lambda} > \frac{2(r+1)\tau}{(1+r)^2\tau^2+1}$$

□

5. Savings is decreasing in transaction costs.

$$\begin{aligned} \frac{dS_2^*}{d\tau} &= \frac{(1+r)S_1^*(\lambda^2-1)^2[(1+r)^2\tau^2-1]}{4\big((1+r)^2\tau^2\lambda - (1+r)\tau(\lambda^2+1) + \lambda\big)^2} \\ &> 0 \text{ if } (1+r)\tau > 1 \end{aligned} \tag{15}$$

□

6. Define demand for formal financial institutions.

$$\begin{aligned} D_1^F &= S_1^*(1-\omega^*) \\ &= \left[Y_1 - \frac{Y_1}{\beta+1}\right]\left(1 - \frac{(1+r)\tau_1[2(1+r)\tau_1\lambda - \lambda^2 - 1]}{2[\lambda(1+(1+r)^2\tau_1^2) - (1+r)\tau_1(\lambda^2+1)]}\right) \end{aligned}$$

□

7. Demand for formal financial institutions is decreasing in transaction costs.

$$\frac{\partial D_1^F}{\partial \tau_1} = \frac{\beta(1+r)\lambda Y_1[(1+r)^2\tau_1^2(\lambda^2+1) - 4(1+r)\tau_1\lambda + \lambda^2 + 1]}{2(\beta+1)[(1+r)^2\tau_1^2\lambda - (1+r)\tau_1(\lambda^2+1) + \lambda]^2}$$

$$> 0 \text{ if: } \mathbb{E}(Z) > \frac{2(1+r)\tau_1}{(1+r)^2\tau^2+1}$$

□

8. Savings is increasing in the portion allocated to the informal asset if $\mathbb{E}(Z) > (1+r)\tau$.

$$\begin{aligned}\frac{\partial S_2^*}{\partial \omega^*} &= S_1^*[\mathbb{E}(Z) - (1+r)\tau] \\ &> 0 \text{ if } \mathbb{E}(Z) > (1+r)\tau\end{aligned}$$

□

B Additional Estimates

Table 23: Correlations Between Preferences

	(1) Discount Rate	(2) Discount Rate	(3) Proportion Sent	(4) Proportion Sent	(5) Proportion Sent	(6) Risky Choices	(7) Risky Choices
Risky Choices	0.00341*				-0.00294		
	(0.00186)				(0.00709)		
Proportion Sent		-0.00116				-0.357	
		(0.0201)				(0.643)	
Discount Rate			0.0674				6.567**
			(0.467)				(3.044)
Present-Biased				-0.0449			
				(0.0467)			
Proportion Returned			0.294***	0.297***	0.293***		
			(0.0648)	(0.0659)	(0.0665)		
Age	-0.0000490	-0.00000144	0.000743	0.000654	0.000783	0.0140	0.0137
	(0.000162)	(0.000158)	(0.00111)	(0.00115)	(0.00113)	(0.0140)	(0.0137)
Higher Education	-0.00951*	-0.00949*	-0.0487	-0.0504*	-0.0492	0.00767	0.0826
	(0.00480)	(0.00486)	(0.0322)	(0.0293)	(0.0297)	(0.317)	(0.303)
Female	-0.00148	-0.00104	-0.0373	-0.0383	-0.0370	0.126	0.149
	(0.00514)	(0.00466)	(0.0345)	(0.0349)	(0.0347)	(0.233)	(0.224)
Wealth Index	0.00193	0.00198	0.00802	0.00819	0.00818	0.0134	-0.00241
	(0.00155)	(0.00151)	(0.00588)	(0.00542)	(0.00564)	(0.0766)	(0.0748)
Household Size	-0.00104	-0.00106	-0.00240	-0.00220	-0.00250	-0.00632	0.00244
	(0.00190)	(0.00200)	(0.00550)	(0.00560)	(0.00568)	(0.0684)	(0.0668)
Selected for M141	-0.0105	-0.0110	-0.00117	0.000882	-0.00226	-0.145	-0.0777
	(0.00666)	(0.00692)	(0.0220)	(0.0212)	(0.0210)	(0.316)	(0.316)
R^2	0.300	0.284	0.439	0.442	0.440	0.270	0.286
N	268	268	268	268	268	268	268

All regressions are OLS Estimates. Robust standard errors clustered at the village level in parentheses. All estimates include village-level fixed effects in addition to the displayed covariates. * p< 0.10, ** p<0.05, *** p < 0.01.

