ERC Working Papers in Economics 17/07
June / 2017

Political Economy, Firm Survival and Entrepreneurship in Turkey: The Case of the Wealth Tax (1942)

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This Draft: June 2017

Abstract

In 1942, the Republic of Turkey promulgated a controversial tax on personal wealth to finance mobilization of the army and curb inflation. The extraordinary tax was arbitrarily assessed and the burden fell disproportionately on non-Muslim minorities. The precise transformative effect of the tax on Turkey's commercial life is not well understood. This article assembles a new dataset of firms operating in Istanbul to show the tax led to a dramatic rise on the liquidation of enterprises with non-Muslim ownership but no effect on Muslims. At the same time, the tax caused a sharp decline in the formation of new non-Muslim firms and a commensurate increase in the number of Muslim firms. The results show that the Wealth Tax forced the dissolution of otherwise productive, older firms and contributed to the further nationalization of the economy.

Keywords: Turkish economic history, wealth tax, firm survival

JEL Codes: N84, N85, O1

ǂ This paper is supported by the European Commission under the Marie Curie Grant 2013ABH67840006 and the National Science Foundation under the grant NSF SES 1559273. We thank Ayhan Aktar, Dan Bogart, Amanda Gregg, Timothy Guinnane, Philip Hoffman, Timur Kuran, Jean-Laurent Rosenthal, and Ali Cevat Taşıran for helpful comments and suggestions. We also thank Atacan Atakan, Burcu Belli, Semih Göktalay, Taylan Kurt, Ece Özçeri, Sarp Sök, and Gülnihal Tüzün for excellent research assistance.

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1. Introduction

By the nineteenth century, large economic disparities emerged between Western Europe and the Middle East. As the region's largest economy, the Ottoman Empire, fell behind the industrial West, within the region Muslims lost competitiveness and largely disappeared from trade (Kuran 2004). The religious minorities—Greeks, Armenians, and Jews—came to enjoy a disproportionately large share of the economy in Istanbul and other commercial centers of the region (Artunç 2015). The nationalist policy makers viewed Muslims' disappearance from trade and industry as an important element in the larger problem of economic divergence. The Ottoman and Turkish governments were convinced that the creation of a Muslim, Turkish middle class was essential to achieve economic modernization.

The decisive moment to realize economic nationalization came through during World War II. In order to finance army mobilization, the government issued a new extraordinary tax, the Wealth Tax, in November 1942. The law itself had little to say the roll out. Consistent with the its nationalist agenda, however, the government instructed its officials to charge non-Muslims higher rates. The lack of accurate information about personal wealth and income led to arbitrary assessments, which further increased non-Muslims' tax burden.

This article examines the heterogeneous impact of the tax on Muslim and non-Muslim enterprises by assembling new firm-level evidence on enterprise survival in Istanbul between 1926 and 1950. We find that the tax led to a substantial spike in non-Muslim firms' liquidation relative to Muslim-owned businesses. It also reduced the formation of new non-Muslim enterprises. Thus, the tax contributed to religious minorities' disappearance in Istanbul's commercial life. The proceeds from the Wealth Tax were used to finance Muslim entrants, further facilitating the nationalization of Turkey's business life. The law had dismal implications for Turkey's economic growth: it prematurely removed the most productive firms, which were disproportionately owned by non-Muslims and were older, replacing them with less productive Muslim-owned startups that ended up dissolving within years.[3]

[3] While most startups dissolve quickly, these Muslim-owned entrants were more likely to dissolve even compared to the average startup.

This is the first study that systematically examines how the Wealth Tax affected non-Muslims' economic participation in Turkey. In doing so, it contributes to the Middle East's economic and business history in two ways. First, it is closely related to the literature on inter-religious inequalities that emerged in the region during the nineteenth century. Inalcık (1960), Panzac (1992) and Kuran (2011) all show that Muslims were just as active in long-distance trade during the early modern era. However, Muslims' share in commerce started to decrease in the eighteenth century, a trend that proved to persist well into the 1800s (Eldem 1999, Owen 1993). Kuran (2004) relates non-Muslims' success to the fact that they had access to superior European legal systems while Muslims did not. Artunç (2015) shows that legal pluralism gave non-Muslims an advantage in trade by allowing them to exercise multiple options in dispute resolution. In either case, economic and legal reforms after 1850 did not restore Muslims' competitiveness. This paper shows that the government could only succeed in improving Muslims' business participation through expropriation and direct transfers.

Second, our paper contributes to the debates on Turkey's lopsided development in the 1900s. Owen and Pamuk (1998) show that Turkey had a stagnant growth record until the 1950s. Pamuk and Filiztekin (2008) argue that much of this stagnation was due to poor growth in total factor productivity. We show that the Wealth Tax could account for some of this poor performance. Growth requires commercial expansion and higher productivity at the firm level. By targeting non-Muslim enterprises, the Wealth Tax simultaneously removed older, more efficient enterprises and blocked further non-Muslim entry.[4] By forcing these enterprises out, the law replaced the most productive enterprises with inefficient ones, which in turn dissolved rather quickly. The arbitrary collection procedure itself undermined the security of property rights, which reduced investment and formation of industrial capital.

This paper is also related to the broader literature on income taxes' emergence and organization. The Wealth Tax was the first instance of a tax based on personal income in the region.[5] Like most

[4] Old firms are more productive due to survivorship bias. This is a robust finding that appears in various settings including employment (Topel and Ward 1992), organizations (Levinthal 1991), and publicly-traded firms (Baker and Kennedy 2002).

[5] The Wealth Tax was a tax on personal assets but the tax burden was based on personal income. Previously, the government had introduced an earnings tax on the profits of mercantile establishments in 1926 (Earnings Tax Code,

developing countries today (Bird and Zolt 2005), the Turkish government levied the tax on a presumptive basis, furnishing its bureaucrats with discretionary powers for assessing incomes due to scarce information. The law had just enough vagueness so that the bureaucrats could arbitrarily put even more burden on minorities. Similar problems appeared in other settings. Imperial Russia's first income tax in 1885 also relied on tax offices' discretionary income assessments and thus ended up imposing a greater burden on Jews (Bowman 1993). In both cases, the law raised uncertainty in business environment. Thus, we show that confiscatory taxes in the presence of incomplete information can lead to discriminatory overreach and raise political risk. Our firm-level evidence shows that even a one-time shock of arbitrary taxation can have persistent effects in business formation, especially in certain sectors.

2. Historical Background

In the 1930s, Turkey was still a young Republic, whose policy makers were keen on building a modern state over the institutional vestiges of the Ottoman Empire they inherited. War had ravaged the region between 1913 and 1923 brought about the end of the Ottoman Empire. The new nation state was born in an exceptionally difficult economic situation. In the 1920s, Turkey was still a agrarian economy with almost no industrial basis.[6] Agriculture and mining were severely depressed due to wartime destruction. The Ottoman Empire's territorial disintegration also had long-lasting demographic consequences. The mass expulsions of Armenians during World War I and the Greek-Turkish population exchange after the Greco-Turkish War of 1919-22 led to a permanent change in the ethno-religious make-up of Anatolia.[7] Furthermore, the government pursued a "national" economic policy, discriminating against non-Muslims through harassment, boycott, and exclusion from employment. By 1923, non-Muslims' share in Anatolia's population had fallen to only about 2.5 percent of Anatolia's population (Aktar, 2003: 87).

