

DISCUSSION PAPER SERIES

DP16431

**The Demand for Extraterritoriality:
Religious Minorities in Nineteenth-
Century Egypt**

Mohamed Saleh and Cihan Artunc

ECONOMIC HISTORY

CEPR

The Demand for Extraterritoriality: Religious Minorities in Nineteenth-Century Egypt

Mohamed Saleh and Cihan Artunc

Discussion Paper DP16431

Published 07 August 2021

Submitted 06 August 2021

Centre for Economic Policy Research
33 Great Sutton Street, London EC1V 0DX, UK
Tel: +44 (0)20 7183 8801
www.cepr.org

This Discussion Paper is issued under the auspices of the Centre's research programmes:

- Economic History

Any opinions expressed here are those of the author(s) and not those of the Centre for Economic Policy Research. Research disseminated by CEPR may include views on policy, but the Centre itself takes no institutional policy positions.

The Centre for Economic Policy Research was established in 1983 as an educational charity, to promote independent analysis and public discussion of open economies and the relations among them. It is pluralist and non-partisan, bringing economic research to bear on the analysis of medium- and long-run policy questions.

These Discussion Papers often represent preliminary or incomplete work, circulated to encourage discussion and comment. Citation and use of such a paper should take account of its provisional character.

Copyright: Mohamed Saleh and Cihan Artunc

The Demand for Extraterritoriality: Religious Minorities in Nineteenth-Century Egypt

Abstract

The transplantation of European legal systems in the periphery often occurred via semi-colonial institutions, where Europeans were subject to their own jurisdictions that placed them outside the reach of local courts. In nineteenth-century Egypt, extraterritoriality was extended to local non-Muslims, who could acquire the legal protection of a European polity. Drawing on Egypt's population censuses in 1848 and 1868, we show that locals did not seek extraterritoriality to place themselves under more efficient jurisdictions. Rather, legal protection mitigated uncertainty about which law would apply to any contractual relationship in an environment where multiple legal systems co-existed and overlapped.

JEL Classification: K40, N35, N45

Keywords: legal pluralism, extraterritoriality, protégé, non-Muslim minorities, Middle East

Mohamed Saleh - mohamed.saleh@tse-fr.eu
Toulouse School of Economics and CEPR

Cihan Artunc - cartunc@middlebury.edu
Middlebury College

Acknowledgements

Saleh acknowledges funding from ANR under grant ANR-17-EURE-0010 (Investissements d'Avenir program). We thank the seminar participants at Yale and Northwestern for very helpful comments and suggestions. We are grateful to Félix Bajard and Galila Nasser for their excellent research assistance.

The Demand for Extraterritoriality

Religious Minorities in Nineteenth-Century Egypt

Cihan Artunç Mohamed Saleh*

August 6, 2021

Abstract

The transplantation of European legal systems in the periphery often occurred via semi-colonial institutions, where Europeans were subject to their own jurisdictions that placed them outside the reach of local courts. In nineteenth-century Egypt, extraterritoriality was extended to local non-Muslims, who could acquire the legal protection of a European polity. Drawing on Egypt's population censuses in 1848 and 1868, we show that locals did not seek extraterritoriality to place themselves under more efficient jurisdictions. Rather, legal protection mitigated uncertainty about which law would apply to any contractual relationship in an environment where multiple legal systems co-existed and overlapped.

Keywords: legal pluralism, extraterritoriality, protégé, non-Muslim minorities, Middle East

JEL numbers: K40, N35, N45

*Artunç: Middlebury College, cartunc@middlebury.edu. Saleh: Toulouse School of Economics, University of Toulouse Capitole, mohamed.saleh@tse-fr.eu. Saleh acknowledges funding from ANR under grant ANR-17-EURE-0010 (Investissements d'Avenir program). We thank the seminar participants at Yale and Northwestern for very helpful comments and suggestions. We are grateful to Félix Bajard and Galila Nasser for their excellent research assistance.

1 Introduction

Over the last decades, a rich literature has stressed the primacy of legal traditions as key determinants of economic and financial development. According to this view, substantive differences between European legal systems—such as investor protection, barriers to entry, contracting flexibility, regulation in labor markets, judicial independence—are important factors in driving divergent fortunes across countries. A substantial empirical literature lends support to variations of this thesis, whether in cross-country studies (La Porta et al. 1997, 1998, 2008), or within countries (Acemoglu et al. 2011). There has also been significant debate on whether differences in legal traditions promote growth in the first place (Berkowitz et al. 2003, Klerman and Mahoney 2007, Graff 2008, Musacchio and Turner 2013).

While this literature has focused on the economic consequences of legal institutions, the causes of their adoption remain understudied. Most states adopted their legal institutions through military occupation or colonization. However, the transplantation of European legal systems in the periphery was not always immediate or merely an outcome of colonization. Instead, many countries, such as Japan or China, went through a “semi-colonial” period in which a plurality of legal systems co-existed, where European residents were subject to their own European jurisdictions that gave them extraterritorial rights, but locals remained under the control of the local “precolonial” legal system (Kayaoğlu and Kayaoğlu 2010, Cassel 2011). In the Ottoman Empire, European consulates extended the eligibility for these extraterritorial rights to Ottoman non-Muslims, who became able to demand the legal protection of a European polity among a menu of European jurisdictions. This created an unusual context, where a subset of the population within the same country was able to decide on an individual basis whether or not to demand extraterritoriality, and to effectively select their preferred legal system.¹

This paper investigates the determinants of individuals’ demand for extraterritoriality, and choice of law, among local non-Muslims in nineteenth-century Egypt, which

¹European nationals in the Ottoman Empire, on the other hand, did not have this choice in principle, because they automatically fell under the jurisdiction of the consular court of their nationality. There were dual-national Europeans, though, who acquired by choice the legal protection of a second European polity besides their country of nationality.

provides a rich setting to examine preferences over different legal regimes within the same country. Due to the Ottoman Empire’s concessionary agreements—capitulations—with European powers, European nationals enjoyed extraterritorial legal privileges in Egypt; they were subject to European laws under consular courts.² Over time, these privileges expanded to include local non-Muslims, who could acquire legal protection from consuls, and thus become pseudo-European nationals or “protégés.” Legal protection removed Egyptian residents from the local courts’ reach, and placed them under the jurisdiction of European consular courts.

We take advantage of Egypt’s legal pluralism, and of local non-Muslims’ and the protégés’ revealed preferences, to evaluate the causes of the demand for legal protection among local non-Muslims, and of the choice of polity among protégés.³ We focus on two hypotheses. For one, the *legal quality* hypothesis stresses the expansion of protégés as a flight from local laws to the more effective rules that the European legal systems provided for business organization. This view implies a hierarchy among European jurisdictions; some countries’ legal rules might provide better or easier access to attractive enterprise forms than others. In contrast, the *legal uncertainty* hypothesis explains the demand for legal protection by its improvement of contractual credibility and reduction of transaction costs in an environment where multiple legal systems coexisted. The European consular courts, applying their respective country’s laws, had competence over commercial affairs involving their nationals. With more than 15 overlapping jurisdictions, this framework led to a great deal of uncertainty about which law would apply to any contract. One way to grapple with this uncertainty was to become a protégé, which placed both contracting parties under the same law. This hypothesis implies that local non-Muslims were more likely to become protégés of a particular country if they expected to have more frequent contractual relationships with members of that country,

²Egypt was an autonomous Ottoman vassal state throughout the nineteenth century, ruled by the Ottoman viceroy Muhammad Ali Pasha (1805–1848) and his descendants. Following the British occupation of Egypt in 1882, the British authorities maintained the nominal sovereignty of the Ottoman Empire over Egypt until 1914. After the Ottoman Empire joined the war on the German side, Britain declared Egypt a British protectorate, independent of the Ottomans. Regardless, Ali’s dynasty continued to rule, first as an Ottoman vassal state under de facto British control from 1882 to 1914, second as a British protectorate from 1914 to 1922, and finally as an independent semi-constitutional monarchy under de facto British control from 1922 to 1952.

³Our period of study predates the creation of Egypt’s Mixed Courts in 1875 that were meant to address the legal pluralism issue.

regardless of the substantive content of the law.

The paper draws on a novel data source: Egypt's individual-level population census samples of 1848 and 1868 that were digitized from the original Arabic manuscripts at the Egyptian archives by [Saleh \(2013\)](#). We augment these with two oversamples of non-Muslims in Cairo in 1848 and 1868 ([Saleh 2015](#)). The Egyptian censuses, the earliest population-wide censuses in the Ottoman Empire and two of the earliest in any non-Western country, include a wide range of information such as name, place of origin, nationality, ethnicity, religion, and occupation. More importantly, they enable us to identify European nationals and local non-Muslim protégés, along with the European polity for protégés. We restrict our sample to adult local non-Muslim men who reside in Cairo and Alexandria.⁴ We focus on these two cities, because they include almost all protégés and European nationals.⁵

The Egyptian population censuses have their advantages and limitations in comparison to the Ottoman court records that the previous literature on Ottoman protégés has used. On the one hand, since the censuses enumerate the entire population, we are able to document the extent of the protégé take-up among all local non-Muslims, and to study the characteristics of the whole protégé population and their choices of jurisdiction. This overcomes the inevitable selection that arises with the use of court records, which are limited by construction to the segment of the population that uses courts and have legal disputes, possibly leading to overestimating the proportion of protégés. The Egyptian censuses also offer a more feasible means to study extraterritoriality, instead of having to go through the archival records of all 15 European consular courts, which are preserved in their respective countries' archives, as well as the local Ottoman Egyptian courts, which are preserved at the Egyptian archives.

On the other hand, unlike the court records, the population censuses do not record the contractual relationships between local non-Muslims and Europeans, which are ideally suited to test the implications of the legal uncertainty hypothesis. We partially address this limitation by examining the impact of the occupational and spatial networks

⁴We use the term "local" to indicate Ottomans, whether Egyptians or not.

⁵Cairo and Alexandria do not include all non-Muslims, though. The majority of Coptic Christians (94% of Egypt's non-Muslims) resided in rural provinces.

that local non-Muslims had with Europeans, which we can measure using the census samples, on the protégé take-up and on the protégés' polity choice. We measure the occupational networks by the proportion of Europeans in the individual's occupation, and the spatial networks by the proportion of European neighbors who live within a 250 meters radius of the individual's street address. The rationale is that these two types of networks plausibly reflect a higher likelihood for local non-Muslims to engage in contractual relationships with Europeans. We then complement the quantitative evidence with historical evidence on legal uncertainty from secondary sources.

We begin by establishing new empirical facts about Egypt's protégés; protégés made up 7% of the local non-Muslim population of Cairo and Alexandria in 1848, and 8% in 1868. Only a negligible proportion of Coptic Christians were protégés, despite accounting for 94% of Egypt's non-Muslim population, and 55% of the non-Muslim population of Cairo and Alexandria. In contrast, 18% of Jews and 12% of non-Coptic Christians (Levantines, Armenians, Ottoman Greeks) had legal protection. This suggests a limited role for legal protection in driving the socioeconomic superiority of local non-Muslims that has been documented in the literature (Tagher 1951, Issawi 1981, Panzac 1992, Courbage et al. 1997, Eldem 1999, Saleh 2015, 2016).⁶ This inter-religious socioeconomic gap (which is not the main focus of our paper) must have thus had different determinants (Saleh 2018).

We then turn to our main research question: what are the causes of the demand for legal protection and for the choice of jurisdiction? Our findings, based on historical evidence and the Egyptian census data, are not consistent with the legal quality thesis. In most European countries, especially in 1848, incorporation was costly and required government authorization. While some European legal systems introduced important reforms between 1848 and 1868, such as general incorporation statutes, these jurisdictions did not see any appreciable increase in the size of their protégé populations in Egypt. If anything, protégés selected into polities whose laws got more restrictive and less open with respect to business organization. Other European jurisdictions, whose commercial laws remained stagnant and needed reform, continued to attract local non-

⁶See Tignor (1980) for a seminal study on the origins and composition of Egypt's business elite during the early twentieth century.

Muslims into their ranks.

Next, we evaluate the legal uncertainty hypothesis by constructing econometric evidence on whether occupational and spatial networks with European immigrants affected local non-Muslims' acquisition of legal protection. We estimate an OLS regression, controlling for census year and occupation group (or in the case of spatial networks, neighborhood) fixed effects. We then address the potential endogeneity of the occupational and spatial distribution of European immigrants in Egypt by using a shift-share instrumental variable (IV), following the migration literature. We also employ an adjusted shift-share IV where we exploit the effect of the Egyptian cotton boom that was caused by the U.S. Civil War in 1861–1865 on Egypt's cotton trade patterns with its European partners, which may have altered the European immigration inflows into Egypt between 1848 and 1868. Our shift-share IV estimates are robust to validity checks most recently proposed by [Goldsmith-Pinkham et al. \(2020\)](#).

The findings support the legal uncertainty hypothesis. We document that local non-Muslims were more likely to become protégés, the higher the proportion of Europeans within their occupation or neighborhood, which reflects a higher chance of engaging in contractual relationships with Europeans. The OLS estimate of the effect of occupational networks with Europeans reveals that a one standard deviation rise in the proportion of Europeans in the occupation raises the probability of becoming a protégé among Egypt's non-Muslims by 43 percent, relative to the baseline probability of 3 percent. The OLS estimate of the effect of spatial networks with Europeans shows that the probability that a local non-Muslim person becomes a protégé rises by 51 percent when the proportion of European neighbors increases by one standard deviation. The 2SLS estimates show even larger effects, whether we use the shift-share IV or the adjusted one that is based on Egypt's cotton trade. We also obtain similar results when we restrict the sample to non-Coptic Christians and Jews, who constitute almost all protégés. We also dig deeper into the protégés' choice of law by running multinomial logistic regressions of the protégé's polity on each European country's presence in the protégé's occupational or spatial networks. While the results of occupational networks are imprecise due to the small number of observations, the results of spatial networks

demonstrate that protégés selected into the polity of their European neighbors.

We complement the econometric evidence with qualitative historical evidence which further supports that local non-Muslims became protégés in order to mitigate the uncertainty as to which court had jurisdiction when entering a contract with Europeans. We also investigate two alternative explanations of the protégé take-up: the persecution of non-Muslim minorities, and the risk of state expropriation. Neither explanation is consistent with the historical evidence. For one, Egypt's Ottoman viceroys during this period were tolerant toward non-Muslim minorities. Muslim mob violence against non-Muslims, which escalated in the aftermath of the French invasion of Egypt in 1798–1801, subsided during our period of study; even when it occurred, it targeted the Copts, not Jews and non-Coptic Christians, who made up most of the protégés. Furthermore, our census data reveal that protégés were not wealthier than non-protégés, in terms of real estate possessions that are the typical target of state confiscation.