Table 24: Testing for Wealth and Income Differences

	(1) Wealth Index	(2) Wealth Index	(3) ln(Crop Output)	(4) ln(Crop Output)	(5) ln(Land Holdings)	(6) ln(Land Holdings)
Habsburg	-0.373	-0.443	-0.104	-0.0679	-0.00443	0.00494
	(0.300)	(0.325)	(0.186)	(0.180)	(0.0883)	(0.0891)
Age	-0.0273**	-0.0264*	-0.00202	-0.00162	0.00243	0.00238
	(0.0135)	(0.0134)	(0.00688)	(0.00696)	(0.00400)	(0.00400)
Female	0.0101	0.00583	-0.318**	-0.322**	-0.0679	-0.0678
	(0.267)	(0.257)	(0.154)	(0.151)	(0.0796)	(0.0804)
Higher Education	0.354	0.397	0.303**	0.298*	0.104	0.0999
	(0.252)	(0.258)	(0.149)	(0.151)	(0.0774)	(0.0791)
Household Size	0.0539	0.0529	0.000305	0.00183	-0.0120	-0.0118
	(0.0590)	(0.0601)	(0.0378)	(0.0393)	(0.0241)	(0.0248)
Selected for M141	0.139	0.198	0.132	0.104	0.0921	0.0844
	(0.307)	(0.295)	(0.189)	(0.188)	(0.0753)	(0.0737)
Elevation	0.000232	0.000146	-0.000412	-0.000322	0.0000864	0.000102
	(0.000779)	(0.000800)	(0.000624)	(0.000623)	(0.000230)	(0.000234)
ln(distance to exogenous border)	0.209	0.221	0.0164	0.0159	0.0291	0.0280
	(0.156)	(0.159)	(0.0869)	(0.0865)	(0.0342)	(0.0356)
Risky Choices		0.0245		-0.0631		-0.00753
		(0.0934)		(0.0486)		(0.0239)
Discount Rate		6.297**		-0.984		-0.662
		(2.922)		(1.792)		(1.360)
R^2			0.0537	0.0628	0.0241	0.0262
N	261	261	261	261	261	261

Columns (1)-(2) are Tobit Estimates, since the wealth index variable runs from 0 to 11. Columns (3)-(4) are OLS estimates. Robust standard errors clustered at the village level in parentheses. * p< 0.10, ** p<0.05, *** p < 0.01.

Table 25: Effects of Transaction Costs on Portfolio Allocation

	(1) Save at Bank	(2) Deposit Often	(3) Deposit Amount	(4) Save in Cash	(5) Save Illiquid	(6) Risk Share
ln(Drive Dist to ATM)	-0.0839**	-0.0881**	181.3***	-0.0156	0.0553**	0.0645**
	(0.0348)	(0.0380)	(53.63)	(0.0188)	(0.0265)	(0.0256)
Risky Choices	-0.0220	0.0179	-5.779	-0.000671	0.00741	-0.00819
	(0.0169)	(0.0346)	(33.84)	(0.00981)	(0.0110)	(0.0200)
Discount Rate		-1.775	3631.7***			
		(1.390)	(1089.7)			
R^2	0.113	0.146	0.190	0.0387	0.0634	0.0647
N	240	118	118	240	240	240

All regressions are OLS Estimates. Robust standard errors clustered at the village level in parentheses. All estimations include the following covariates: age, higher education, female, household size, wealth index, selected for M141, ln(Road Density), elevation, ln(distance to exogenous border). * p< 0.10, ** p<0.05, *** p < 0.01.

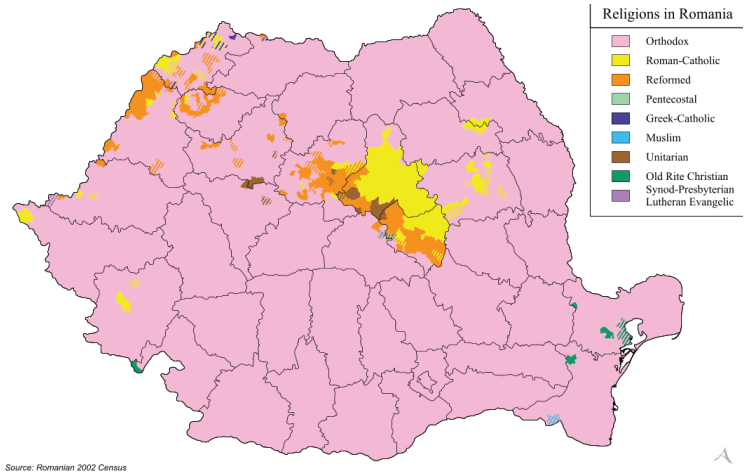
Table 26: Effects of Transaction Costs on Savings

	(1) Save>1000	(2) Save>1000	(3) Save Amount	(4) Save Amount
ln(Drive Dist to ATM)	-0.0569*		-131.0**	
	(0.0338)		(56.98)	
ln(Drive Time to ATM)		-0.0602*		-136.0**
		(0.0314)		(51.81)
Discount Rate	-0.851	-0.865	-1687.2	-1714.7
	(0.811)	(0.810)	(1510.9)	(1509.2)
Risky Choices	0.0114	0.0113	15.29	15.08
	(0.0170)	(0.0169)	(37.54)	(37.45)
R^2	0.0734	0.0752	0.0879	0.0901
N	221	221	221	221

All regressions are OLS Estimates. Robust standard errors clustered at the village level in parentheses. All estimations include the following covariates: age, higher education, female, household size, wealth index, ln(crop output) selected for M141, ln(Road Density), elevation, ln(distance to exogenous border). * p< 0.10, ** p<0.05, *** p < 0.01.

C Additional Figures

Figure 16: Religious Composition of Romania



Source: "ROreligion". Via Wikipedia - http://en.wikipedia.org/wiki/File:ROreligion.pngmediaviewer/File:ROreligion.png