Law No. 755 Official Gazette, 14 March 1926 No. 321, enacted: 27 February 1926). The first modern income tax was adopted in 1950 (Durdag 2012: 175).

[6] In 1914, there were 182 non-artisanal, industrial establishments, employing 14,060 workers (Ökçün, 1970).

[7] See Dündar (2001) for an examination of Anatolia's demographic changes after 1913 and Üngör and Polatel (2011) for the impact of the Young Turks' policies on Ottoman Armenians.

While demographic changes led to a homogenous population in Anatolia, "national economic" policies to create a predominantly-Muslim business class were only marginally successful. First, despite an ideology of economic independence, the economy remained dependent on foreign capital enterprises in the 1920s and 1930s.[8] Second, Istanbul, still the hub of commercial, industrial, and financial activity, preserved most of its non-Muslim population who continued to have a disproportionately large presence in trade and finance.[9] The non-Muslim dominance in the economic sphere were at odds with the government's nationalist outlook. The state's legitimacy depended on an alliance between the military-bureaucratic elite and local Muslim notables, most of whom landlords and small-town merchants. Both viewed non-Muslims, who had stronger links to international trade networks, as a fifth column. Moreover, earlier property redistribution from non-Muslims to Muslims in the 1920s proved to the government that similar policies could simultaneously create a "native" bourgeoisie and make it beholden to the state (Keyder, 2003: 45).[10]

Changes in the development strategy also underpinned the new tax policy. Like their Ottoman predecessors, Turkey's ruling elite strove to facilitate industrialization. In the 1920s the government pursued free trade and liberal policies that supported private sector. While there was some industrial growth thanks to the post-war recovery, the industrial base remained small.[11] Disappointed with this failure, the government devised a new strategy in the 1930s after acquiring the necessary policy discretion. First, the Treaty of Lausanne's restrictions lapsed in 1929, giving the government full tariff and fiscal autonomy. Second, severe decline in the prices of agricultural goods and deterioration in terms of trade prompted the government to adopt a more active role in

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[8] See Owen (1981: 293) and Tezel (1982).

[9] According to the 1935 Population Census, Christians and Jews made up 24.6 percent of the population in Istanbul. 49.6 percent of Istanbul's Christian population and 48.5 percent of Jews were involved in industry or trade whereas only 25.2 percent of Muslims were involved in these sectors. Muslims predominantly (28.2 percent) held occupations in agriculture and administration.

[10] Morack's (2017) recent work explores how property redistribution shaped Turkey's identity in these early years.

[11] Manufacturing's share in GNP was 9 percent in1929, industry's share overall (including construction) was 15 percent; urban population accounted for 15 percent of the total at the same time. By 1939, manufacturing share in GNP increased to 22 percent, urban population share to 18 percent (Owen and Pamuk 1998: 244). The wide-scale state support for private enterprise did not create a national, industrial business class Kemalist elite envisioned. The government viewed the new middle class—especially the few who participated in foreign trade—with suspicion, especially during the Great Depression (Boratav 1981).

promoting the industry. It founded a national bank, introduced trade protection and nationalized foreign-ownership railways and coal mines. It also took ownership of firms that went bankrupt during the recession (Issawi, 1982: 72-73) and established several state-owned enterprises in key sectors as part of the first five-year economic plan of 1934.[12]

Thus, Turkey had become a more closed, autarkic economy.[13] Etatism, the state's broader and direct involvement in the economy, became the guiding principle of developmental policy. This had two implications. First, the public sector's expansion required new sources of revenue, especially since the global recession had rendered foreign capital insufficient to finance industrialization.[14] An extraordinary tax, such as the Wealth Tax, could raise public revenues and transfer resources from the private to the public sector.[15] Second, etatism prescribed extensive regulation and control of private business. The single-party regime implemented tight restrictions on private enterprise, labor organization, and civic engagement in the 1930s. Etatism helped propagate the idea that the private sector had to function in line with national interests. The state used this principle to justify restrictions on private enterprises, forced labor, price controls, and expropriation.[16] The Wealth tax was an act of economic nationalization rather than merely a fiscal tool; it must be understood within this broader ideological framework.

The outbreak of World War II created even more room for nationalist policies by plunging the economy into a severe crisis. The government had mobilized around one million men by 1939. To meet the rising defense expenditure, it printed money, which led to a great deal of inflation. At the same time, the breakdown of international trade resulted in acute scarcity and high prices. The foreign trade commissioners and merchants, in particular non-Muslims, were held responsible for

[12] By 1938, the government had established 19 of 25 factories it projected; industrial production rose by 80 percent since 1929 (Barlas 1998: 98-99).

[13] Import share in GNP fell from 14.4 percent to 6.8 percent while export share fell from 11.4 to 6.9 percent between 1928/9 and 1938/9 (Owen and Pamuk 1988: 245).

[14] Foreign investment fell from £63 million to £18 million between 1923 and 1933 (Issawi 1982: 72).

[15] State investment (mainly in industry and railways) averaged to 4.5-5 percent of GNP in 1933-9 national income; private investment was likely similar (Issawi 1982: 190).

[16] One example was the National Protection Law (Milli Koruma Kanunu, 1940). Another example was restricting incorporation and limited liability companies; both required ministerial approval until 1957. Contemporary legal scholars justified these requirements with reference to etatism.

the shortage of goods.[17] The national press accused non-Muslim merchants of profiteering, speculation, hoarding, and participating in the black market. This was the official justification of the Wealth Tax; the government claimed its objective was to tax the "extraordinary" profits made during the war and reduce the amount of money in circulation. While the law itself did not make any explicit reference to non-Muslims as a distinct taxpayer category, the high-ranking officers' and taxpayers' accounts indicate that the bureaucracy assessed the tax burden based on each tax-payer's ethno-religious identity.

3. How was the tax imposed?

The Wealth Tax was justified with reference to the exigencies of the World War II. Yet, the way the tax was justified in the mainstream press, the accounts of the officials in charge of implementing the tax, and taxpayers' testimonies reveal that the tax was meant to be more than financial relief. The prime minister, Şükrü Saraçoğlu, presented the law as a tool to eliminate the foreigners and place the Turkish markets in the hands of the Turks (Aktar 2013: 193). Yet, due to the pressures of the foreign consulates, the government eventually came to accept that the foreigners would face the same rate as Muslims. Non-Muslims bore the most of the burden. Saraçoğlu alleged that his government was targeting only the profiteering non-Muslims.[18] According to Faik Ökte, the director of finance for the province of Istanbul during the imposition of the Wealth Tax, the finance department prepared tax assessments based on each taxpayer's "estimated income" in the previous year. The department then prepared separate lists for non-Muslims, who ended up having to pay four times the amount Muslims did at same level of assessed income.[19] Dönmes (Sabbateans, a sect of Jewish converts to Islam) faced a rate that was between Muslims and non-Muslims, but the tax department would not prepare separate lists for them.[20] The

[17] The ethno-religious division of labor, a characteristic of the Ottoman Empire, was still prevalent in the 1930s. Ökte claims that non-Muslims were predominant in foreign trade while Muslims mostly participated in agriculture and bureaucracy. The 1935 Census confirms this view (fn. 9).