Our findings do not support the view that individuals valued one legal system over another based on substantive differences in law, despite the emergence of important distinctions between European laws in this period. The evidence is also inconsistent with the notion that Ottoman protégés selected into European jurisdictions, and placed themselves out of Egyptian courts, because local legal institutions involved higher transaction costs and European laws were relatively more efficient. However, we do not necessarily disagree with the idea that contractual freedom in common law, or the introduction of general incorporation statutes, could have been important sources of financial or economic development ([La Porta et al. 1998](#), [Owen 1991](#), [Kuran 2011](#)), even if protégés seem to have flocked to seemingly “bad” European jurisdictions. Rather, our evidence highlights that the value of predictability in contracting surpassed other considerations, and provides a new dimension to consider in the legal origins debate.

Finally, our findings contribute to the broader scholarship on the role of European involvement in the development of non-European countries. The impact of European intervention depended on whether colonizers set up inclusive or extractive institutions ([Acemoglu and Johnson 2001](#)). Much like other states with strong central governments, Egypt was not directly colonized (at least, not until the British occupation of 1882). But

it was a semi-colonial country, still under Ottoman suzerainty and subject to unequal treaties—capitulations—with European powers. These treaties, like they did in Japan and the Chinese Empire, granted extraterritorial privileges to Europeans; the ensuing consular interference in circumventing local legal institutions led to political concern in these semi-colonial contexts, as well (Anghie 2007, Kayaoğlu and Kayaoğlu 2010). In the Ottoman Empire and Egypt, however, these privileges were extended to include local populations. In the Ottoman Empire, capitulations had a real impact on the evolution of commercial law and affected the direction of legal reform (Ahmad 2000, Ağır and Artunç 2021). This paper provides a different facet of capitulations and semi-colonial institutions by demonstrating how widely European privileges became available to local populations and how they made use of these institutions.

2 Legal Protection in Nineteenth-Century Egypt

The capitulations were concessionary agreements that gave Europeans extraterritorial rights across the Ottoman provinces. Thanks to these agreements, European nationals anywhere in the Ottoman Empire, including Egypt, had the right to use their own laws and be sued in their consular courts. In the eighteenth century, these extraterritorial privileges were extended to non-Muslim Ottoman subjects, who were employed by European consuls, usually as interpreters, guards, and intermediaries. The “extraterritorial” privileges of such non-Muslim minorities were formally recognized—in fact, granted—by the Ottoman administration through imperial licenses called *berats*. At first, these locals were genuine consular employees who conducted business for European missions. But as European foreign offices modernized and replaced locals with European staff, ambassadors and consuls started selling *berats* to local non-Muslims. This arrangement led to the emergence of a lucrative *berat* market through which local religious minorities could become protégés of European powers and acquire extraterritorial rights (Artunç 2015).

The Ottoman administration considered the protégé system to be a threat to its sovereignty, so it attempted to curb protégés’ growth. Following an Ottoman order in 1806 aiming at suppressing *berats*, the European powers agreed to stop *berat* sales

permanently in a series of bilateral treaties with the Ottoman Empire.⁷ Nevertheless, European consulates replaced the berat system with “letters of protection” and passports. Unlike the berat, these letters or passports did not require the approval of the Ottoman authorities but were rather issued by European consuls by their discretion (Rey 1899, p. 280). In order to compete with the European consulates, the Ottoman administration introduced its own “protection” in 1806 by creating a separate court system for merchants that Ottoman subjects could buy in. Although this system was somewhat successful in attracting rich non-Muslim Ottomans, it ultimately could not prevent the spread of European protection (Masters 1992, Artunç 2015, Ađır and Artunç 2021).

The supply of legal protection varied across European consulates during the nineteenth century. In principle, employees of European consulates such as interpreters and guards continued to benefit from legal protection, and rich non-Muslims continued to purchase protection as had been the case during the eighteenth-century. However, legal protection was also extended to other poorer non-Muslim subjects who were not employed by consulates, including shopkeepers, bakers, butchers, and artisans (Rey 1899, pp. 287–88). Legal protection was also extended for political or religious reasons, probably without a fee. Russia, and later Greece, pursued a particularly aggressive policy in granting Ottoman Greek Orthodox subjects passports, and in the case of Greece, outright naturalization (Rey 1899, pp. 280–81, 284–85). Similarly, Spain expanded its legal protection to Ottoman non-Muslims, especially the Sephardim, in order to employ them as intermediaries of Spain’s trade (Asuero 2007, p. 170).⁸

Not naturalized European subjects, but enjoying European extraterritorial rights as native Ottomans, the protégés had a hybrid legal status. They could use their European status to contract under European laws and be sued in consular courts, placing them out

⁷Rey (1899, pp. 279–80) lists the following treaties that suppressed berat sales: Britain (1809), Sardinia (1823), Sweden (1827), United States (1830), Tuscany (1833), Belgium (1838), Hanseatic cities (1839), Portugal (1843).

⁸As suggested to us by Timur Kuran, France extended legal protection to all Ottoman Catholics, Britain to Ottoman Protestants, and Russia to Greek Orthodox (Cansunar and Kuran 2019, pp. 6–7). This universal protection may have suppressed the individual demand for protection. However, this explanation is less applicable to Egypt in 1848 and 1868. Conversion to Protestantism among Copts did not pick up until the late nineteenth century; we only observe a handful of Protestants in the 1868 census, and none in 1848. The vast majority of Egypt’s Christians were neither Catholic nor Greek Orthodox; they were Coptic Christians and Armenians. Hence, this universal protection is applicable only to Greeks and a subset of Levantine Christians. Also, it does not apply to Egyptian Jewry.

of Ottoman courts' reach. As Ottoman subjects, they could also move any case to an Ottoman court, but still be represented by their European consul in these proceedings.

In response to the growth of protégés, the Ottoman Empire promulgated a new law in 1863 that no longer recognized the protégés' hybrid status, requiring native Ottomans to be subject to Ottoman laws and courts unless they became naturalized as European subjects. Many protégés pursued this route, obtaining European naturalization if possible. When this law failed in achieving its objective, the Ottoman government followed up with a new nationality law in 1869 that tried to denaturalize any one with dual status ([Arminjon 1903](#), pp. 58–67, 86–87; [Hanley 2016](#), pp. 277–98).

Even though the Ottoman sovereignty over Egypt was largely nominal throughout the nineteenth century, the Ottoman treaties with European powers applied to Egypt. This included the original capitulations, their extension to local populations in the eighteenth century, the abolition of *berats* during the first half of the nineteenth century, the introduction of letters of protection and passports by European consuls, and the Ottoman law of 1863. In practice, Egyptian viceroys, especially after the end of Muhammad Ali's rule in 1848, grew more lenient with European powers, giving them even more privileges, and did not curb the dispensation of legal protection to local non-Muslims. The proportion of protégés among the non-European non-Muslim population of Cairo and Alexandria was 7 percent in 1848 and rose slightly to 8 percent in 1868. Furthermore, Egypt's 1848 and 1868 censuses suggest that the Egyptian authorities did not even make a legal distinction between non-European protégés and European nationals; they were both treated as subjects of European consulates. According to the census decree issued in 1847, both types of "protégés" had to be enumerated by their consuls and not by the Egyptian government census takers; the same rule was apparently applied in the 1868 census judging from the information recorded about protégés.

3 Conceptual Framework

We evaluate two significant hypotheses that explain why non-Muslims in Egypt sought European legal protection: European laws provided more efficient rules for economic activity, or legal protection reduced legal uncertainty associated with overlapping

jurisdictions. This section formalizes the two hypotheses and summarizes their empirical implications.

Legal Quality Legal quality describes a broader institutional thesis, which views some legal rules to be more innovative or more conducive to economic activity than others. Many aspects of the law can be pertinent for economic activity: judicial independence, the flexibility afforded to business organization, the quality of contract enforcement, or the security of property rights. Substantive differences in these rules imply an ordering of legal systems; individuals will select into the legal jurisdiction that best fits their preferences, subject to other constraints. [Kuran \(2011\)](#) argues that historical institutions associated with Islamic law raised obstacles to economic development. Muslim entrepreneurs faced significant barriers to the corporation, had limited access to capital markets, could not exercise testamentary discretion due to restrictive inheritance rules, and had to navigate a court system that systematically favored the political elite ([Kuran 2011](#), [Kuran and Lustig 2012](#), [Kuran and Rubin 2018](#)).

Legal protection offered an alternative for Egypt's non-Muslim minorities. By becoming protégés, they could acquire access to a set of laws involving lower transaction costs for contracting and business organization. According to [Kuran \(2011\)](#), by the nineteenth century, innovations in European legal rules made businesses organization under European laws so much more effective than Ottoman law that the ranks of protégés proliferated in major urban centers. The exit option was also instrumental in the evolution of commercial law in the empire ([Ağır and Artunç 2021](#)).

The hypothesis that non-European non-Muslims became protégés to take advantage of better legal institutions yields two testable implications. First, if Egyptian law involved higher transaction costs for organizing modern enterprises, the take-up of legal protection should be more prevalent among occupations related to entrepreneurship or finance; the participation of professionals (e.g. doctors, lawyers, clerks) or workers should be smaller. Second, protégés should make use of better organizational forms that European laws provided, especially the corporation. Specifically, we should observe a sorting of protégés among consular jurisdictions. The European countries with the most advanced commercial laws should attract higher demand, absent supply con-

straints imposed by the consulates.

Legal Uncertainty The Egyptian legal environment involved a multiplicity of European consular courts, which applied distinct laws and held jurisdiction over their nationals in Egypt. This caused uncertainty about contract enforcement; parties did not know which law would ultimately have competence over a contract, a partnership, or a venture between European nationals of different polities, or between locals and European nationals.

To illustrate how legal pluralism might reduce contractual credibility by raising enforcement uncertainty, consider a simple setting in which parties contract on how much individual investment or effort they will exert, and an allocation of surplus after the product is delivered or produced. This example can cover a number of standard settings including joint investment, bilateral trade, debt contracts, or principal-agent relationships. Three assumptions are critical: individual decisions, whether effort or investment, are either private or are not verifiable by the courts with certainty, decisions of distinct courts are not perfectly correlated, and individual effort or investment costs are sunk. In these examples, potential disputes at the ex post stage reduce to zero-sum games. Either party will have the incentive to take the case to a more favorable jurisdiction. And given the option, the party that shirks from their contractual obligations will make litigation more costly for the plaintiff by forum shopping. Knowing that forum shopping is possible, parties from different jurisdictions will be less likely to enter into contractual relationships. If all parties have access to the same, single legal system, then forum shopping is not available. So, there is an equilibrium in which economic agents enter into contracts exclusively with members of the same jurisdiction. But, if jurisdictional shift is possible, then one party can place themselves under the other party's jurisdiction, thus bringing certainty as to which court system has jurisdiction over the contract and taking away the option to engage in forum shopping.⁹

We hypothesize that the protégé system fulfilled the role of such a commitment device to facilitate complex transactions (that is, anything more sophisticated than spot trade), between Europeans of different nationalities, as well as between Europeans and

⁹For a detailed, formal model of legal pluralism, see [Artunç \(2014\)](#).

Ottoman non-Muslims. The Egyptian economy had substantial European presence, and commercial disputes often involved Europeans. But, due to the capitulations, Europeans enjoyed extraterritorial privileges. Consuls followed the practice of *actor sequitur forum rei*; defendants had to be sued in their consular courts under that country's law. Appeals to a consul's decision triggered a new hearing outside of Egypt, for instance, Constantinople for Great Britain, Aix for France, Ancona for Italy, Athens for Greece. This provided a distinct advantage to Europeans in their contracts with Egyptians. Even if the European partner lost the case in their consular court, they could appeal to a new court outside of Egypt, staffed by their fellow nationals, discouraging an Egyptian party from suing at all. The system was equally hectic for disputes involving two European nationals of different polities. Forum shopping was rampant; in some cases, it could be facilitated easily by transferring property to different nationals to precipitate a new action in another consular court. Facing 15 distinct consular jurisdictions, it was difficult to ascertain where any dispute would end up (Hoyle 1991, pp. 6–7).¹⁰ The consular court systems' stranglehold on commerce was stifling trade to the extent that “no wise Egyptian [was] in partnership with a foreigner, nor [accepted] his surety.”¹¹ Local non-Muslims were similarly unwilling to take loans from or lend to Europeans, or engage in other contractual agreements (M'Coan 1873, pp. 22–24). This distinguishes the legal uncertainty hypothesis from that of legal quality; under legal uncertainty, having access to a European legal jurisdiction had value, not because the law in question was “better” in some substantive way, but due to its function as a credible commitment device.

The legal uncertainty hypothesis predicts that if local non-Muslims sought legal protection to reduce uncertainty in contract enforcement, the protégé take-up should be higher when such contractual arrangements were more likely to arise. In the absence of data on the contractual relationships, we exploit the occupational and spatial networks that local non-Muslims formed with Europeans. This leads to two testable implications. First, the protégé take-up should be higher among local non-Muslims working in occu-

¹⁰A contemporary legal scholar Demetriades writes, “[each] court applies a different law, and has a special procedure. . . . [The] parties to a contract . . . cannot tell, when they enter into the contract, before what jurisdiction they will have to plead in the event of any dispute, and according to what rules of law or procedure the question will be determined” (Demetriades 1891a, p. 148).

¹¹Hoyle (1991, pp. 6–7), also citing *The Times*, 12 Feb. 1870.

pations, or residing in neighborhoods, with a higher European presence, because they were more likely to engage in contractual arrangements with Europeans. It is thus possible under the legal uncertainty hypothesis that the protégé take-up is higher in business and finance if Europeans are over-represented in these occupations. Second, protégés should be more likely to choose the European polities with significant presence in their occupational or spatial network regardless of the content of the European law. For example, a non-Muslim merchant working in a trade with a significant Greek presence is more likely to seek Greek protection, even if Greek law is not friendly to businesses. This is a natural implication of the legal uncertainty hypothesis that distinguishes it empirically from the legal quality argument.

It is important to note that multiple equilibria may arise under the legal uncertainty framework. Since polity choice is a coordination game, individuals do not necessarily care which polity they buy into as long as it is the polity of their contractual partners. As a result, different polity configurations are feasible. For example, it is possible for parties to sort into a single jurisdiction to abate legal uncertainty, but choose that jurisdiction based on its legal quality. However, the key distinctive prediction of the legal uncertainty hypothesis is that the demand for legal protection, and the choice of European jurisdiction, are both functions of the contractual relationships with Europeans of a given nationality, without necessarily ranking European laws based on their quality.