[18] Ökte (1951: 53).

[19] Ökte (1951: 86). There were several taxpayer categories. The largest group was the extraordinary taxpayers, which included rich merchants and producers. The rule was simple. Muslims would pay 1/8 of their income in the previous year; non-Muslims would pay one half. The bureaucrats essentially "guessed" the incomes, creating a great deal of arbitrariness.

[20] Ökte (1951: 92, 102).

final list mandated an imposition on 114,368 citizens with a total amount of 465,384,820 Turkish Liras.[21] 54 percent of the taxpayers were from Istanbul and the amount they were assigned made up 68 percent of the total tax. The levy was a substantial burden on the average taxpayer, who was forced to pay, within two weeks and in cash, 12 to 15 times the GDP per capita at the time. Most of the tax was collected from non-Muslims.[22] While even these averages demonstrate the severity of the tax burden, they are somewhat misleading as tax assessments were highly skewed. The highest tax assessment class for non-Muslims comprised only 4 percent of all taxpayers; they ended up paying 54 percent of the entire tax assessment. This group's tax payment per capita was about 21 times the national average. The amount assigned to all non-Muslims constituted 83 percent of the entire assessment in Istanbul.[23]

In practice, non-Muslims faced higher payments than the one-to-four ratio specified by the Finance Department.[24] Four aspects of the tax collection process were critical. First, the loopholes in the law created arbitrary practices. The law did not set any standard procedure or objective criteria through which the tax liability could be determined. The Turkish bureaucracy had limited information about taxpayers' earnings or assets.[25] On paper, the officials were supposed to estimate taxpayers' incomes in the preceding year. These estimations were made with scant information collected from banks, other merchants, and party-affiliate committees consisting solely of Muslim politicians and tradesmen.[26] Hence, most were taxed based on the finance department's estimates, which were "made out of thin air."[27] This led to arbitrary practices. Taxpayers' and the Finance

[21] Ökte (1951: 197).

[22] We used the Turkish Statistical Institute's figures to calculate the ratios.

[23] Aktar (2000: 154).

[24] According to a foreign reporter, non-Muslims paid 10-15 times of the amount paid by Muslims with comparable wealth. See Bali (2012: 375-6).

[25] Ökte (1951: 25). Ökte gives detailed information on the drawbacks of the financial system in Turkey at the time. The previous earnings tax constituted only 2.4 percent of the national income prior to the war, which attests to the problems of Turkish public finance.

[26] Ökte (1951: 47-48). Before the Wealth Tax's roll-out, some bureaucrats suggested enforcing a larger group of taxpayers to declare income so that rates could be assigned accordingly; this proposal was rejected. Ökte (1951: 207) maintains that such a procedure could have prevented discrimination. There was also a proposal to increase the earnings' tax, which was also rejected (Ökte 1950: 44-45).

[27] Ökte (1951: 75).

Department director's testimonies indicate that personal animosities and political differences played a large role in determining each taxpayer's burden.[28]

Second, taxpayers did not have any legal venue to dispute the taxes imposed upon them. They tried to object the amount by writing petitions to the administrative authorities. According to Ökte, there were 24,316 such petitions; as a result, more than 19 million Turkish liras were reduced from the original assignment until March 15, 1944, when the law was abolished, the tax was written off and the defaulters were released from the labor camps. Most reductions, however, were due to "error of fact" and "duplicate assignments." The state simply did not recognize its citizens' rights in legally disputing fiscal obligations.

Third, the law undermined the security of property rights. If the tax was not paid in time, the authorities could confiscate not only the taxpayers', but also their co-living relatives' assets, which was in conflict with the basic premises of the law of obligations. In the first few weeks of the law, such taxpayers were forced to sell their assets at very low prices, which had been one of the objectives of the government.[29]

Fourth, the short deadline for paying the assessment created liquidity problems for taxpayers, forcing them to liquate their assets at less-than-market values. The tax had to be paid within two weeks and payments had to be made in cash.[30] Those who were not able to pay could be sent to the forced labor camps.[31] Thus, the tax hit those with liquidity constraints—specifically, entrepreneurs whose assets were tied in illiquid investments—much worse and paved the way for a substantial wealth transfer.

The arbitrary assessment, the lack of a legal plea process, the unreasonably short time frame for collection, and the expropriation for unpaid taxes made the Wealth Tax an appropriate instrument

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[28] Ökte (1951: 95).

[29] Bali (2012: 360-365).

[30] Ökte (1950: 25).

[31] Almost all of the 1400 people who were sent to the camps were non-Muslims (Okte 1950: 154-8).

for eliminating non-Muslims from Turkish economy and enabling massive wealth transfer from non-Muslims to Muslim entrepreneurs and the Turkish state.[32]

The Wealth Tax also raised concern about future co-existence between Muslims and non-Muslims in Turkey. In addition to the feelings of injustice and resentment the tax induced in non-Muslim communities, it became a source of humiliation and fear. More than 1,000 people were sent to labor camps for not being able to pay the tax. Over 30,000 Jewish and 20,000 Greek Orthodox Christians left Turkey after the Wealth Tax.[33]

The Wealth Tax received much criticism and demands for repeal during the sixteen months it remained in effect, especially from the foreign press.[34] A few national newspapers also raised objections to the tax's implementation.[35] The taxation of low income-earners received broad criticism; even the bureaucracy in charge of administering the tax could not justify such assessments. In September 1943, as a relief to small taxpayers, certain occupational categories (e.g., service providers and travelling salesmen) were pardoned from the tax obligation.[36] On March 15, 1944, the tax was abolished and the remaining debts were written off. The practical difficulties of collecting the remaining debt as well as international and domestic pressure likely prompted the government to terminate the tax altogether. The course of the global conflict might have also played a role in the timing of the tax's removal. The success of the Fascist front in the early years of the war had made it easier for the Turkish administration to pursue a discriminatory, nationalist agenda through Wealth Tax, which closely resembled the economic expropriation of the Jews in Germany.[37] As the Axis powers lost their strongholds in Europe and the international

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[32] According to Ökte (1950: 52), this was indeed one of the aims of the tax.

[33] Okutan (2004: 195). Most Turkish citizens of Jewish descent (estimate to be more than 30,000) migrated to Israel after 1948 (Aktar and Özel 1999).

[34] Cyrus L. Sulzberger, in particular, wrote a series of articles in which he pointed out the arbitrary nature of the tax and assessments on non-Muslim businesses were almost confiscatory. Sulzberger, C. L. "Turkey is Uneasy over Capital Levy." The New York Times, September 9, 1943. Sulzberger, C. L. "Turkish Tax Kills Foreign Business." The New York Times, September 11, 1943.

[35] *Vatan*, a newspaper which published Ahmet Emin Yalman's articles criticizing the tax, was shut down by the Council of Ministers. Ökte (1951: 195-96),

[36] Ökte (1950: 196).

[37] For the ideological underpinnings of the Turkey's anti-Jewish policy, see Baer (2010: 229).

tide turned against nationalism and racism in 1944, the Turkish administration started to improve its relations with the Western Allies and, among other measures it took to this end, it abolished the Wealth Tax.[38]

4. Data on Enterprises

This paper assembles a new dataset of enterprises established in Istanbul between 1926 and 1950. We hand-coded business entries published in the Istanbul Chamber of Commerce's official directories. Each directory, called *Adres Kitabı*, presents a comprehensive list of all enterprises operating at the year the directory was prepared. As required by the Commercial Code, each business was required to register their firm with the courts and the chamber of commerce. When these establishments were liquidated, their registries were struck down. These cross-sections are as close as possible to describing the population of each cross-sectional population.

It is not clear how frequently the Chamber published these directories. They are not reported in the Chamber's official list of publications. For this paper, we consulted the collections of the National Library in Ankara, Beyazıt Library in Istanbul, the archives of the Chamber of Commerce in Istanbul, and the New York Public Library and digitized the directories for the years 1929, 1935, 1938, 1941, 1944, and 1950. We also digitized a list that includes all defunct and active enterprises ever registered up until 1926 in Istanbul. There are two other directories, 1917 and 1923, which we did not use for this study.[39] Our research did not yield any other similar source.

Each directory was organized into distinct commercial or industrial activities, which named all firms engaging in that activity. A firm could—and did—participate in multiple activities. For each enterprise, the directory provided the following details: its registration (*sicil*) number, its name, its address, and its capitalization category. There were four categories in ascending order of capitalization: the fourth to first classes and the "exceptional" class (*fevkalade*). The exceptional class consisted of firms whose capitalization exceeded TL 300,000 at the time. A business was

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[38] Hale (2012: 73) and Çetiner (2014: 395-396).

[39] Entries in these directories were difficult to match to later ones since 1917 and 1923 cross-sections had no registration numbers, individual names were listed by first name only, and all entries were written in Ottoman, which rendered non-Muslim names ambiguous.

assigned to first class if its capitalization was between TL 200,000 and TL 300,000. Second-class enterprises fell between TL 100,000 and 200,000. Third class was defined for capitalizations between TL 150,000 and 100,000. Anything below TL 15,000 was assigned into fourth class. These cutoffs were valid for all directories through 1941. The directory of 1944 did not report the capital class. The 1950 directory revised the cutoffs as follows: fourth class lower than TL 10,000, third class between TL 10,000 and 50,000, second class between TL 50,000 and 100,000, first class between TL 100,000 and 200,000, and "exceptional" higher than TL 200,000.

We used the directory information to tease out more details about ownership characteristics. First, we assigned each firm an enterprise form based on the naming conventions required by the Commercial Code of 1926. Single proprietorship had to use the owner's name and nothing else. Partnership had to either list all partners with unlimited liability (i.e. the general partners), or use one general partner's name followed by a phrase such as "brothers" (*"biraderler"*) or "and company" (*"ve şürekası*") to indicate multi-ownership. Any private limited liability company's name had to be appended with the suffix "Limited" (Ltd.). Similarly, any corporation's name had to contain the phrase *"Türk Anonim Şirketi"* (T.A.Ş). These rules allowed us to classify each entry as a single proprietorship, partnership, private limited liability company, or corporation.[40]

For single proprietorships and partnerships, we were also able to use the name of the owner(s) to assign each firm an ethno-religious identifier. Differences between Turkish, Greek, Armenian, and Jewish (most of whom were Sephardic) names are evident. As a further robustness check, we also utilized the records of the Istanbul Jewish Genealogy Project, which has collected the surnames of the Jewish community based on more than 35,000 marriage and death records from 1887 onwards.[41] Our methodology allowed us to designate single proprietorships and partnerships as Turkish (Muslim), Greek, Armenian, Jewish, Europeans, and any mix of these groups.

For limited liability companies and corporations, the best we could do was to distinguish foreign companies from domestic ones. Any PLLC or corporation had to use a Turkish name, but beyond

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[40] We could not distinguish general partnerships (*kollektif*) from limited partnerships (*kommandit*). Limited partnerships were required to only use the general partners' names in the company's legal name. General partnerships, on the other hand, were not obligated to include every single individual's name. Thus, the company "Gregg & Co." could very well be either a general or a limited partnership.

[41] The project website can be found at the link http://www.dankazez.com/istanbul/

that, these names did not systematically reveal anything about the owners, which is consistent with the nature of incorporated enterprises.

Finally, we exploited the registration numbers themselves to infer an establishment year for each firm. In 1926, the new commercial code mandated the assignment of registration (*sicil*) numbers. As a result, each enterprise that ever existed in Istanbul's registry—whether alive or dead—was retroactively assigned a registration number. This list was then published between 1926 and 1927. We were not able to ascertain any pattern to the number assignment for firms established before 1925. However, starting from 1926, the numbering was chronological. Furthermore, each city had its own *sicil* and thus a particular set of registration numbers. This registration numbering system remained de-centralized until 1956. Since numbering was local, any registration number between 1 (the smallest in our dataset) and 43,125 (the largest) is assigned to a single distinct business in Istanbul. No number was skipped (though they are not necessarily in our dataset), and no number was assigned to a firm whose legal office was outside of Istanbul. Further consulting the Chamber's records, we were able to define cutoff registration numbers for each year, thus yielding a "birth year" for each enterprise.

The directories did not give all information consistently. The volumes of 1929, 1935 and 1938 excluded firms of fourth capitalization class altogether. The 1944 directory did not report capitalization class or *sicil* numbers. Although the nominal cutoffs for capitalization categories remained constant during our period except 1950, rampant inflation during World War II will make comparisons between 1941 or earlier registries and 1950 suspect. Moreover, our method does not reveal anything about the identity of limited partners (whose names did not appear in the firm's legal name). Hence, while unlikely, there could be potentially many more companies whose partners were of different ethno-religious backgrounds. Finally, our ethnic classification cannot identify the small number of Sabbateans (*dönmes*), who were subject to extraordinary assessments (Ökte 1950: 92, 99). Since *dönmes* used Muslim names, they have been categorized as Muslims in our analysis. This omission due practical difficulties might bias the results against our hypothesis by overestimating the negative impact of the tax on Muslims.