4 Data

4.1 Protégés in the Egyptian 1848 and 1868 censuses

To examine the protégé take-up and the choice of European consulate among Egypt's local non-Muslim population, we take advantage of Egypt's 1848 and 1868 individual-level population censuses. These are among the earliest precolonial population censuses from any non-Western country, and the earliest in the Ottoman Empire, to include information on every household member including females, children, and slaves. The two censuses were conducted under Muhammad Ali Pasha (1805–48) and his grandson Khedive Ismail (1863–79), respectively. They include a wide range of variables including name, age, gender, religious affiliation, nationality, ethnicity (e.g., Armenian,

Levantine, Greek, British), place of origin, relationship to household head, occupational title, location of residence down to the street address in cities, dwelling ownership status (private ownership, religious endowment, state ownership), and dwelling type (house, palace, yard, shack, etc.) among other variables.

We employ two systematic nationally representative samples of around 80,000 observations in each of 1848 and 1868 that were constructed by [Saleh \(2013\)](#).¹² For the purpose of this article, we restrict the sample to Cairo and Alexandria, where almost all protégés and European nationals resided. The sampling rate is 8 (10%) in Cairo in 1848 (1868), and 10% (12%) in Alexandria in 1868. We augment these systematic samples by two oversamples of non-Muslims in Cairo in each of 1848 and 1868, where 1 in 4 non-Muslim households is selected into the sample, excluding those non-Muslim households that appear in the systematic samples. Throughout the analysis we apply a personal weight that is equal to the inverse of the sampling probability. This takes into account both the difference in the sampling probability between Cairo and Alexandria in each of 1848 and 1868, and the higher sampling probability of non-Muslims in Cairo in 1848 and 1868. We further restrict the empirical analysis to 15-year-old or older non-European non-Muslim males with non-missing religious affiliation. In the occupational networks analysis, we further restrict the analysis to those with non-missing occupation. In the spatial networks analysis, we restrict the analysis instead to those with non-missing coordinates.

The main outcome of interest is the protégé take-up among non-European non-Muslims. To construct this variable, we had to identify protégés of European consulates in the censuses. We also examine a second outcome: the choice of European consulate among protégés. We explain below how we constructed these two variables.

Protégés The population censuses enable us to identify protégés of European consulates: The 1848 population census decree dictated that protégés were to be “enu-

¹²The samples are constructed by stratification by province, where a targeted sample size for each province is determined a priori. A page is selected in the sample every range x of pages, and all the households that start on the page are entered in the sample, from the beginning until the end of each province’s census registers. The range of pages (x) is determined based on the targeted sample size, the total number of pages of the province’s registers, and the average number of individuals that appear on a given page in the province. For further detail, see [Saleh \(2013\)](#).

merated” by their European consulates, and not by the Egyptian census takers, and the same rule was applied in the 1868 census. However, no distinction is made in the decree between Europeans, i.e. European nationals of a European polity of origin, and non-European protégés, i.e. Egyptian and non-Egyptian nationals of a non-European polity of origin who acquired a protégé status from a European consulate. The default practice in compliance with this rule is that the census takers recorded the name of the protégé, their street address, and their dwelling information, with a note that generally takes the form: “not enumerated in the census [because] the individual is a protégé of consulate *x*.” In this case, the “enumeration” column assigns a 0 to the protégé, meaning that the person is not added to the cumulative enumeration sum of the census page. No further individual-level information about the protégé is provided, and, if the protégé is the household head, the protégé’s household members are not recorded.¹³ However, census takers varied in the additional individual-level information that they recorded about protégés (e.g., occupation), implying that they had some discretionary leeway in interpreting the census decree.

To identify protégés of non-European origin, we first identified all individuals who are recorded in the censuses as protégés of European consulates; according to the census definition, these include both European nationals and non-European protégés. We then added to the universe of the census-defined “protégés” all individuals with a European ethnicity, even if they are not explicitly recorded as protégés. The latter omission arises presumably because the census takers found the recorded information on ethnicity (e.g. French, British) sufficient to indicate the protégé status. Three remarks are in order. First, according to the Egyptian censuses, Persians were protégés of the Persian consulate (*bilad al-‘ajam*) and were thus not enumerated by the Egyptian census takers. However, we excluded them from our definition of protégés, because they are not under the legal protection of a European polity. Second, we included the U.S. consulate within our definition of European polities. Third, we also find that 11% of the protégés in our sample are Muslims. A priori, this is surprising because Muslims were in principle not eligible to become protégés during this period. It turned out that most Muslim

¹³If the protégé is not the household head, though, he/she is recorded among the other members of the household. For example, it is possible that a local non-protégé male is married to a protégé woman.

protégés in our sample are Algerians who are (self-)reportedly French protégés. We thus exclude them from the analysis, because they acquired the protégé status not by choice but rather because of the French occupation of Algeria in 1830. Recall that our focus is on the protégé status that was acquired by choice by the local population.

European Nationals versus Non-European Protégés To distinguish between European nationals and non-European protégés, we first employed the protégé’s place of origin and/or ethnicity,¹⁴ whenever they are available. For the vast majority of protégés, the two variables are missing though, and hence we had to rely on names. We classified as European nationals those with a European-sounding name, and as non-European protégés, those with a non-European-sounding name. For a minority of cases, we were not able to determine whether they are European nationals or not, because their names are neutral-sounding. Examples include Musa (Moses), Youssef (Joseph), Yaqoub (Jacob), Dawoud (David).¹⁵ We thus dropped these unclassified protégés from the sample. It is generally not possible though to further classify non-European-origin protégés into Egyptians and non-Egyptians, because their names are mostly too similar.

European Polity of Choice The Egyptian censuses record for the vast majority of non-European protégés their European polity of choice. We first standardized the European polities according to the political map of European polities in 1848 and 1868. We then homogenized the polities across the two censuses, in order to have comparable polities over time. For example, we aggregated the independent Italian states in 1848 to Italy in 1868. Similarly, we aggregated the Austrian Empire and the Hungarian Kingdom in 1848 to the Austro-Hungarian Empire in 1868.

¹⁴The nationality variable does not enable us to disentangle European nationals from non-European protégés; the Egyptian census takers considered both “outside the Egyptian government’s control” (i.e. foreigners). According to the Egyptian censuses not all foreigners are protégés of European polities, though: non-Egyptian Ottomans such as Turks, Ottoman Greeks, Levantines, and Armenians, are foreigners, yet they are not necessarily protégés, and are thus enumerated by the Egyptian census takers.

¹⁵The two versions of each name refer to the Arabic and English versions. The Egyptian census takers often recorded the Arabic version of the name, even for European nationals.

4.2 Data on Regressors

Our empirical analysis examines whether the demand for legal protection among non-European non-Muslims is driven by their occupational and spatial networks with European nationals. We measure both types of networks in the census samples.

Occupational Networks The censuses record the occupational titles for men. Nonetheless, because of the variation across census takers in the individual-level information on protégés, the occupational title is available for only a subset of protégés. Occupations are coded using the 5-digit HISCO occupational code (Saleh 2015). We measure the occupational networks with European nationals, among local non-Muslims, by the proportion of Europeans in the 5-digit HISCO occupational code.

Spatial Networks The censuses record the street address (dwelling number, street name) for all individuals in Cairo and Alexandria. We use the coordinates of street centroids in Cairo and Alexandria that are geolocalized by Lévêque and Saleh (2018). The percentage of individuals with non-missing coordinates in Lévêque and Saleh (2018)'s geolocalization is 79% in Cairo's systematic samples in each of 1848 and 1868, and 41% and 66% in Alexandria in 1848 and 1868, respectively.¹⁶ In the current paper, we improve upon Lévêque and Saleh (2018)'s geolocalization by imputing the coordinates for individuals with missing coordinates. To do so, we exploit the fact that the census registers follow a spatial order; census takers enumerated individuals moving from one street to the next within the same urban quarter, before moving to the adjacent quarter. We thus assign to individuals with missing coordinates, the coordinates of the individual in the nearest page within the same census register, and if available, within the same urban quarter.¹⁷ This imputation results in increasing the percentage of

¹⁶Lévêque and Saleh (2018) geolocalized only the systematic samples of Cairo and Alexandria in 1848 and 1868, but not the oversamples of non-Muslims in Cairo in each year. Lévêque and Saleh (2018)'s geolocalization is done by manually matching street names in the 1848 and 1868 census samples with current street names in Google Maps in 2014, which is then augmented by historical information on street locations in Mubarak (1887). The lower geolocalization rate in Alexandria is because its street names changed between 1848 and 2014 more than in Cairo.

¹⁷If all individuals (streets) of an urban quarter are not geolocated, we assign to each individual the non-missing coordinates in another urban quarter in the nearest page, as long as both quarters belong to the same census register. Hence, only if no individual (street) in a census register is geolocated, they remain with missing coordinates in our imputation procedure.

individuals with non-missing coordinates to 100% in Cairo in each of 1848 and 1868 (both in the systematic samples and the oversamples of non-Muslims) and to 83% and 80% in Alexandria in 1848 and 1868, respectively. We measure the spatial networks with Europeans, among local non-Muslims, by the proportion of Europeans among their neighbors who reside within a 250 meters radius.

5 Empirical and Historical Evidence

We employ the Egyptian censuses of 1848 and 1868 to document and explain the demand for extraterritoriality among Egypt’s local non-Muslim population. We first introduce in Section 5.1 descriptive statistics on the extent of the demand for legal protection in 1848 and 1868 Egypt by occupation and religious group. Next, Section 5.2 analyzes the historical and empirical evidence on legal quality. Section 5.3 introduces the evidence in support of the legal uncertainty hypothesis.

5.1 Descriptive Statistics

We start by describing the characteristics of the broader non-Muslim population in our census data. Figure 1 shows that non-Muslims, who constituted 6% of Egypt’s population in 1848 and 1868, were more likely than Muslims in Cairo and Alexandria to be white-collar workers and artisans and less likely to be unskilled non-farmer workers.¹⁸ The vast majority of non-Muslims were Coptic Christians, comprising 94% of Egypt’s non-Muslims, and 55% in Cairo and Alexandria.¹⁹ The remaining non-Muslim groups were (a) non-Coptic Christians: 4% of Egypt’s non-Muslims, and 29% of non-Muslims in Cairo and Alexandria; these were mainly Levantine Christians, Greeks, and Armenians, and (b) Jews, both Rabbinites and Karaites: 2% of non-Muslims and 16% of non-Muslims in Cairo and Alexandria.

Figure 2 shows the proportion of protégés among the local (non-European) non-Muslim adult male population of Cairo and Alexandria by religious group and census year, whereas Table 1 documents the characteristics of local non-Muslims by protégé

¹⁸Recall that we restrict the sample to Cairo and Alexandria, and hence we do not observe farmers.

¹⁹Non-Coptic Christians and Jews were almost entirely urban, residing in Cairo and Alexandria. The majority of Copts were rural, though, and were better off than Muslims in rural provinces.

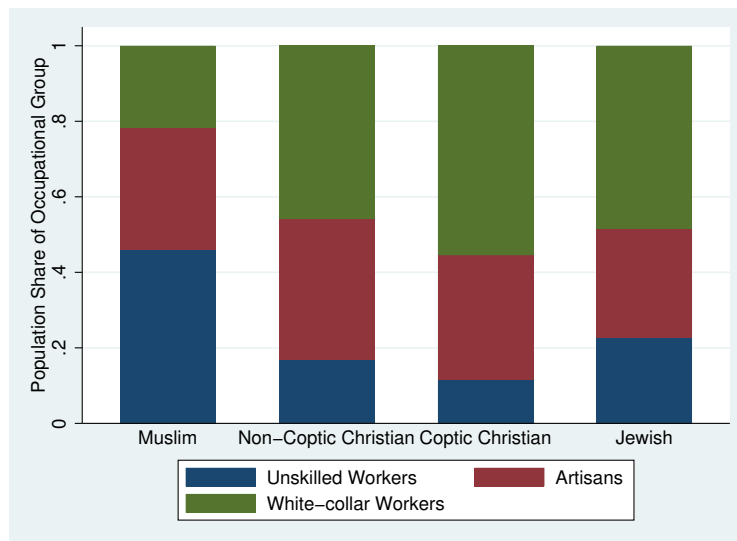


Figure 1: Inter-Religious Occupational Differences in Urban Egypt in 1848 and 1868

Notes: The sample is restricted to local (non-European) adult men who are at least 15 years of age with non-missing religious affiliation and occupational title in Cairo and Alexandria in 1848 and 1868. The statistics are weighted by the inverse sampling probability.
 Source: The 1848 and 1868 population census samples.

status. The key finding is that protégés constituted 7% of local non-Muslims of Cairo and Alexandria in 1848 and that this proportion increased to 8% in 1868. While the proportion of protégés was negligible among Copts, it reached 18% among Jews and 12% among non-Coptic Christians. The concentration of legal protection among a small proportion of non-Muslims suggests that it played a limited role in driving the inter-religious socioeconomic disparities. We interpret the inter-religious differences in the protégé take-up by the occupational differences across religious groups. Unlike Jews and non-Coptic Christians, whose socioeconomic advantage stemmed from trade and finance where the protégé status presumably mattered because of the contractual relationships with Europeans, Copts' advantage stemmed from their over-representation in the mid-low bureaucracy and artisanship where the protégé status played less of a role. Consistent with this interpretation, we find that protégés are indeed more likely than non-protégés to be white-collar workers, and in particular, workers in trade and finance, and less likely to be artisans and unskilled workers.

That said, we also emphasize that the demand for legal protection is not confined to non-Muslim white-collar workers or those working in trade and finance. Thirty-

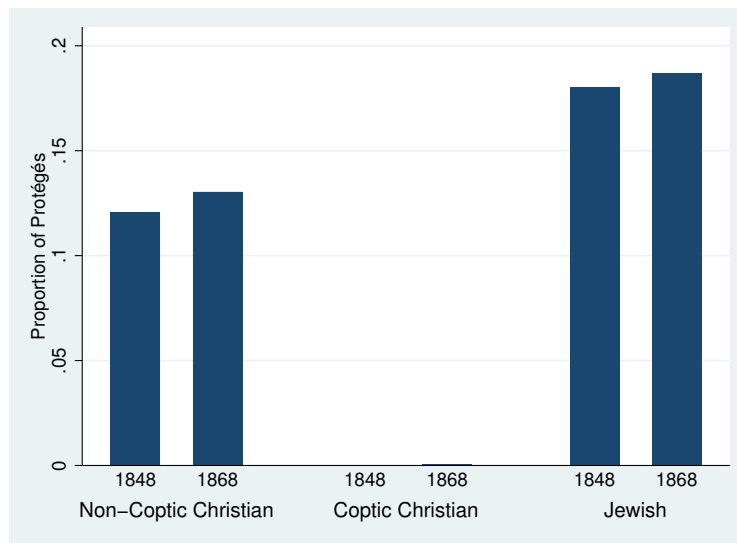


Figure 2: The Protégé Take-up by Religious Group in 1848 and 1868

Notes: The sample is restricted to local (non-European) non-Muslim adult men who are at least 15 years of age with non-missing religious affiliation in Cairo and Alexandria in 1848 and 1868. The statistics are weighted by the inverse sampling probability.