5. Overview of Enterprises in Istanbul between 1926 and 1950

Istanbul had long been the commercial, financial, and industrial heart of the Ottoman Empire. While no longer the capital under the nascent Turkish Republic, the city retained its prominent position as the largest port for international trade, center of commodity trading, and the largest financial market in the country. As such, Istanbul's commercial life reflected the broader developments in Turkey's economy. Figure 1 shows that for much of the interwar period, business entry remained stagnant after falling sharply in 1927. One can easily identify the big jump in 1942 and 1943. As we will show later, this is the Wealth Tax in action, which led to the liquidation of non-Muslim businesses whose assets were used to finance "Turkish"-Muslim startups.

Most firms were also organized as single proprietorships or unincorporated partnerships, as reported in Figure 2. The preponderance of single proprietorships is not surprising as it is the most common way to organize small businesses even today. What is perhaps more surprising is the lack of popularity of the private limited liability company, which quickly became the dominant legal form in whatever European economy it was introduced.[42] While this is the subject of a different line of research, restrictions on forming private limited liability companies were likely responsible for their small share in the distribution.[43]

Figure 3 shows the breakdown of single proprietorships and partnerships by ethno-religious identity of the owners across different cross samples. Figure 4 plots a similar ethno-religious distribution among new business entries in each directory. While Muslims were certainly active in trade, minorities enjoyed a much larger share relative to their size. Muslims had about 1 to 2 businesses per 1000 Muslims in Istanbul between 1935 and 1950 compared to 2-6 Christian enterprises per 1000 Christians and 6 to 13 Jewish firms per 1000 Jews.[44]

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[42] See Guinnane et al. (2009) for a comparison of the historical take-up of private limited liability companies in Germany, France, the United Kingdom, and the United States.

[43] Forming a private limited liability company required a special permission from the Ministry of Commerce. Forming a corporation required a special permission from the Board of Ministers.

[44] We have used the figures in Istanbul published in the population census of 1935 for the business cross-sections of 1935 and 1938, and the census of 1945 for the cross-sections of 1941, 1944, and 1950.

Figures 3 and 4 reveal salient differences in the evolution of Muslim and minority enterprises. First is heterogeneous impact of the Great Depression, which affected Muslim enterprises significantly more severely and lead to a sharp decline in Muslim enterprises' total share. This is due to a much higher rate of liquidation among Muslim enterprises and a similar decline in the share of Muslim entrants. Both facts are consistent with the view that Muslim firms had lower productivity and were less efficient than non-Muslim firms, which we will discuss later on. Our regression analysis reveals that these differences are robust to sectoral or size effects.

Throughout the 1930s, Muslim participation in business slowly recovered though Muslims' competitiveness was not restored completely until the second big shock: The Wealth Tax. The assessment seems to have dramatically altered the make-up of firm owners in Muslims' favor. Although minority firms reverted back somewhat by 1950, their fate had largely been sealed.

Heterogeneity across enterprises of different ethno-religious groups went beyond a matter of numbers. Table 1 reports ownership characteristics, capitalization, and sectoral distribution of all distinct single proprietorships and partnerships that appeared in the directories. These figures remained remarkably stable across specific cross-sections, justifying this pooled representation of the data. Consistent with earlier discussion, most of these businesses were single proprietorships rather than partnerships. Muslims, Greeks, and Armenians were more similar in this regard. Jewish entrepreneurs, on the other hand, were much more likely to pool their assets to form partnerships. About half of all Jewish enterprises consisted of partnerships, consistently across each directory. Partnerships owned by any other group made up of 27 to 33 percent of all firms within that community.

Second, Muslim companies were richer. True, all firms were small. The median business in any group was a single owner with a third-class establishment. However, Muslims had a significantly lower share at this lower tail compared to the other groups. In other words, while Muslim participation was more meager relative to their share in the population, they had a higher proportion of more heavily capitalized firms. These larger businesses were mostly Muslim; 60 percent of first-class and 76 percent of exceptional-class firms were owned by Muslims.

Finally, while most firms were overwhelmingly mercantile establishments, there was partial specialization among ethnic groups. Muslims had a higher concentration in manufacturing and non-Muslims in trade. Within trade, Muslims and Greeks were relatively more active in trading foodstuff and agricultural products, while Armenians and Jews were found more in the trade of various textiles and garments. Regardless, the idea that entire sectors had been overtaken by one specific group is decidedly false.

6. The Differential Impact of the Wealth Tax

So far, the raw data outlined the differences in owner characteristics of each cross-section and how firm ownership in Istanbul changed over time. Even though the evidence suggests that the tax was responsible for the sharp decline of non-Muslim enterprises from 1941 onwards, this section explores the issue in more detail in order to disentangle how much of the tax directly targeted non-Muslims, rather than incidentally affecting them through its impact on other factors

Ideally, one would undertake a continuous duration model, such as time-acceleration or Cox proportional hazards, to estimate the effect of covariates on survival time or time-to-failure. Unfortunately, our data do not permit this technique. We do not observe firms over the entirety of their life cycles. Without knowing the exact formation and liquidation dates, the continuous duration models are infeasible.

The second challenge arises due to the way the data became available. What the directories give are snapshots at specific intervals. If the directories were annual, we could have adopted a straightforward interpretation of annual survival. Instead, we interpret our model as either distinct survival events between directories (our preferred specification), or survival likelihood conditional on having survived the initial three or so years between establishment to the next closest directory date. The empirical strategy invites some degree of selection. For instance, 779 new firms were added to the directory in 1938. The registration numbers indicate that about 2,700 firms actually entered the market between 1935 and 1938. Hence, our dataset is missing approximately 2,000 enterprises that formed and got liquidated between the publication of these two consecutive directories.

Finally, the third problem involves the inconsistency of intervals between directory publications. This interval can be three years (1926-1929, 1935-1938-1941) or six years (1929-1935, 1944-1950). In order to make meaningful comparisons, we restrict attention to survival windows: the likelihood of a firm surviving for three, six, or nine years after first appearing in a directory.

We start by treating surviving into the next subsequent registry as a discrete event. This is a simple logit estimation of survival likelihood between any two consecutive directory listings. The set of covariates include dummies for enterprise forms, with the single proprietorship being the reference group, dummies for ethno-religious groups, capital class, industry dummies, and establishment-year dummies (as imputed from the registration number). Our main interest is survival between the directories 1941 and 1944, during which the Wealth Tax was imposed.

Table 2 reports the results of survival estimations across consecutive directories. Enterprises had different survival odds based on owner characteristics depending on the period. Muslims had a much greater liquidation risk during the years of Great Depression, between 1929 and 1935. In the subsequent periods, ethno-religious groups were not statistically different from each other. All non-Muslim enterprises active in 1941 were on average 9 percentage points less likely to survive to 1944 relative to Muslim firms. This is the impact of the Wealth Tax.