Sources: The 1848 and 1868 population census systematic samples, and the two over-samples of non-Muslims in Cairo in 1848 and 1868.

four percent of protégés were artisans and unskilled workers, and 47% worked in other occupations unrelated to trade and finance. Table 1 also demonstrates that there were no significant differences in the dwelling status condition between protégés and non-protégés. Furthermore, while protégés were less likely to live in Waqf-owned or state-owned dwellings, they were less likely to have had servants or slaves, suggesting that they belonged to the urban middle class. This qualifies the historical narrative that protégés were exclusively rich traders and financiers in the Ottoman Empire.

5.2 Legal Quality

The descriptive statistics show that protégés constituted only a modest proportion of Egypt's local urban non-Muslim population. Most were Jews and non-Coptic Christians but legal protection was almost non-existent among Coptic Christians, by far the largest non-Muslim group. The legal quality hypothesis traces this demand to benefiting from differences in quality of the legal system across jurisdictions, and specifically gaining access to the corporation. Recall from Section 3 that under the legal quality hy-

Table 1: Characteristics of Urban Egypt’s Non-Muslim Population in 1848 and 1868 by Protégé Status

	Non-Protégés			Protégés			Diff
	N	Mean	SD	N	Mean	SD	
=1 if Coptic Christian	4233	0.51	0.50	299	0.00	0.05	-0.504***
=1 if non-Coptic Christian	4233	0.36	0.48	299	0.64	0.48	0.275***
=1 if Jew	4233	0.13	0.34	299	0.36	0.48	0.229***
=1 if white-collar	3549	0.51	0.50	107	0.64	0.48	0.134**
=1 if trade or finance worker	3549	0.29	0.45	107	0.53	0.50	0.246***
=1 if artisan	3549	0.34	0.47	107	0.26	0.44	-0.078
=1 if unskilled worker	3549	0.15	0.36	107	0.09	0.29	-0.058*
=1 if in low-status dwelling	4233	0.09	0.29	299	0.09	0.28	-0.004
=1 if in mid-status dwelling	4233	0.15	0.36	299	0.18	0.38	0.022
=1 if in unknown-status dwelling	4233	0.75	0.43	299	0.74	0.44	-0.018
=1 if in Waqf or state-owned dwelling	3789	0.27	0.44	266	0.19	0.39	-0.085***
=1 if has servants or slaves	4233	0.24	0.43	299	0.18	0.38	-0.066**

Notes: Low-status dwellings include yards, ruins, cemeteries, rooms, shacks, poorhouses. Mid-status dwellings include caravanserais and group quarters. Unknown-status buildings include all other types for which we could not classify as low-status or mid-status (mostly, only mentioned as houses). The sample is restricted to local (non-European) non-Muslim adult men who are at least 15 years of age with non-missing religious affiliation in Cairo and Alexandria in 1848 and 1868. The statistics are weighted by the inverse sampling probability.

Sources: The 1848 and 1868 population census systematic samples, and the two over-samples of non-Muslims in Cairo in 1848 and 1868.

pothesis, we expect the protégé take-up to be higher in trade and finance occupations, where the commercial law quality matters, and that protégés sort into higher quality European jurisdictions. We discuss below whether the historical and empirical evidence is consistent with the implications of the legal quality hypothesis.

Our findings demonstrate that, at least in nineteenth-century Egypt, non-Muslim minorities were not becoming protégés to take advantage of differences in legal quality or gain access to the corporation. At the outset, this is consistent with the first implication of the legal quality hypothesis; the take-up is stronger in trade and finance, and among non-Coptic Christians and Jews, who were more likely to work in these occupations. But digging deeper, we find several pieces of evidence that rule out the second implication of legal quality: sorting of protégés into higher quality laws. First, despite the presence of European jurisdictions, and the application of these rules in Egypt, we do not see a meaningful take-up of the corporation as an enterprise form. Before 1868, only six corporations were ever founded, three under British law, one under French law,

and two under Egyptian law.²⁰

For the second piece of evidence, we turn to the protégés' revealed preferences. If legal quality had been driving the demand for legal protection, there should have been a higher take-up of protection from polities with laws that provided easier access to novel enterprise forms such as the corporation. Between the two census years, 1848 and 1868, only Great Britain (1857), the Netherlands (1863), and the United States adopted general incorporation statutes. France introduced this legislation in 1867, just a year prior to the census; Spain and Prussia, a few years after (1869 and 1870, respectively). Austria-Hungary adopted general incorporation much later, in 1899. Greece did not introduce such statutes until after the 1950s (Bogart et al. 2010, p. 85; Guinnane et al. 2007, p. 692; Pepelasis 1959, pp. 195-6). Given the variation in business law reform across European powers and the U.S., there should have been greater selection into jurisdictions that enacted such reforms. That is, the expansion of protégés between 1848 and 1868 should have been driven by increases in the number of British, Dutch, and American protégés.

Table 2: Polity Choice of Egypt's Protégé Population in 1848 and 1868

	1848			1868			Diff
	N	Mean	SD	N	Mean	SD	
=1 if France	102	0.15	0.36	194	0.19	0.39	0.040
=1 if Greece	102	0.14	0.35	194	0.16	0.37	0.024
=1 if Italy	102	0.31	0.46	194	0.18	0.39	-0.127**
=1 if Great Britain	102	0.08	0.28	194	0.09	0.29	0.010
=1 if Austro-Hungarian Empire	102	0.20	0.40	194	0.08	0.27	-0.124**
=1 if Russian Empire	102	0.03	0.18	194	0.03	0.17	-0.003
=1 if Spain	102	0.01	0.08	194	0.17	0.38	0.167***
=1 if Prussia	102	0.00	0.00	194	0.02	0.13	0.018**

Notes: The sample is restricted to protégés in Cairo and Alexandria. The statistics are weighted by the inverse sampling probability of individuals.

Sources: The 1848 and 1868 population census systematic samples, and the two over-samples of non-Muslims in Cairo in 1848 and 1868.

Our census data show that this is not the case. Table 2 reports the selection of

²⁰Compagnie Universelle du Canal Maritime de Suez in 1856, Bank of Egypt Limited in 1856, Société Anonyme des Monts-de-Piété Egyptiens in 1860, Alexandria Ramleh Railway Company Limited in 1862, Anglo-Egyptian Bank Limited in 1864, and Société Anonyme des Eaux du Caire—the only other Egyptian company among these—in 1865. See *Annuaire de la finance Égyptienne* (1907) and *Statistique des sociétés anonymes par actions travaillant principalement en Égypte*.

protégés into different European jurisdictions. Between the two census years, Spain and France registered substantial increases (although the increase is not statistically significant in the case of France). In 1848, only one percent took up Spanish protection; in 1868, 17% of protégés were under Spanish jurisdiction. The French share of protégés increased from 15% to 19%. One might think, based on the higher share of occupations being in trade and finance, that this significant sorting into Spanish and French jurisdictions could be driven by more efficient or commerce-friendly legal rules in these laws. However, this could not have been the case. Company law in France did not change much in this period except the Acts of 1863 and 1867. The 1863 Law standardized the authorization process for the corporations and made them less ad hoc, but incorporation still required authorization. General incorporation statutes became law only in 1867. This reform, being so late, could not have been the driver of increases in French protégés in the 1868 census, whose enumeration operations started before 1867. Before the 1867 Act, very few corporations were founded in France itself (Rochat 2018, pp. 248, 260).

Spain did not introduce its substantial legal reform during our period of study, either. The first Spanish commercial code, enacted in 1829, did introduce general incorporation. This introduction was early among all European powers. However, the outbreak of a civil war, which lasted from 1833 to the early 1840s, and the economic crisis of 1845, which the government blamed on speculative behavior and the crash of the stock market, put an end to this easy access to the corporate form. The subsequent 1848 Law reintroduced an ad hoc authorization process to form a corporation (or any company whose capital was divided into shares). Free incorporation was only restored in 1869, following the overthrow of the Spanish monarchy through a coup (Martínez-Rodríguez 2018, pp. 301–03). There were almost no Spanish protégés reported in the 1848 census, when Spanish laws were uniquely liberal with free access to the corporation. In 1868, there was a remarkable increase in Spanish protégés despite Spanish commercial code being its most restrictive between 1848 and 1869. As a result, the increase in the Spanish share of protégés, specifically driven by higher take-up by Jews in Alexandria, cannot be explained by the “quality” of Spain’s commercial law.²¹ The likelier expla-

²¹Our census data show that 55 percent of Spanish protégés in 1868 were Jewish; the rest were non-

nation is also more mundane; as Spanish trade expanded in the Levant, they turned to recruiting local non-Muslims, especially the Sephardim, who were already prominent forces in the region's commercial life, to intermediate Spain's trade (Asuero 2007, p. 170). While Jews in the Egyptian censuses do not have Sephardic names, it is possible that Spain extended its protection to local Jewish communities in the Ottoman Empire as well.

Among the countries that did introduce general incorporation statutes between 1848 and 1868—Great Britain, the Netherlands, or the United States—the take-up of legal protection did not change much. The Netherlands and the United States had very few protégés. Those under British legal protection constituted less than 10% of all protégés; the increase in British protégés between the two censuses was modest and not statistically significant. Protégés did not turn to these jurisdictions with higher demand after the introduction of novel legal reforms that the literature stressed in distinguishing legal quality.

Despite the availability of the corporation in these legal regimes, other jurisdictions attracted a consistently higher share of protégés. Most significantly, Greece accounted for 12 to 14% of legal protections, despite Greek commercial law having significant issues at the time. Incorporation required state authorization, which remained a lengthy and costly process into the 1900s. The Greek commercial code was transplanted from France but the French civil law was left out. Instead, Byzantine law was the single source of all Greek civil law. Hence, the Greek commercial code lacked fundamental provisions, even the basic definition of a company or joint ownership, and was filled with many anachronistic rules, such as archaic ceilings on interest rates, and other inconsistencies. The consequent confusion severely limited contract credibility and dependability of transactions (Pepelasis 1959, pp. 185–88; Ađır and Artunç 2021).

Finally, we observe 75 Europeans in our census samples who acquired the legal protection of a second European polity that is different from their polity of origin. Table 3 shows the distribution of the polity of protection among these “dual national” Europeans. The largest dual-national group were the Maltese ($N=34$), 32 of whom had British protection. The second largest dual-national European group were the Greeks: Coptic Christians.

Table 3: Polity Choice of Egypt's Dual-National Europeans in 1848 and 1868

Origin	Acquired the Legal Protection of:							Total	N. Origin Nationals
	Austria	Great Britain	France	Greece	Italy	Prussia	Russia		
Austria	0	0	0	0	2	0	0	2	124
France	1	5	0	1	1	0	0	8	442
Greece	2	0	3	0	9	0	6	20	443
Italy	0	0	0	2	0	0	0	2	265
Malta	2	32	0	0	0	0	0	34	34
Russia	0	0	0	1	0	1	0	2	44
USA	1	1	1	0	4	0	0	7	11
Total	6	38	4	4	16	1	6	75	

Notes: The sample is restricted to Europeans who acquired the legal protection of a second European polity, and who resided in Cairo and Alexandria in either 1848 or 1868. The table shows the distribution of the second (acquired) polity of protection for each polity of origin. The Total row shows for each polity the number of Europeans who did not originate from that polity yet acquired its protection. The Total column shows for each polity of origin the number of individuals who acquired a second protection. N. Origin Nationals is the number of individuals who originated from a given polity. Austria refers to the Austrian-Hungarian Empire.

Sources: The 1848 and 1868 population census systematic samples, and the two over-samples of non-Muslims in Cairo in 1848 and 1868.

9 Greek-Italians, 6 Greek-Russians, 3 Greek-French, and 2 Greek-Austrians. The demand for legal protection among the Maltese and the Greeks can be explained by their political situation; Malta was officially a British colony, while Ottoman Greeks benefited from a generous naturalization policy by the Greek government as well as Russian protection. But the diversity of the European dual nationals cannot be explained by the legal quality hypothesis. Even excluding the 34 Maltese-origin and the 20 Greek-origin dual nationals, we still observe 23 dual-nationals of other European origins: 5 French-British, 4 American-Italians, 2 Austrian-Italians, 2 Italian-Greeks, and other smaller groups. The fact that we observe Europeans from polities with better quality legal systems selecting into lower quality systems (e.g., Italian-Greeks, American-Italians, Austrian-Italians) suggests that there were other reasons that induced these Europeans to acquire a second European legal status.

Overall, our findings are not consistent with legal quality being the driver of the demand for extraterritoriality. The corporation was costly even in most of the European countries in question, and when the access was made more open, those polities did not

register an increase in protégés. But where the access was shut down, their protégé population picked up. Some polities continued to attract protégés despite maintaining commercial laws that arguably involved more transaction costs. At least in Egypt, between 1848 and 1868, local non-Muslims had different motives.

5.3 Legal Uncertainty

We now turn to the legal uncertainty hypothesis in explaining local non-Muslims' demand for extraterritoriality. While we do not observe the contractual relationships that local non-Muslims had with Europeans—which would have been ideal to test this hypothesis—we observe two types of networks with Europeans in which these contractual relationships are most likely to emerge: the occupational and spatial networks.

5.3.1 The Occupational and Spatial Distribution of Europeans

Table 4 shows the occupational and polity of origin composition of the European immigrant population in Cairo and Alexandria in 1848 and 1868. Two key patterns emerge. First, the majority of Europeans worked in white-collar jobs, especially those related to trade and finance, followed by artisanal jobs. The occupational distribution of Europeans remained mostly stable between 1848 and 1868, although there was a slight shift from artisanal jobs to both unskilled and white-collar jobs. Second, the polity distribution of Europeans changed between 1848 and 1868, shifting from British, Austro-Hungarians, Maltese, Russians, and Prussians (53%) in 1848 to French and Italians (58%) in 1868, with Greeks making up 24% of the European population in both years.²² Figures 3 and 4 show the spatial distribution of European immigrants in Cairo and Alexandria in 1848 and 1868. The maps suggest that Europeans became more spatially widespread in both cities between 1848 and 1868.

5.3.2 Empirical Strategy

Recall from Section 3 that the legal uncertainty hypothesis implies greater protégé take-up in networks with larger European presence, and that protégés will sort into the

²²The proportions of Swedes, Americans, and Danes, declined as well during this period.

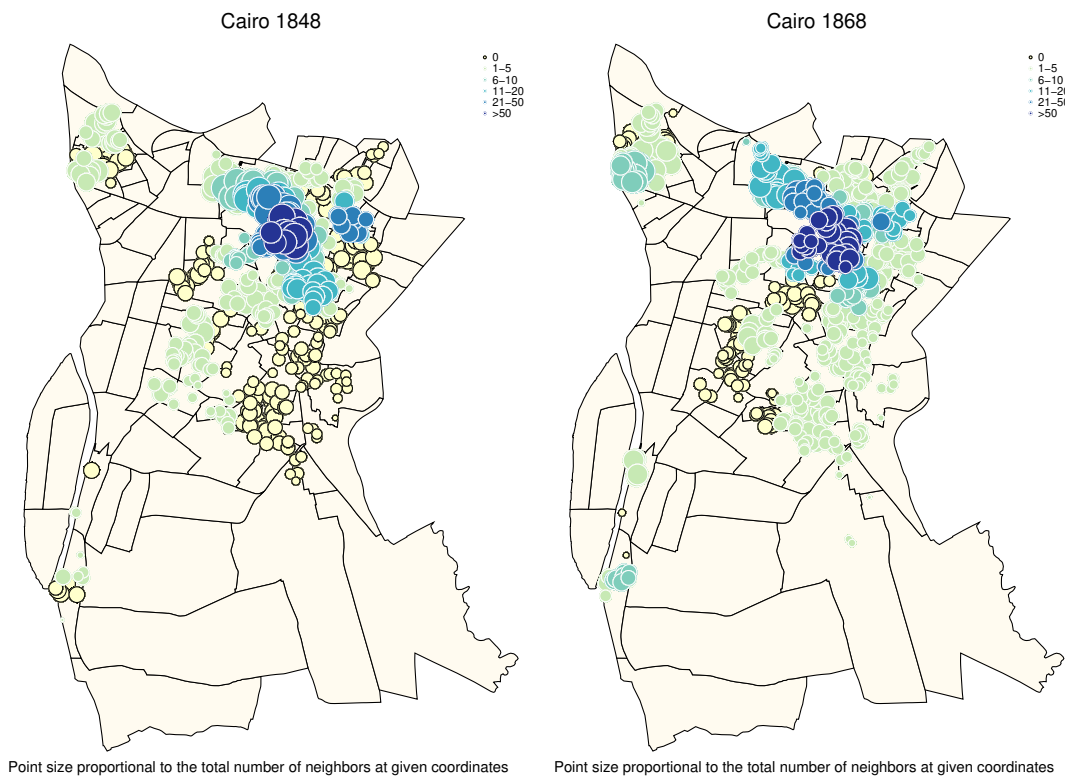


Figure 3: The Spatial Distribution of Europeans in Cairo in 1848 and 1868

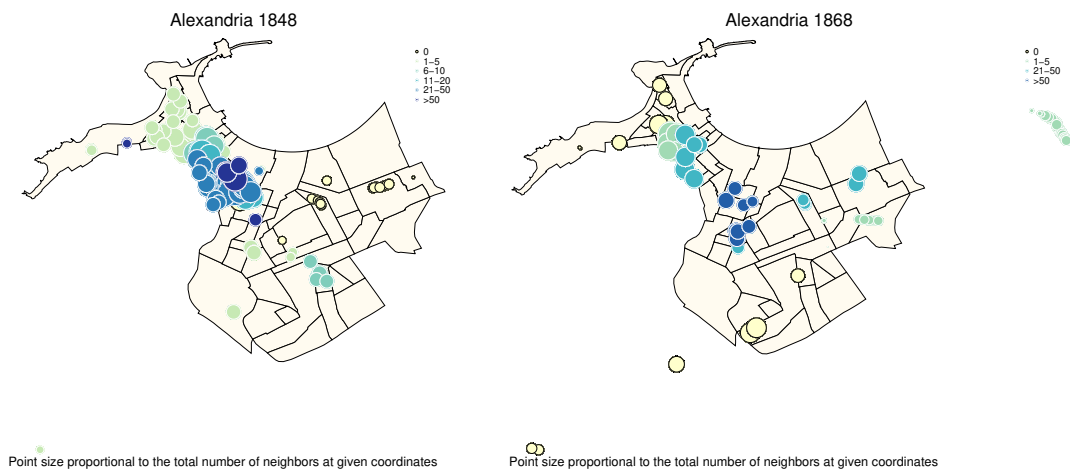


Figure 4: The Spatial Distribution of Europeans in Alexandria in 1848 and 1868

Table 4: The Occupational and Polity of Origin Composition of Egypt’s European Population in 1848 and 1868

	1848			1868			Diff
	N	Mean	SD	N	Mean	SD	
=1 if white-collar	237	0.50	0.50	231	0.53	0.50	0.033
=1 if trade or finance worker	237	0.30	0.46	231	0.30	0.46	0.009
=1 if artisan	237	0.41	0.49	231	0.32	0.47	-0.082*
=1 if unskilled worker	237	0.09	0.29	231	0.13	0.34	0.039
=1 if Austro-Hungarian Empire	532	0.12	0.33	1099	0.04	0.20	-0.082***
=1 if Belgium	532	0.00	0.05	1099	0.00	0.03	-0.002
=1 if Croatia	532	0.00	0.00	1099	0.00	0.04	0.001
=1 if Denmark	532	0.01	0.10	1099	0.00	0.02	-0.009*
=1 if Great Britain	532	0.27	0.45	1099	0.10	0.30	-0.171***
=1 if France	532	0.11	0.32	1099	0.39	0.49	0.277***
=1 if Greece	532	0.24	0.43	1099	0.24	0.43	0.001
=1 if Italy	532	0.08	0.27	1099	0.19	0.39	0.107***
=1 if Malta	532	0.07	0.25	1099	0.01	0.08	-0.063***
=1 if Prussia	532	0.02	0.14	1099	0.01	0.07	-0.014**
=1 if Russia	532	0.05	0.21	1099	0.02	0.13	-0.029***
=1 if Spain	532	0.01	0.09	1099	0.01	0.09	0.002
=1 if Sweden	532	0.01	0.11	1099	0.00	0.00	-0.012**
=1 if USA	532	0.01	0.09	1099	0.00	0.05	-0.006*

Notes: The sample is restricted to Europeans residing in Cairo and Alexandria in 1848 and 1868. The statistics are weighted by the inverse sampling probability. The sample size is smaller for the occupational distribution than for the polity of origin because of the higher frequency of missing occupational titles. Sources: The 1848 and 1868 population census systematic samples, and the two over-samples of non-Muslims in Cairo in 1848 and 1868.

European jurisdiction(s) with the strongest representation in their networks. Our objective in this section is to examine the impact of the occupational and spatial networks with Europeans on local non-Muslims’ take-up of protégé status, and on their choice of polity.

Demand for Protégé Status: OLS Specification We begin with an OLS regression of the protégé take-up among non-European non-Muslims. We investigate whether an individual was more likely to become a protégé if they worked in an occupation with a higher proportion of Europeans:

$$protege_{ickt} = \beta_1 occeuro_{ckt} + \alpha_k + \gamma_t + \varepsilon_{ickt} \quad (1)$$

where $protege_{ickt}$ is a dummy variable that takes the value of one if a local non-Muslim i in occupation c in occupation group k in census year t is a protégé of a European

polity.²³ The variable $occeuro_{ckt}$ is the proportion of Europeans in occupation c in census year t . We control for a full set of occupational group fixed effects, α_k , to account for the differences in protégé take-up between occupation groups. We are unable to include the detailed occupation fixed effects (α_c) in this regression; the occupational distribution of Europeans remained largely stable between 1848 and 1868 (Table 4) and so its impact is absorbed in the occupation fixed effects. The fixed effect, γ_t , is a dummy variable for the 1868 census to account for aggregate shocks to the protégé take-up between 1848 and 1868. Finally, ε_{ickt} is an error term. The standard errors are clustered at the occupation c level, the level of aggregation of the explanatory variable.

We also examine if local non-Muslims are more likely to become protégés if they have a higher proportion of European neighbors:

$$protege_{igt} = \beta_1 euronbrs_{igt} + \alpha_g + \gamma_t + \varepsilon_{igt} \quad (2)$$

where $protege_{igt}$ is a dummy variable that takes the value of one if a local non-Muslim i in neighborhood g in census year t is a protégé of a European polity. The explanatory variable $euronbrs_{igt}$ is the proportion of Europeans among neighbors who live within a 250-meter radius of individual i 's street address in neighborhood g in census year t . Standard errors are clustered at the neighborhood level g . Notice, however, that the explanatory variable is measured at the individual level, because the proportion of European neighbors is computed from the viewpoint of each individual's street address, and not at the neighborhood level.

We control for a full set of neighborhood fixed effects, α_g , to account for differences in protégé take-up across neighborhoods. Recall from Figures 3 and 4 that the spatial distribution of Europeans expanded between 1848 and 1868, thus enabling us to exploit the *change* in the proportion of European neighbors within the neighborhood between 1848 and 1868. In order to have a consistent definition of neighborhoods between 1848 and 1868, and in the absence of administrative maps of the two cities from the period, we define neighborhoods according to the administrative division of Cairo and

²³Occupational groups are the 1-digit HISCO major occupational groups: (1) professionals (e.g., engineers, physicians), (2) religion workers, (3) administrative and managerial workers, (4) clerical and related workers, (5) sales and trade workers, (6) service workers (e.g., servants, slaves, police, military), (7) agricultural, animal husbandry, and fishermen, (8) spinners, millers, food processors, tailors, (9) shoemakers, blacksmiths, jewellers, (10) construction workers, carpenters, laborers.

Alexandria in the 2006 population census. As a robustness check, we also construct for each of Cairo and Alexandria a grid of cells of 250 meters \times 250 meters that spans the whole city.²⁴

The legal quality and legal uncertainty hypotheses make testable implications about the sign of β_1 in both equations (1) and (2). Under the null hypothesis ($\beta_1 = 0$), the protégé take-up is uncorrelated with the distribution of Europeans across occupations or neighborhoods, which is consistent with the legal quality hypothesis. Under the alternative hypothesis ($\beta_1 > 0$), the demand for legal protection is positively correlated with the presence of Europeans, which is consistent with the legal uncertainty hypothesis.

Demand for Protégé Status: 2SLS Specification Equations (1) and (2) depend on the identification assumption that the occupational (spatial) distribution of Europeans, within occupational groups (neighborhoods), is exogenous. This assumption may be violated due to reverse causality or omitted variable bias. Europeans may be attracted to occupations or neighborhoods with a higher presence of protégés. There may also be other characteristics of occupations or neighborhoods, such as income, which are correlated with the presence of both Europeans and protégés. Following the migration literature, we address the potential endogeneity of the distribution of Europeans by using a shift-share instrumental variable. To construct this instrument, we restrict the analysis to the 1868 census, and we employ the following instrumental variable for the proportion of Europeans in each occupation or neighborhood in 1868:

$$Z_{l,1868} = \frac{1}{P_{l,1868}} \sum_j z_{lj,1848} \times g_{j,1868} \quad (3)$$

where $P_{l,1868}$ is the size of occupation or neighborhood l in 1868, $z_{lj,1848}$ is the 1848 share of Europeans of polity of origin j working in the occupation, or the share of European neighbors of polity of origin j living in the neighborhood, $g_{j,1868}$ is the number of Europeans of polity of origin j who entered Cairo and Alexandria between 1848 and 1868 excluding those in occupation or neighborhood l .²⁵ Because the 2SLS regressions are restricted to the 1868 census, we cannot include either year or occupation

²⁴We show in Appendix Figures 5 and 6 the mapping of the census data using the 2006 quarters and the grid cells for each of Cairo and Alexandria.

²⁵99.5% of Europeans who entered Egypt in 1848–1868 settled in Cairo or Alexandria.

(neighborhood) fixed effects in the 2SLS regressions.

We also use an adjusted IV ($Z_{l,1868}^{adj}$), where we exploit the impact of the Egyptian cotton boom in 1861–65 on Egypt’s cotton trade pattern with its European partners. We hypothesize that the shifts in Egypt’s cotton partners before and after the cotton boom may have altered the migration inflows from European countries.²⁶ Specifically, we replace the shift component ($g_{j,1868}$) in equation (3):

$$Z_{l,1868}^{adj} = \frac{1}{P_{l,1868}} \sum_j z_{lj,1848} \times cotton_{j,1868} \quad (4)$$

where $cotton_{j,1868}$ is equal to the (positive) shift in country j ’s relative share of Egypt’s total cotton exports before and after the cotton boom, if the country increased its share of Egyptian cotton exports, and is equal to 0 if country j reduced its share during this period.²⁷ Three European countries registered an increase in their relative shares of Egypt’s cotton exports during this period: Great Britain witnessed a substantial increase of 40 percentage points, Italy by 8 percentage points, and France by 3 percentage points. The shares of all other countries declined and are thus assigned zeros.

The shift-share instrument exploits two sources of variation: (1) the variation across occupations or neighborhoods in their initial (1848) shares of European polities of origin, and (2) the Egypt-level national shift in the number of Europeans from each European polity of origin between 1848 and 1868. As explained by [Goldsmith-Pinkham et al. \(2020\)](#) and [Jaeger et al. \(2018\)](#) the validity of this instrument rests upon the exogeneity of the occupational or spatial distribution of Europeans from each polity of origin in 1848. We evaluate the validity of the shift-share IV in equation (3) following the procedures suggested by [Goldsmith-Pinkham et al. \(2020\)](#). First, we show in Appendix Tables 9 and 12 the Rotemberg weights of the European countries in terms of their contribution to the variation of the IV. These weights decompose the shift-share IV into a weighted sum of the just-identified instrumental variable estimators that use each country’s share in 1848 as a separate instrument. The results show that the

²⁶This is somewhat similar to [Tabellini \(2020\)](#)’s shift-share IV adjustment strategy that replaces the national growth of European immigration into the United States in 1900–30 by the predicted migration inflows due to both World War I and the imposition of the U.S. migration quotas in 1924.