We stress two other related findings: the much higher liquidation rate of Muslim-owned businesses between 1929 and 1935 as well as between 1944 and 1950. The first result indicates that the Great Depression differentially hurt Muslim enterprises much more severely than non-Muslim firms even controlling for other salient observables such as capital, industry, and enterprise form. Our analysis suggests that the lower productivity of Muslim-owned businesses is responsible for this higher rate of liquidation. As Caballero and Hammour (1994) show, economic downturns drive out firms and techniques at the lower tail of the productivity distribution, a process known as the "cleansing effect of recessions." The second result reinforces this point. The Wealth Tax removed the most productive businesses, non-Muslim firms, from the market and replaced them with Muslim-owned enterprises. Lacking non-Muslim entrepreneurs' entrepreneurial know-how, these new Muslim firms dissolved quickly, especially during the severe recession of 1943-5.[45]

A similar pattern emerges on the entry side. Figure 1 shows an overall decline in firm entry during 1929-32 and 1944-45. Figure 4 shows that this decline is driven by a substantial drop Muslim firms' entry rates during both periods of recessions in 1929-35 and 1944-50. This is the selection effect on productivity during particular points at the business cycle. Firms follow a productivity

[45] Turkey's real GDP per capita fell by 16 percent in the recession of 1945. During the height of the Great Depression, the growth rate had dropped to -12 percent.

cutoff above which they enter business. These cutoffs exist due to frictions in the financial market (Bernanke and Gertler 1989). Booms relax these frictions, lower the productivity threshold and lead to higher entry rates specifically selecting on less productive firms. Recessions, instead, tighten these frictions, raise the entry threshold, thereby lowering the number of entrants but selecting on more productive, robust firms. Thus, firm entry rate is pro-cyclical while entrant productivity counter-cyclical, a robust pattern that both Moreira (2015) and Artunç (2017) demonstrate. Our results reinforce the literature's view that Muslim firms were more inefficient and further demonstrate that the Wealth Tax essentially replaced the most productive firms, especially the robust business that survived the Great Depression, with much less productive enterprises.[46]

The main point we underline here is robust to other empirical specifications. Our second estimation strategy is essentially difference-in-differences. We focus on three-year, six-year, or nine-year survival windows from the time the firm first appeared in a directory. For instance, to estimate 6-year survivorship consistently, we consider whether firms that first appeared in 1935 were re-listed in 1941, those that first appeared in 1929 survived until 1935, etc. For some firms, this three-year (or six-year, or nine-year) window will coincide with the year 1942. Thus, when we estimate six-year survival, firms that first appeared in 1938 will receive the tax shock but those that first appeared in 1935 will not (because the latter's six-year survival window terminates in 1941 before the tax was imposed). Our hypothesis states that the tax had a differential effect on Muslim and non-Muslim firms. We estimate the logit model where the dependent variable takes a value of 1 if the firm survived the fixed period in question after first appearing in the registry. The critical covariates are tax dummy (which indicates whether the timing of the tax was within the fixed survival window), ethno-religious identifiers, and their interactions. We have the usual control variables as before: enterprise form dummies, capital class, age, industry fixed effects. Age now

[46] One can argue that non-Muslims could raise capital with more ease than Muslims. This would create a bias against our hypothesis that Muslim firms were less productive. If Muslim and non-Muslim enterprises were drawn from the same productivity distribution then non-Muslim firms would be less productive overall as non-Muslims' productivity cutoff for entry would be lower. This would imply higher overall dissolution rates (especially during recessions) and lower share among entrants relative to Muslim firms during busts, the exact opposite of what we observe in the data.

indicates the firm's age at the time it first appeared in the relevant directory and thus cannot exceed two if we look at three-year survival, or five for six-year survival.

Table 3 displays the results of the difference-in-difference estimation of three-year, six-year, and nine-year survival. Non-Muslim enterprises enjoyed lower failure rates than Muslims did, on average. This is largely driven by the Great Depression in the estimates of six-year and nine-year survival. The heterogeneous effect of the tax is identified by the interaction of cohort effects with non-Muslim dummies (1941 for three-year survivorship, 1938 for six years, 1935 and 1941 for nine years). The tax had a substantial and negative effect on minority firms. The coefficient estimates are large, particularly for the six-year interval. The tax led to differentially high liquidation rates for non-Muslim firms, especially over the long run.

These effects are essentially impacts of first appearing in directories closer to the year 1942. Our final and preferred specification treats new entries in each directory as distinct cohorts and estimates cohort-specific hazard rates. In other words, the 1929 cohort describes firms established between 1926 and 1929, the 1941 cohort those that were "born" between 1938 and 1941, etc. The only exception here is the 1926 group, which contains all surviving firms in 1926. Descriptive data give a preview of the result. Table 4 reports the last-directory distribution for each of these cohorts by ownership characteristics. For instance, the first column shows that 18.07 percent of all Muslim-owned firms that first appeared in 1935 were last listed in the 1938 directory. Three patterns emerge. First, a much higher proportion of Muslim-owned firms dissolved during the Great Depression within the 1926 or the 1929 cohorts. Second, the Wealth Tax was a severe negative shock on non-Muslims. Survival rates until 1944 were 5 to 17 percentage points lower in non-Muslim firms compared Muslim enterprises. Third, Muslim-owned firms had higher survival between 1944 and 1950. The evidence suggests that the Muslim firms that replaced the dissolved non-Muslim enterprises were not as productive and dissolved much more quickly.

We now take cohort-specific conditional survival more seriously and use the previous logit framework to estimate conditional survival probabilities for each cohort separately. We include our previous set of controls, with Age again denoting the age of the firm at the time it first appeared in a directory (i.e. that firm's cohort). Table 5 reports the results. Columns 1 to 5 indicate the 1929 cohort, columns 6 to 9 denote the 1935 cohort, 10 to 12 the 1938 cohort, 13 to 14 the 1941 and column 15 the 1944 cohorts. Each column reports the estimates of a logit regression where the dependent variable is whether the firm appeared in the indicated directory conditional on having appeared in the previous one. For instance, for the 1929 cohort, the first column 1935 reports the coefficient estimates from a logit regression of appearing in the 1935 directory, the second column 1938 reports the estimates for a logit regression of being listed in 1938 conditional on also being listed on 1935. Thus, we estimate the hazard function of each cohort. In our discrete time model, hazard is exactly the conditional probability of dying at the given time conditional on surviving up to that point.

Table 5 shows that while the cohorts do exhibit some differences, the Wealth Tax had a robust, negative effect on minority firms' survival relative to Muslim firms, especially for the older cohort of 1929. Figure 5 puts the coefficient estimates in perspective by plotting the average marginal effects of non-Muslim dummies. For each minority group, the Wealth Tax lowered survival probability by 12 to 16 percentage points relative to Muslim firms. For younger cohorts, the effect was a bit less severe, but still statistically significant, at about 9 to 12 percentage points. The Wealth Tax hit the older firms particularly hard.

Furthermore, our cohort-specific estimates also show that highly capitalized firms were better able to withstand the tax burden. High capitalization is actually negatively associated with survival across all cohorts. The negative correlation is robust and significant. So is the positive effect for surviving through 1942. The average marginal effect of having a capital class of one step higher was associated with a higher survival likelihood of about 10 percentage points. As unincorporated firms' capitalization was correlated with personal wealth, the results indicate that wealthier individuals could stave off the tax more effectively and protect their firms' assets. This shielding effect might have emerged for two reasons. First, the chaos and arbitrariness with which the tax was imposed prevented the assessors from making sound inferences about taxpayers' wealth. Second, richer individuals or firms with higher capitalization might have faced slacker liquidity constraints, and thus could actually come up with the demanded payments within the required 15-day period.