²⁷We obtain similar results if we employ instead the shift in each country’s relative share of Egypt’s total trade, or of the total number of vessels departing from the port of Alexandria. We collected these statistics from [U.K. Parliamentary Papers, Vol. 53 \(1849, pp. 359-367\)](#) for 1842–1843 and [U.S. House of Representatives \(1877, p. 905\)](#) for 1876.

Rotemberg weights are almost perfectly correlated with the national migration inflows between 1848 and 1868, in the occupational networks analysis, and 85% correlated in the spatial networks analysis. Furthermore, the variation in our IV is mainly driven by France (88%) and Italy (12%) in the occupational networks analysis, and by Italy (70%), Greece (18%), France (9%), and Spain (2%) in the spatial networks analysis. Second, Appendix Tables 10 and 13 report the correlation between each of the initial shares of the top Rotemberg weights countries, and the characteristics of occupations or neighborhoods in 1848, finding mostly no statistically significant correlation. Third, Appendix Tables 11 and 14 show alternative IV estimates, finding that the IV estimates are robust across different estimation methods.

Protégés' Choice of Polity Finally, we investigate the effect of the occupational and spatial networks on the choice of polity among protégés using a multinomial logistic regression. The outcome variable is a categorical variable for the following polities: Austria, Great Britain, France, Greece, Italy, Russia, Spain, and other countries (base outcome). The vector of explanatory variables includes the proportions of Austrian, British, French, Greek, Italian, Russian, and Spanish immigrants within the person's occupation in the case of the occupational networks, or among the person's neighbors (within a 250-meter radius) in the case of the spatial networks.

5.3.3 Findings

Demand for Protégé Status Table 5 reports the OLS and 2SLS estimates of the effect of the occupational and spatial networks with Europeans on the protégé take-up. Panel (5a) reveals that occupational networks played a role in the demand for extraterritoriality; local non-Muslims are more likely to become protégés the higher the proportion of Europeans in their occupation. According to the OLS estimate for the full sample of local non-Muslims in column (1), a one standard deviation increase in the proportion of Europeans in the occupation ($=0.05$) is associated with a 43% rise in the baseline probability of becoming a protégé ($=3\%$). The shift-share IV estimate in column (2), and the adjusted IV estimate in column (3), both reveal an even larger effect: a one standard deviation rise in the proportion of Europeans doubles the baseline probability

of becoming a protégé. The larger 2SLS coefficients (recall that these are estimated for 1868 only) are partially driven by the stronger correlation between the occupational networks with Europeans and the protégé take-up in 1868, in comparison to 1848. Restricting the sample to non-Coptic Christians and Jews in columns (4)–(6) results in similar but noisier estimates.

Panel (5b) shows that non-Muslims were more likely to become protégés when the proportion of Europeans among their neighbors increased. The OLS estimate in column (1) reveals that an increase in the proportion of European neighbors by one standard deviation ($=0.03$) is associated with a 51% increase in the baseline probability of becoming a protégé ($=0.07$). Both the shift-share IV in column (2) and the adjusted IV in column (3) show a stronger effect: a one standard deviation rise in the proportion of European neighbors is associated with a 75% increase in the protégé take-up likelihood. Restricting the sample to Jews and non-Coptic Christians results in similar yet noisy estimates, because of the high concentration of these two groups in a relatively small number of neighborhoods in Cairo and Alexandria. We also obtain qualitatively similar results when we use the grid cells, instead of the 2006 census administrative division, as a robustness check (Appendix Table 7).

Protégés’ Choice of Polity We now test the second implication of the legal uncertainty hypothesis regarding the protégés’ polity choice. Appendix Table 8 reports the multinomial logistic regression results of the protégés’ choice of polity on the proportion of Europeans in the occupation, among six major European polities with a significant number of protégés: Austria, Great Britain, France, Greece, Italy, and Spain. However, we fail to detect any meaningful correlation due to the small sample size which yields mostly noisy estimates. We observe only 92 protégés with non-missing occupational title, leading to extremely few observations in each polity choice and occupation cell.

Table 6 shows the multinomial logistic regression results of the protégés’ choice of polity on the proportion of European neighbors from the same six major European polities with a significant number of protégés: Austria, Great Britain, France, Greece, Italy, and Spain. Overall, the results reveal that protégés were more likely to choose the protection of a European polity—at least in the case of Austria, Great Britain, and

Table 5: The Effect of the Occupational and Spatial Networks with Europeans on the Demand for Legal Protection

(a) Occupational Networks

	All Non-Muslims			Non-Coptic Christians & Jews		
	(1) OLS	(2) 2SLS	(3) Adj. 2SLS	(4) OLS	(5) 2SLS	(6) Adj. 2SLS
Prop. Europeans in occupation	0.26 (0.15)*	0.89 (0.32)***	0.81 (0.30)***	0.18 (0.22)	0.88 (0.28)***	0.83 (0.26)***
Occupation Group FE?	Yes	Yes	Yes	Yes	Yes	Yes
Year FE?	Yes	No	No	Yes	No	No
Obs (individuals)	3656	2066	2066	1560	908	908
Clusters (Occupations)	145	115	115	109	84	84
R^2	0.02	0.03	0.03	0.03	0.10	0.10
Mean dep. var.	0.03	0.03	0.03	0.03	0.03	0.03
KP Wald F -stat	.	18.51	16.35	.	17.58	15.69

(b) Spatial Networks

	All Non-Muslims			Non-Coptic Christians & Jews		
	(1) OLS	(2) 2SLS	(3) Adj. 2SLS	(4) OLS	(5) 2SLS	(6) Adj. 2SLS
Prop. European neighbors	1.18 (0.53)**	1.76 (0.94)*	0.97 (0.45)**	1.54 (0.86)*	1.29 (1.47)	0.64 (0.57)
Year FE?	Yes	No	No	Yes	No	No
2006 quarter FE?	Yes	No	No	Yes	No	No
Obs (individuals)	4404	2532	2532	1963	1140	1140
Clusters (2006 quarters)	100	79	79	81	63	63
R^2	0.09	0.00	0.02	0.07	-0.01	-0.00
Mean dep. var.	0.07	0.07	0.07	0.07	0.07	0.07
KP Wald F -stat	.	6.07	8.86	.	2.12	11.78

Notes: The dependent variable is a dummy variable that is equal to 1 if the individual is a protégé of a European consulate. Standard errors clustered at the occupation level in Panel (a), and at the 2006 census quarter level in Panel (b), are in parentheses. The regressions are weighted by the inverse sampling probability of individuals. The 2SLS regressions in columns (2) and (4) are based on the shift-share instrument that is defined in equation (3). The adjusted 2SLS regressions in columns (3) and (6) are based on the adjusted instrument defined in equation (4). The 2SLS and adjusted 2SLS regressions are conducted for 1868 only. The sample is restricted to the adult (≥ 15) male local (non-European) non-Muslim population of Cairo and Alexandria with non-missing religious affiliation. It is further restricted to those with non-missing occupational title in Panel (a) and to those with non-missing coordinates in Panel (b). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Sources: The 1848 and 1868 population census systematic samples, and the two over-samples of non-Muslims in Cairo in 1848 and 1868.

France—the higher the proportion of its nationals among the protégé’s neighbors. We interpret these results as suggestive evidence in support of the legal uncertainty hypothesis: conditional on the protégé status, protégés sorted into the same European jurisdiction as their European neighbors.

Table 6: The Relationship between the Spatial Networks with Europeans and the Protégés’ Choice of Polity

	Austria	England	France	Greece	Italy	Spain
Prop. Austro-Hungarian	11.26 (6.11)*	20.34 (6.37)***	10.56 (6.35)*	11.83 (5.10)**	5.32 (5.86)	13.27 (5.31)**
Prop. English	2.60 (3.73)	13.69 (4.52)***	10.86 (4.00)***	4.62 (3.77)	3.83 (4.86)	9.25 (3.61)**
Prop. French	-4.02 (5.64)	11.85 (7.13)*	12.74 (5.10)**	2.05 (5.53)	-1.81 (4.36)	7.86 (6.17)
Prop. Greek	-3.30 (3.44)	8.67 (4.25)**	8.16 (3.06)***	2.78 (2.76)	2.36 (2.34)	7.78 (2.87)***
Prop. Italian	1.19 (3.34)	1.52 (3.86)	8.33 (2.96)***	2.24 (3.34)	3.54 (3.54)	9.45 (3.01)***
Prop. Spanish	21.89 (32.69)	101.24 (50.10)**	51.40 (37.45)	17.60 (28.20)	55.80 (39.65)	49.43 (39.53)
Observations	288					

Notes: The table reports the marginal effects on the probability of choosing a certain polity relative to the base polity, using a multinomial logistic regression. The dependent variable is a categorical variable indicating the choice of polity: Austria, Great Britain, France, Greece, Italy, Russia, Spain, and other (base outcome). Standard errors are clustered at the grid cell level. The regressions are weighted by the inverse sampling probability of individuals. The sample is restricted to protégés in Cairo and Alexandria with non-missing religious affiliation and coordinates. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Sources: The 1848 and 1868 population census systematic samples, and the two over-samples of non-Muslims in Cairo in 1848 and 1868.

5.3.4 Discussion

Overall, the results suggest that the occupational and spatial networks with European immigrants were important drivers of the demand for legal protection. Local non-Muslims were more likely to acquire the protégé status if Europeans made up a higher proportion of their occupational and spatial networks. The stronger European presence in these networks implies a higher likelihood of establishing contractual relationships with Europeans. We thus interpret these results as consistent with the first implication of the legal uncertainty hypothesis. Local non-Muslims demanded the legal protection of a European polity to mitigate the uncertainty about which law would apply to their

contracts with Europeans. We also find suggestive evidence supporting the second implication of the legal uncertainty hypothesis: Conditional on becoming a protégé, the choice of European jurisdiction seems to be positively correlated with the nationality composition of the protégé’s European neighbors. Our findings are noisy, however, in the case of the occupational networks, due to the small sample size of protégés with non-missing occupational titles.

Although we cannot rule out that the regression results may be driven by information dissemination or referrals—that Europeans shared information about the possibility of earning legal protection from European consulates with the local non-Muslims in their occupational and spatial networks—the qualitative historical evidence supports the view that local non-Muslims became protégés, and chose jurisdictions, so that they could safely contract with Europeans. Contemporary reporting and scholarship found that locals were not willing to enter into contractual arrangement with Europeans, whether partnerships, debt contracts, mortgages, or even bills of exchange, due to the “absolute judicial chaos” that consular jurisdictions generated (Hoyle 1991, p. 7; Demetriades 1891b, p. 255; M’Coan 1873, pp. 22–28). These contractual arrangements were more likely to arise within the spatial and occupational networks.

While the previous results are consistent with the legal uncertainty hypothesis, there are other plausible explanations of non-Muslims’ demand for legal protection, and why protégés opted for the jurisdiction that they acquired. One might argue that non-Muslims became protégés because they were persecuted, and hence they sought the legal protection of a European foreign mission in order to avoid or mitigate such persecution. The Western powers may have also been sympathetic to local non-Muslims, granting them legal protection, or even adopting an outright religion-based naturalization policy. Persecutions of local non-Muslims may have been initiated by the Ottoman Egyptian state itself (i.e. Muhammad Ali’s dynasty), or by the (Muslim) mob whose violence, the argument goes, was sponsored, or at least tolerated, by the Ottoman Egyptian state. One can further hypothesize that persecution may have targeted Jews and non-Coptic Christians more than Copts, thus explaining the inter-religious differences in the demand for legal protection. Alternatively, persecution may have targeted white-

collar workers or those in trade and finance occupations.

The historical evidence suggests that state persecution was not widespread under Muhammad Ali's dynasty, and so it cannot explain the demand for legal protection among local non-Muslims. Ottoman Egyptian viceroys during this period were generally portrayed by contemporary European observers and consuls as enlightened rulers who pursued relatively egalitarian policies toward Egypt's non-Muslim minorities (Tagher 1951, pp. 195–223). Sa'id Pasha (1854–63) abolished the poll tax on non-Muslims that had been enforced since the Arab conquest of Egypt in 641 CE. He also allowed non-Muslims to serve in the army first as conscripted soldiers and later as officers in 1856, for the first time since the Arab conquest.²⁸ While non-Muslim children were not allowed to enroll in public modern schools (started in 1816), Ismail (1863–79) removed this ban in 1873. Prior to 1873, non-Muslim children were more likely than Muslims to enroll in any (religious) school, and as early as 1868, in modern private (European and local) schools.

But even if the state persecution of non-Muslims was not widespread, mob persecution remains a possibility. The most well-known episode of mob violence against Egyptian non-Muslims targeted the Copts in the aftermath of the French occupation of Egypt in 1798–1801 on the grounds of accusation of collaboration with the invading French army. However, as far as the historical evidence goes, this episode did not disproportionately target Jews or non-Coptic Christians. If anything, it was more directed against Copts. Furthermore, mob violence against non-Muslims subsided during our period of study.

A second explanation of the protégé take-up among local non-Muslims is that the protégé status offered protection from the state expropriation of a person's immovable assets. Our census data suggest, however, that the demand for legal protection did not come from wealthy rich non-Muslims, but mostly from the non-Muslim urban middle class who had less immovable wealth. Recall from Table 1 that protégés do not differ in their dwelling characteristics from non-protégé non-Muslims. They were less likely

²⁸Prior to this, non-Muslims were only allowed to serve in the army in service occupations that did not involve carrying arms (e.g., carpenters, sailors). We observe two Coptic military officers in the 1868 census.

to live in Waqf-owned or state-owned housing, suggesting that they were richer on average. However, they were less likely to own slaves or to recruit servants, which indicates that they likely belonged to an upper middle class, with less of immovable wealth.

6 Conclusion

Capitulations were originally granted to promote trade and attract European investment to the Ottoman Empire. These concessions granted extraterritorial privileges to European residents, allowing them to contract and be sued under their consular courts. But the proliferation of consular courts, with overlapping jurisdictions, caused considerable uncertainty about which law would apply and in which court a case would be heard. Legal pluralism posed significant problems by raising transaction costs in the contractual environment and was only effectively resolved with a comprehensive reform: the creation of the Mixed Courts in 1875. Before the Mixed Courts, Egypt's non-Muslim minorities became protégés of European polities to reduce this uncertainty as contracting with the expanding European population in certain occupations had become inevitable. Until then, for local non-Muslims, the next best option was to place themselves under European jurisdictions. This allowed them to more credibly contract with nationals and other protégés of that polity. Occupational and spatial networks were critical determinants of how legal protection expanded. As Europeans became more prominent in an occupation or neighborhood, more local non-Muslims sought to become protégés, sorting into the jurisdiction that had stronger presence in these networks.

Our findings do not support the view that non-Muslims minorities switched jurisdictions because European laws were more efficient than local laws. During our period of study, significant differences between laws had emerged. But these differences did not inform the protégés' choice of law at the time. If anything, protégés ended up more prominently in jurisdictions in which legal rules were ostensibly less well suited for business; the demand for more innovative or advanced jurisdictions decreased over time. Our econometric evidence clarifies this puzzling sorting by stressing the problems

associated with legal uncertainty. There might well be a hierarchy of legal systems in terms of economic efficiency and certain European laws might be more conducive to effective business organization than the local laws at the time. But the revealed preferences of protégés show that this was not a dimension that individuals prioritized. Raising credibility of the contractual environment remained a more important concern.

Tracing the origins of Egypt's non-Muslim economic elite during the first half of the twentieth century is a promising area of future research. As we outlined in the introduction, this business elite consisted of (descendants of) both immigrants and natives, both protégés and non-protégés. More generally, we should re-evaluate the traditional depiction of the Middle East's non-Muslim minorities, in the broader economic history scholarship, as mostly merchants and financiers who formed an urban haute bourgeoisie and were overwhelmingly protégés of European consulates. Egypt's non-Muslims were in fact a very heterogeneous population, mostly rural Copts, over-represented among mid-low bureaucrats and artisans, with a minority of Jewish and non-Coptic Christian financiers and traders, and a minority of protégés.

References

- Acemoglu, D., Cantoni, D., Johnson, S., and Robinson, J. A. (2011). The Consequences of Radical Reform: The French Revolution. *American Economic Review*, 101(7):3286–3307.
- Acemoglu, D. and Johnson, S. (2001). The colonial origins of comparative development: An empirical investigation. *American Economic Review*, 91(5):1369–1401.
- Ahmad, F. (2000). Ottoman perceptions of the capitulations 1800–1914. *Journal of Islamic Studies*, 11(1):1–20.
- Anghie, A. (2007). *Imperialism, sovereignty and the making of international law*, volume 37. Cambridge University Press.
- Arminjon, P. (1903). *Étrangers et protégés dans l'Empire ottoman*, volume 1. A. Chevalier-Maresq & cie.
- Artunç, C. (2014). *Barrators, Berats, and Bandits: Economic Implications of Legal Rules in the Ottoman Empire and Egypt, 1600-1921*. PhD thesis, Yale University.

- Artunç, C. (2015). The price of legal institutions: the *Berathlı* merchants in the eighteenth-century Ottoman Empire. *Journal of Economic History*, 75(03):720–749.
- Asuero, P. M. (2007). The spanish consulate in istanbul and the protection of the sephardim (1804–1913). *Quaderns de la Mediterrània*, 88:169–178.
- Ağır, S. and Artunç, C. (2021). Set and Forget? The Evolution of Business Law in the Ottoman Empire and Turkey. *Business History Review*.
- Berkowitz, D., Pistor, K., and Richard, J.-F. (2003). Economic development, legality, and the transplant effect. *European Economic Review*, pages 165–195.
- Bogart, D., Drelichman, M., Gelderblom, O., and Rosenthal, J.-L. (2010). State and private institutions. In Broadberry, S. and O'Rourke, K. H., editors, *The Cambridge Economic History of Modern Europe: Volume 1, 1700–1870*, pages 70–95. Cambridge University Press, Cambridge.
- Cansunar, A. and Kuran, T. (2019). Economic harbingers of political modernization: Peaceful explosion of rights in ottoman istanbul. ERID Working Paper Number 288.
- Cassel, P. K. (2011). *Grounds of Judgment: Extraterritoriality and Imperial Power in Nineteenth-Century China and Japan*. Oxford University Press.
- Courbage, Y., Fargues, P., and Mabro, J. (1997). *Christians and Jews under Islam*. Tauris London.
- Demetriades, D. (1891a). Administration of justice in the levant I. *Jurid. Rev.*, 3:145.
- Demetriades, D. (1891b). Administration of justice in the levant II. *Jurid. Rev.*, 3:245.
- Eldem, E. (1999). *French trade in Istanbul in the eighteenth century*, volume 19. Brill.
- Goldsmith-Pinkham, P., Sorkin, I., and Swift, H. (2020). Bartik Instruments: What, When, Why, and How. *American Economic Review*, 110(8):2586–2624.
- Graff, M. (2008). Law and finance: Common law and civil law countries compared—an empirical critique. *Economica*, 75(297):60–83.
- Guinnane, T. W., Harris, R., Lamoreaux, N. R., and Rosenthal, J.-L. (2007). Putting the Corporation in its Place. *Enterprise and Society*, 8(3):687–729.
- Hanley, W. (2016). What ottoman nationality was and was not. *Journal of the Ottoman and Turkish Studies Association*, 3(2):277–298.
- Hoyle, M. (1991). *Mixed Courts of Egypt*. Brill.

- Issawi, C. P. (1981). *The Arab World's Legacy*. Darwin Press.
- Jaeger, D. A., Ruist, J., and Stuhler, J. (2018). Shift-Share Instruments and the Impact of Immigration. Technical report, National Bureau of Economic Research.
- Kayaoğlu, T. and Kayaoğlu, T. (2010). *Legal imperialism: Sovereignty and extraterritoriality in Japan, the Ottoman Empire, and China*. Cambridge University Press.
- Klerman, D. and Mahoney, P. G. (2007). Legal origin? *Journal of Comparative Economics*, 35(2):278–293.
- Kuran, T. (2011). *The long divergence: How Islamic law held back the Middle East*. Princeton University Press, Princeton.
- Kuran, T. and Lustig, S. (2012). Judicial biases in ottoman istanbul: Islamic justice and its compatibility with modern economic life. *Journal of Law and Economics*, 55(3):631–666.
- Kuran, T. and Rubin, J. (2018). The financial power of the powerless: socio-economic status and interest rates under partial rule of law. *Economic Journal*, 128(609):758–796.
- La Porta, R., Lopez-de Silanes, F., and Shleifer, A. (2008). The economic consequences of legal origins. *Journal of Economic Literature*, 46(2):285–332.
- La Porta, R., Lopez-de Silanes, F., Shleifer, A., and Vishny, R. W. (1997). Legal determinants of external finance. *The journal of finance*, 52(3):1131–1150.
- La Porta, R., Lopez-De-Silanes, F., Shleifer, A., and Vishny, R. W. (1998). Law and Finance. *Journal of Political Economy*, 106(6).
- Lévêque, C. and Saleh, M. (2018). Does Industrialization affect Segregation? Evidence from Nineteenth-Century Cairo. *Explorations in Economic History*, 67:40–61.
- Martínez-Rodríguez, S. (2018). A history of the corporation in Spain in the twentieth century: towards Europe. In Wells, H., editor, *Research handbook on the history of corporate and company law*, pages 299–321. Edward Elgar Publishing, Cheltenham.
- Masters, B. (1992). The sultan's entrepreneurs: The *Avrupa Tüccarıs* and the *Hayriye Tüccarıs* in Syria. *International Journal of Middle East Studies*, 24(4):579–597.
- M'Coan, J. C. (1873). *Consular jurisdiction in Turkey and Egypt*. William Ridgway.
- Mubarak, A. (1887). *al-Khitat al-Tawfiqiya al-Jadida li Misr al-Qahira wa Muduniha*

- wa Biladiha al-Qadima wal Shahira (The New Tewfiqi Plans for Egypt, Its Cities, and Its Old and Famous Villages)*. Cairo: Bulaq Printing House.
- Musacchio, A. and Turner, J. D. (2013). Does the law and finance hypothesis pass the test of history? *Business History*, 55(4):524–542.
- Owen, T. C. (1991). *The Corporation under Russian Law*. Cambridge University Press.
- Panzac, D. (1992). International and domestic maritime trade in the ottoman empire during the 18th century. *International Journal of Middle East Studies*, 24(2):189–206.
- Pepelasis, A. A. (1959). The legal system and economic development of greece. *Journal of Economic History*, 19(2):173–198.
- Rey, F. (1899). *La protection diplomatique et consulaire dans les échelles du Levant et de Barbarie*. L. Larose.
- Rochat, J. (2018). Change for continuity: the making of the *société anonyme* in nineteenth century france. In Wells, H., editor, *Research handbook on the history of corporate and company law*, pages 244–68. Edward Elgar Publishing, Cheltenham.
- Saleh, M. (2013). A Pre-Colonial Population Brought to Light: Digitization of the Nineteenth-Century Egyptian Censuses. *Historical Methods: A Journal of Quantitative and Interdisciplinary History*, 46(1):5–18.
- Saleh, M. (2015). The Reluctant Transformation: State Industrialization, Religion, and Human Capital in Nineteenth-Century Egypt. *The Journal of Economic History*, pages 65–94.
- Saleh, M. (2016). Public Mass Modern Education, Religion, and Human Capital in Twentieth-Century Egypt. *Journal of Economic History*, 76(3):697–735.
- Saleh, M. (2018). On the Road to Heaven: Taxation, Conversions, and the Coptic-Muslim Socioeconomic Gap in Medieval Egypt. *Journal of Economic History*, 78(2):394–434.
- Tabellini, M. (2020). Gifts of the Immigrants, Woes of the Natives: Lessons from the Age of Mass Migration. *The Review of Economic Studies*, 87(1):454–486.
- Tagher, J. (1998 [1951]). *Christians in Muslim Egypt: A Historical Study of the Relations between Copts and Muslims from 640 to 1922*. Oros Verlage, Altenberge.

- Tignor, R. L. (1980). The economic activities of foreigners in Egypt, 1920–1950: from millet to haute bourgeoisie. *Comparative Studies in Society and History*, 22(3):416–449.
- U.K. Parliamentary Papers, Vol. 53 (1849). *Tables of the Revenue, Population, Commerce, &c. of the United Kingdom and Its Dependencies: Supplement to Part XIV, Statements Relating to Foreign Countries*. W. Clowes and Sons, London.
- U.S. House of Representatives (1877). *Report upon the Commercial Relations of the United States with Foreign Countries for the Year 1876, 44th Congress, 2nd Session*. Government Printing Office, Washington, D.C.

7 Appendix

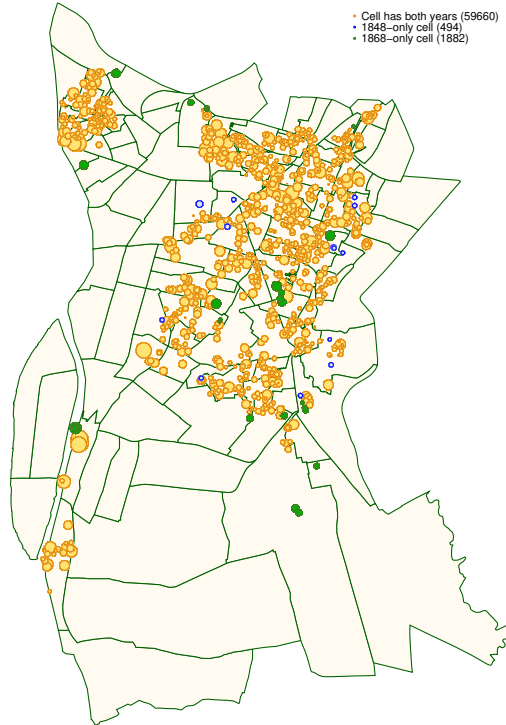
Table 7: The Effect of the Spatial Networks with Europeans on the Demand for Legal Protection: Robustness Check Using the Grid Cells

	All Non-Muslims			Non-Coptic Christians & Jews		
	(1) OLS	(2) 2SLS	(3) Adj. 2SLS	(4) OLS	(5) 2SLS	(6) Adj. 2SLS
Prop. European neighbors	1.55 (0.63)**	1.38 (0.93)	0.52 (0.64)	2.00 (1.07)*	0.58 (1.76)	0.02 (1.01)
Year FE?	Yes	No	No	Yes	No	No
Grid cell FE?	Yes	No	No	Yes	No	No
Obs (individuals)	4422	2537	2537	1970	1140	1140
Clusters (Grid cells)	120	89	89	89	66	66
R^2	0.10	0.01	0.01	0.08	0.00	0.00
Mean dep. var.	0.07	0.07	0.07	0.07	0.07	0.07
KP Wald F -stat	.	13.61	14.16	.	2.10	7.89

Notes: The dependent variable is a dummy variable that is equal to 1 if the individual is a protégé of a European consulate. Standard errors clustered at the grid cell level are in parentheses. The regressions are weighted by the inverse sampling probability of individuals. The 2SLS regressions in columns (2) and (4) are based on the shift-share instrument that is defined in equation (3). The adjusted 2SLS regressions in columns (3) and (6) are based on the adjusted instrument defined in equation (4). The 2SLS and adjusted 2SLS regressions are conducted for 1868 only. The sample is restricted to the adult (≥ 15) male local (non-European) non-Muslim population of Cairo and Alexandria with non-missing religious affiliation and coordinates. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Sources: The 1848 and 1868 population census systematic samples, and the two over-samples of non-Muslims in Cairo in 1848 and 1868.