Finally, corporations were also disproportionately affected by the Wealth Tax, as can be seen in many of our specifications. From Ökte's account, we know that the government tried to impose harsh taxes on corporations. Our results show that the tax targeted specifically the older corporations. The law led to substantial rates of liquidation for corporations over the longer survival window of 9 years, almost exclusively driven by the 1926 and 1929 cohorts. The tax did not have a significant effect on the survival of younger corporations that were established after 1935. Older corporations, like any old company, were likely more productive and larger in size. They were also more likely owned by non-Muslims compared to the newer corporations due to their longer history with this enterprise form (Kuran 2011), suggesting that the assessors were once again concerned with going after minorities' assets. In doing so, the assessors purged large-scale, productive enterprises from the market.

The Wealth Tax led to the liquidation of a disproportionately larger number of minority enterprises relative to Muslim firms. A natural question that follows the change in exit rates is whether a similar impact manifested in entry rates as well. Recall the ethno-religious ownership distribution of entrants presented in Figure 4. The share of Muslims in new business entries fluctuated around 50 percent. However, in 1944, the Muslim share jumped to over 80 percent, before returning to its pre-tax value. The tax thus both removed the existing non-Muslim firms from the market and—directly or indirectly—discouraged the formation of new ones. In addition, as Figure 1 indicates, there was a dramatic increase in the number of startups in 1942 and 1943. The overwhelming majority of these enterprises had Muslim ownership. The historical evidence suggests that there was a direct link between the reduction of non-Muslim entries and the sharp rise in the formation of Muslim startups as the proceeds made from the liquidation of non-Muslim businesses to were used to finance Muslim entrepreneurs. The political environment of 1942 thus created an important blow to Greek, Jewish, and Armenian participation in Istanbul's commercial life.

Perhaps non-Muslim enterprises were able to circumvent the impositions and the Wealth Tax had little long-run effect on the business composition of Istanbul. At the outset, this idea finds some support. The share of non-Muslim firms in new firms between 1944 and 1950 is much closer to pre-tax figures (Figure 4). One can argue that non-Muslim business owners entrusted their firms' assets to Muslim third parties from 1942 to 1944 in order to shield the firm's assets from liquidation. Once the tax was abolished, these non-Muslim entrepreneurs re-assumed the ownership of their firms. This would simultaneously explain the high dissolution rates of non-Muslim firms between 1941 and 1944, the high dissolution rates of Muslim firms between 1944 and 1950, and the high entry rate of non-Muslim firms between 1944 and 1950.

This is inconsistent with several pieces of empirical evidence. First, the government passed the law in haste; the agencies prepared taxpayer lists within weeks.[47] Assessments appeared with no warning. Potential taxpayers did not anticipate any such bill and had little time to shield their assets.

Second, the law contained a provision which required all real estate transactions to produce legal proof that the seller was not liable to pay the Wealth Tax.[48] If the seller had such liability, the tax authorities immediately seized the payment to compensate the seller's tax burden.[49] In Beyoğlu, Istanbul's financial and commercial center, the director of the Revenue Administration put a lien (*ihtiyati haciz*) on any commercial property to prevent tax evasion (Ökte 1951: 106). Despite these legal measures, there are scattered anecdotes that describe how some non-Muslims entrusted their real estate to Muslims for a year. This practice ultimately failed as these Muslim associates refused to give back the entrusted properties.[50] Aktar's analysis of real estate transactions in the first six months of the law shows a massive wealth transfer from non-Muslims to Muslims; there is no direct or indirect evidence indicating a subsequent reversal.[51]

Third, direct evidence shows that there was no link between the dissolved minority firms and the subsequent entrants. We took each firm that last appeared in 1941, then searched for the same firm using its address or telephone number in 1950. We also searched by last name to account for possible changes in the address. Table 6 shows that out of all liquidated non-Muslim enterprises,

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[47]Ökte (1951: 48-50, 219) was informed about the tax only a month before the law passed. The lists were prepared in less than a month following the enactment of the law. See Aktar (1996) for a detailed account of tax assignment and collection process.

[48] For the whole text of the Wealth Tax Law, see Ökte (1951: 217-221). The provision 14 concerns the real estate transactions.

[49] Aktar (1999: 13).

[50] Bali (2012: 89).

[51] Aktar (1999) analyzed the deeds of real estate sales related to Wealth Tax payments in Istanbul between December 28, 1943 and June 30, 1943. He shows that almost 40 percent of the total value of real estate sold in order to pay the Wealth Tax was owned by the Jews, followed by Armenians (30 percent) and Greeks (12.4 percent). Most of the assets sold by non-Muslims were bought by Muslims (67.7 percent) and state/municipal enterprises (30 percent). The average price in these transactions were much higher than the average price in property sales unrelated to the tax liabilities. See Aktar (1999: 14-15).

65 percent could not be located at all. There was no other firm that used the same address or telephone number in 1950, nor was there any other firm that shared last names. 27 percent of all dissolved non-Muslim firms were taken over by completely unrelated enterprises, most of which had Muslim ownership. At least 91 percent of all liquidated minority firms simply did not re-appear, proving that they did not temporarily entrust their assets to Muslims. Our evidence suggests that liquidated non-Muslim enterprises were used to finance the entry of Muslim-owned firms, which quickly dissolved since Muslims lacked the entrepreneurial experience and know-how of their non-Muslim counterparts. After the tax was abolished in 1944, a new generation of non-Muslim businessmen entered the market, leading to a recovery in the share of minority firms in 1950.

7. Consequences

The removal of non-Muslim enterprises had a number of implications for the economy. To the extent that Muslim-owned firms were less productive than non-Muslim enterprises, the tax contributed to the poor TFP. Altug, Filiztekin and Pamuk (2008) demonstrate that low TFP growth was the primary reason of Turkey's poor economic performance in the twentieth century.

The literature has long held the view that religious minorities had better business know-how thanks to decades of entrepreneurial activity (Kuran 2011, Artunç 2015). One determinant of such difference is the differential human capital between these groups. Indeed, disparities in human capital between Muslims and non-Muslims had persisted well into the Republic, as can be seen from the differences of literacy rates across religious groups in the 1935 census. In Istanbul, the literacy rate among Muslims were 5 to 7 percentage points lower compared to non-Muslim minorities.

Our results support these points by further providing systematic empirical evidence. Muslim firms had lower survival rates overall, much more so during periods of recession, even when we control for other covariates. Furthermore, the entry rates of Muslim-owned enterprises also dropped during economic downturns. Given the cleansing effect of recessions and the pro-cyclicality of entrant productivity, we show that Muslim businesses were indeed less competitive and efficient.