2006 Quarters Cairo



2006 Quarters Alexandria

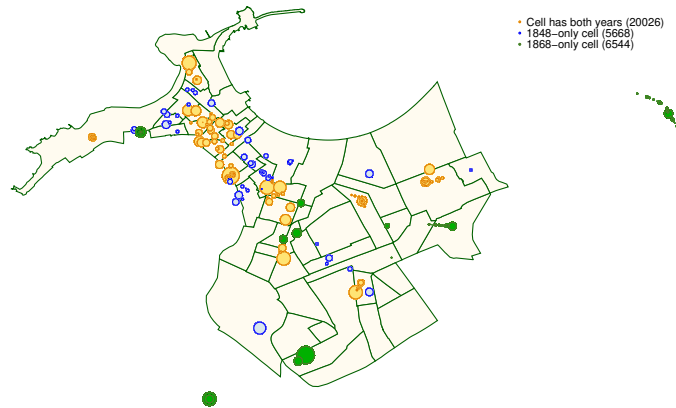
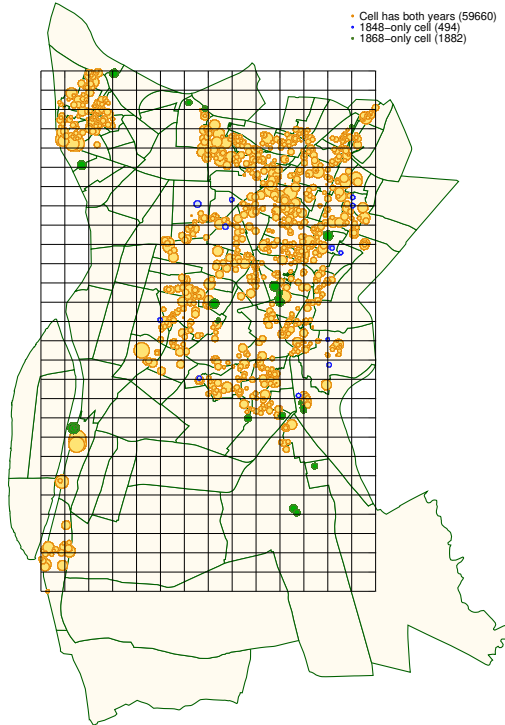


Figure 5: Mapping Cairo and Alexandria in 1848 and 1868 Using the 2006 Population Census Administrative Division

Grid Cells Cairo



Grid Cells Alexandria

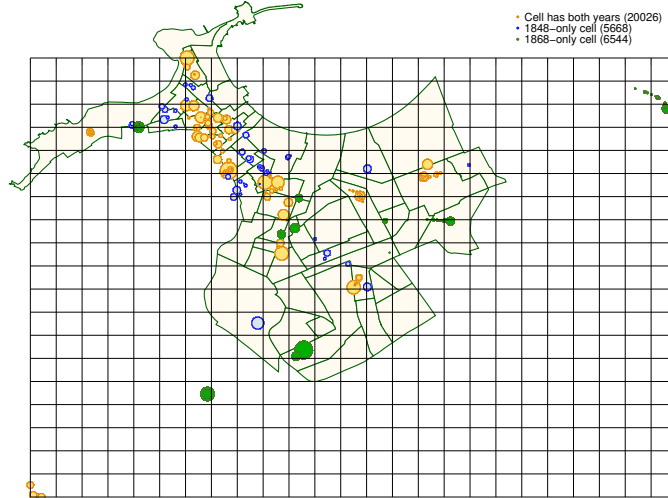


Figure 6: Mapping Cairo and Alexandria in 1848 and 1868 Using the Grid Cells

Table 8: The Relationship between the Occupational Networks with Europeans and Protégés' Polity Choice

	Austria	England	France	Greece	Italy	Spain
Prop. Austro-Hungarian	-16.25 (14.58)	-40.01 (24.48)	-29.00 (17.41)*	-5.46 (6.08)	-1.40 (3.57)	-24.73 (41.02)
Prop. English	7.01 (3.56)**	0.88 (7.54)	3.27 (2.76)	5.14 (14.07)	6.15 (4.66)	14.85 (3.62)**
Prop. French	0.52 (1.98)	3.74 (2.04)*	2.60 (2.47)	-0.27 (2.15)	2.50 (2.05)	6.76 (4.28)
Prop. Greek	-2.86 (1.79)	-0.23 (3.07)	-1.15 (1.31)	-0.60 (1.37)	-1.43 (1.56)	0.14 (4.15)
Prop. Italian	-4.82 (2.26)**	-1.89 (3.76)	-1.24 (1.94)	-8.40 (8.86)	-0.27 (2.99)	2.88 (3.32)
Prop. Spanish	-4.45 (1.67)**	0.10 (1.65)	-3.38 (1.78)*	-101.22 (8.43)**	-94.84 (8.98)**	1.94 (3.25)
Observations	92					

Notes: The table reports the marginal effects on the probability of choosing a given polity relative to the base polity, using a multinomial logistic regression. The dependent variable is a categorical variable indicating the choice of polity: Austria, Great Britain, France, Greece, Italy, Russia, Spain, and other (base polity). Standard errors are clustered at the occupation level. The regressions are weighted by the inverse sampling probability of individuals. The sample is restricted to protégés in Cairo and Alexandria with non-missing religious affiliation and occupational title. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Sources: The 1848 and 1868 population census systematic samples, and the two over-samples of non-Muslims in Cairo in 1848 and 1868.

Table 9: Occupational Networks Shift-Share IV: Summary of Rotemberg Weights

Panel A: Correlations					
	α_k	g_k	β_k	F_k	$\text{Var}(z_k)$
α_k	1				
g_k	1.000	1			
β_k	-0.398	-0.406	1		
F_k	-0.326	-0.321	0.028	1	
$\text{Var}(z_k)$	-0.099	-0.108	0.702	-0.691	1
Panel B: Top 2 Rotemberg Weight Countries					
	$\hat{\alpha}_k$	g_k	$\hat{\beta}_k$	F_k	
France	0.875	85.000	0.077	4.620	
Italy	0.119	13.000	-0.916	1.249	

Notes: This table replicates Table 4 in [Goldsmith-Pinkham et al. \(2020\)](#). Panel A reports the correlations between the Rotemberg weight of European polity k ($\hat{\alpha}_k$), the number of immigrants in the occupational networks sample who arrived in Cairo and Alexandria from polity k between 1848 and 1868 (g_k), the just-identified 2SLS coefficient estimate ($\hat{\beta}_k$), the first-stage F -statistic (F_k), and the variation in the origin country share across occupations in 1848 ($\text{var}(z_k)$). Panel B reports the top two origin European countries according to the Rotemberg weights. All other origin countries have (almost) zero Rotemberg weights.

Sources: The 1848 and 1868 population census systematic samples, and the two over-samples of non-Muslims in Cairo in 1848 and 1868. The sample is restricted to the adult (≥ 15) male non-European non-Muslim population of Cairo and Alexandria with non-missing religious affiliation and occupation.

Table 10: Occupational Networks Shift-Share IV: Relationship between European Country Shares and Characteristics of Workers in 1848

	(1) France	(2) Italy
Prop. low-status dwellings	-0.00 (0.01)	-0.00 (0.01)
Prop. non-privately owned dwellings	-0.01 (0.00)	-0.01 (0.01)
Prop. local immigrants	-0.00 (0.00)	0.00 (0.01)
Prop. having servants or slaves	0.00 (0.01)	0.01 (0.02)
Prop. foreigners	-0.00 (0.01)	-0.01 (0.01)
Prop. non-Coptic Christians	0.01 (0.01)*	0.00 (0.01)
Prop. Jews	-0.01 (0.01)	-0.01 (0.01)
Obs (occupations)	94	94
R^2	0.03	0.03
Mean dep. var.	0.01	0.01

Notes: This table replicates Table 5 in [Goldsmith-Pinkham et al. \(2020\)](#). Each column reports the results of a single occupation-level regression of an 1848 European country share on characteristics of workers in the occupation in 1848. Robust standard errors are in parentheses.

Sources: The 1848 and 1868 population census systematic samples, and the two over-samples of non-Muslims in Cairo in 1848 and 1868. The sample is restricted to the adult (≥ 15) male non-European non-Muslim population of Cairo and Alexandria with non-missing religious affiliation and occupation.

Table 11: Occupational Networks Shift-Share IV: Alternative IV Estimates

	No Controls (1)	With Controls (2)	Coefficients Equal (3)	Over ID Test (4)
OLS	0.26 (0.15)	0.19 (0.13)	[0.33]	
Bartik	0.89 (0.32)	0.81 (0.34)	[0.17]	
2SLS	1.06 (1.06)	0.37 (0.70)	[0.15]	8.97 [0.62]
MBTSLS	1.06 (1.07)	0.37 (0.71)	[0.15]	8.94 [0.63]
LIML	1.57 (1.97)	0.32 (1.28)	[0.10]	7.47 [0.76]
HFUL	1.56 (1.95)	0.32 (1.27)	[0.10]	7.49 [0.76]

Notes: This table replicates Table 6 in [Goldsmith-Pinkham et al. \(2020\)](#). It reports various estimates of the individual-level regression of the protégé take-up among local non-Muslims on the presence of Europeans in the occupation. The OLS and Bartik rows replicate columns (1) and (2) in Table 5a. Column (1) does not contain controls, while column (2) does. Controls are dummy variables at the individual level: =1 if lives in a low-status dwelling (e.g., yard, shack, cemetery), =1 if lives in a non-privately owned dwelling (i.e. Waqf or state-owned), =1 if born outside city, =1 if has a servant or a slave, =1 if foreigner, =1 if non-Coptic Christian, and =1 if Jew. The 2SLS row is the overidentified 2SLS regression that uses each origin country share separately as instruments. The MBTSLS row uses the Modified Bias-corrected estimator with the same set of instruments. The LIML row is the Limited Information Maximum Likelihood estimator with the same set of instruments. The HFUL row is the heteroskedasticity robust version of the Fuller estimator with the same set of instruments. See [Goldsmith-Pinkham et al. \(2020\)](#) for more detail. Sources: The 1848 and 1868 population census systematic samples, and the two over-samples of non-Muslims in Cairo in 1848 and 1868. The sample is restricted to the adult (≥ 15) male non-European non-Muslim population of Cairo and Alexandria with non-missing religious affiliation and occupation.

Table 12: Spatial Networks Shift-Share IV: Summary of Rotemberg Weights

Panel A: Correlations					
	α_k	g_k	$\hat{\beta}_k$	F_k	$\text{Var}(z_k)$
α_k	1				
g_k	0.845	1			
$\hat{\beta}_k$	0.144	0.610	1		
F_k	0.621	0.224	-0.227	1	
$\text{Var}(z_k)$	0.345	0.073	-0.034	0.816	1
Panel B: Top 5 Rotemberg Weight Countries					
	$\hat{\alpha}_k$	g_k	$\hat{\beta}_k$	F_k	
Italy	0.704	166.000	0.911	85.009	
Greece	0.177	140.511	3.377	0.259	
France	0.092	56.052	0.709	2.544	
Spain	0.022	8.000	0.189	11.882	
Belgium	0.004	1.000	0.239	23.707	

Notes: This table replicates Table 4 in [Goldsmith-Pinkham et al. \(2020\)](#). Panel A reports the correlations between the Rotemberg weight of European polity k ($\hat{\alpha}_k$), the number of immigrants in the spatial networks sample who arrived in Cairo and Alexandria from polity k between 1848 and 1868 (g_k), the just-identified coefficient estimate ($\hat{\beta}_k$), the first-stage F -statistic (F_k), and the variation in the origin country shares across occupations in 1848 ($\text{var}(z_k)$). Panel B reports the top five origin European countries according to the Rotemberg weights.

Sources: The 1848 and 1868 population census systematic samples, and the two over-samples of non-Muslims in Cairo in 1848 and 1868. The sample is restricted to the adult (≥ 15) male non-European non-Muslim population of Cairo and Alexandria with non-missing religious affiliation and coordinates.

Table 13: Spatial Networks Shift-Share IV: Relationship between European Country Shares and Characteristics of Neighborhoods in 1848

	(1)	(2)	(3)	(4)	(5)
	Italy	Greece	France	Spain	Belgium
Prop. low-status dwellings	-0.06 (0.03)**	0.01 (0.02)	-0.03 (0.02)	-0.03 (0.04)	-0.06 (0.06)
Prop. non-privately owned dwellings	0.04 (0.02)	0.00 (0.02)	-0.00 (0.01)	-0.01 (0.01)	-0.02 (0.02)
Prop. local immigrants	0.06 (0.03)*	-0.01 (0.02)	0.02 (0.02)	0.05 (0.05)	0.07 (0.07)
Prop. having servants or slaves	-0.03 (0.03)	-0.02 (0.02)	-0.03 (0.02)*	-0.04 (0.04)	-0.06 (0.07)
Prop. foreigners	-0.11 (0.08)	0.42 (0.13)***	0.10 (0.03)***	-0.06 (0.06)	-0.06 (0.09)
Prop. non-Coptic Christians	0.10 (0.08)	-0.38 (0.13)***	-0.10 (0.03)***	0.06 (0.07)	0.08 (0.10)
Prop. Jews	0.13 (0.02)***	0.04 (0.03)	0.02 (0.01)	0.00 (0.01)	0.01 (0.02)
Obs (2006 quarters)	58	58	58	58	58
R^2	0.15	0.39	0.11	0.05	0.05
Mean dep. var.	0.02	0.03	0.02	0.01	0.02

Notes: This table replicates Table 5 in [Goldsmith-Pinkham et al. \(2020\)](#). Each column reports the results of a single neighborhood-level regression of an 1848 country share on neighborhood characteristics in 1848. Robust standard errors are in parentheses.

Sources: The 1848 and 1868 population census systematic samples, and the two over-samples of non-Muslims in Cairo in 1848 and 1868. The sample is restricted to the adult (≥ 15) male non-European non-Muslim population of Cairo and Alexandria with non-missing religious affiliation and coordinates.

Table 14: Spatial Networks Shift-Share IV: Alternative IV Estimates

	No Controls (1)	With Controls (2)	Coefficients Equal (3)	Over ID Test (4)
OLS	1.18 (0.53)	0.69 (0.48)	[0.23]	
Bartik	1.76 (0.94)	1.21 (0.86)	[0.36]	
2SLS	1.36 (0.56)	0.42 (0.27)	[0.08]	10.68 [0.47]
MBTSLS	1.36 (0.56)	0.42 (0.27)	[0.08]	10.68 [0.47]
LIML	1.35 (0.58)	0.42 (0.28)	[0.09]	10.70 [0.47]
HFUL	1.35 (0.58)	0.42 (0.28)	[0.09]	10.70 [0.47]

Notes: This table replicates Table 6 in [Goldsmith-Pinkham et al. \(2020\)](#). It reports various estimates of the individual-level regression of the protégé take-up among local non-Muslims on the presence of Europeans in the neighborhood. The OLS and Bartik rows replicate columns (1) and (2) in Table 5a. Column (1) does not contain controls, while column (2) does. Controls are dummy variables at the individual level: =1 if lives in a low-status dwelling (e.g., yard, shack, cemetery), =1 if lives in a non-privately owned dwelling (i.e. Waqf or state-owned), =1 if born outside city, =1 if has a servant or a slave, =1 if foreigner, =1 if non-Coptic Christian, and =1 if Jew. The 2SLS row is the overidentified 2SLS regression that uses each origin country share separately as instruments. The MBTSLS row uses the Modified Bias-corrected estimator with the same set of instruments. The LIML row is the Limited Information Maximum Likelihood estimator with the same set of instruments. The HFUL row is the heteroskedasticity robust version of the Fuller estimator with the same set of instruments. See [Goldsmith-Pinkham et al. \(2020\)](#) for more detail.

Sources: The 1848 and 1868 population census systematic samples, and the two over-samples of non-Muslims in Cairo in 1848 and 1868. The sample is restricted to the adult (≥ 15) male non-European non-Muslim population of Cairo and Alexandria with non-missing religious affiliation and coordinates.