The tax also caused the liquidation of old enterprises. Table 7 shows that the share of younger firms, especially "startups" between the ages of 0 and 1, increased substantially; the share of mature firms older than 10 years fell in 1944 compared to the preceding cross-sections. This is simply because the vast majority of old enterprises had non-Muslim ownership: 60 to 65 percent in 1935, 1938, and 1941. Our cohort-specific estimates show that the tax had a severe effect on the older cohorts of 1929 and 1935. As old companies tend to be more productive, their unnecessary liquidation must have been a serious blow to the Turkish economy. This is especially salient in the case of companies established before 1929. As survivors of the Great Depression's cleansing effect, they likely enjoyed higher productivity.

The tax essentially misallocated resources away from productive businesses into unproductive ones, lowering overall productivity. The assets themselves were used inefficiently. The state notoriously mismanaged the commercial and industrial properties it confiscated. For instance, the ships of Banzilay and Benjamen Company were “sold” to the Turkish Maritime Lines, a state enterprise which, lacking the technical expertise to operate these ships, left them to rust (Ökte 1950: 184).

The method of confiscation also eroded confidence in the security of property rights and further discouraged investment, even by Muslim entrepreneurs. Clark (1972) provides anecdotes about how non-Muslims were apprehensive about a repeat of the Wealth Tax; these entrepreneurs concentrated their activities in non-manufacturing sectors and abroad. Our dataset reveals that the share of manufacturing firms in all entrants dropped by 2 percentage points across all ethnic groups and 10 percentage points for corporations in 1944; these shares did not revert back to pre-1944 levels in 1950. At the same time, non-Muslim entrants as well as corporations in 1944 and 1950 were more concentrated in export, which accounted for 21 to 35 percent of new firms in each group. Before 1944, exporters made up only 4 to 13 percent of entrants. By raising political risk, the Wealth Tax delayed industrial capital formation further and well after its one-time imposition.

The Wealth Tax succeeded in fulfilling one of the government’s dual objectives in “restoring” the economy to Muslims through transfers and confiscations. In doing so, it postponed the other goal that arguably vexed the government more: economic modernization and convergence with the West.

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Table 1. *Firm Ownership, Legal Forms, Capital, and Industry, 1926-50*

	Muslim	Greek	Armenian	Jewish
Observations	4353	948	633	1381
Percent	55.82	12.16	8.12	17.71
Enterprise forms (column percent)				
Single	68.76	67.72	73.14	52.28
Partnership	31.24	32.28	26.86	47.72
Distribution of capital class (column percent)				
3rd class	76.7	83.55	81.73	78.65
2nd class	14.71	11.47	12.18	12.96
1st class	6.66	4.55	5.77	7.73
Exceptional	1.93	0.43	0.32	0.66
Distribution of industry (column percent)				
Manufacturing	9.21	7.28	6.64	5.65
Trade	74.13	83.86	87.05	88.05
Textiles & garments	21.85	17.83	28.91	31.79
Food & raw inputs	26.53	29.85	15.80	19.26

Notes: The sample includes all cross-sections of single proprietorships and partnerships, with the exclusion of firms with capital class 4. Industries are not mutually exclusive. Textiles & garments refer to dry goods that include anything from spun cotton to finished clothing, from plastic shoes to leather hats. Food & raw indicates any food item (fresh or processed), any agricultural good (whether food item or industrial input), skin, untanned leather, mohair, etc.
Source: Istanbul Ticaret Odası, *Adres Kitabı*, 1929, 1935, 1938, 1941, 1944, 1950.

Table 2. *Logit Estimates of Survival Across Registries*

	(1)	(2)	(3)	(4)	(5)	(6)
Cross-Section:	1926	1929	1935	1938	1941	1944
Dep. Var.:	1929=1	1935=1	1938=1	1941=1	1944=1	1950=1
Partnership	0.811***	-0.845***	-0.549***	-0.759***	-0.369***	-0.497***
	(0.124)	(0.102)	(0.129)	(0.127)	(0.115)	(0.0960)
PLLC	1.976***	-0.235	-0.247	-0.206	-0.434*	0.334*
	(0.519)	(0.316)	(0.273)	(0.265)	(0.236)	(0.178)
Corporation	2.474***	-0.00872	-0.00379	-0.278	0.170	1.409***
	(0.351)	(0.211)	(0.297)	(0.297)	(0.315)	(0.195)
Capital	-0.314***	0.0659	0.0999	0.0890	0.212**	
	(0.0728)	(0.0666)	(0.0911)	(0.0919)	(0.0956)	
Greek	-0.329**	0.974***	0.290	0.139	-0.467***	1.150***
	(0.139)	(0.154)	(0.180)	(0.186)	(0.160)	(0.150)
Armenian	-0.124	0.979***	0.279	-0.0427	-0.656***	0.999***
	(0.162)	(0.172)	(0.217)	(0.207)	(0.179)	(0.184)
Jewish	0.465***	0.857***	0.227	0.0500	-0.481***	1.068***
	(0.145)	(0.131)	(0.163)	(0.164)	(0.139)	(0.124)
Mixed NM	0.0198	0.596	-1.394*	0.602	-0.374	1.746
	(0.879)	(0.612)	(0.741)	(1.069)	(0.887)	(1.281)
Mixed M/NM	0.613	-0.0586	-0.924*	-0.844*	-0.754	-0.221
	(0.715)	(0.514)	(0.529)	(0.503)	(0.460)	(0.531)
Other	0.704***	0.224	-0.206	0.0889	0.0692	0.908***
	(0.239)	(0.193)	(0.242)	(0.295)	(0.288)	(0.220)
Constant	-0.242	-0.392**	0.803***	1.007***	0.654**	-0.537***
	(0.218)	(0.189)	(0.269)	(0.296)	(0.278)	(0.149)
Observations	2,305	2,242	2,111	2,186	2,415	3,281
Pseudo R2	0.211	0.0833	0.0711	0.0663	0.0641	0.119

Notes: Columns report the coefficient results of logistic regressions where the dependent variable is a dummy variable indicating whether a business survived from one directory to the other, as indicated by each column. Mixed NM refers to partnerships made up of partners from different ethno-religious groups. Mixed M/NM indicates partnerships with at least one Muslim partner and one non-Muslim partner. The category "Other" mostly consists of Europeans. All estimations include industry and establishment-year dummies. Industry categories are banking, insurance, transportation, manufacturing, construction, services (including restaurants, cafés, cinemas, etc.), printing and publishing, mining, commission agents, trade of dry goods (textiles, garments, shoes, etc.), trade of food and raw products (including raw cotton, flax as well as untanned leather, hide, etc.), trade of chemicals, trade of metals and machinery, and trade of fuel. Firms with capital class of 4 are excluded.
Robust standard errors in parentheses.
Significance levels: *** p<0.01, ** p<0.05, * p<0.1

Table 3. *Logit Estimates of Surviving the First 3, 6, and 9 Years*

	(1)	(2)	(3)
Cohorts:	1926, 1935, 1938, 1941	1929, 1935, 1938	1926, 1929, 1935, 1941
Dep. Var.:	3-year survival	6-year survival	9-year survival
Partnership	0.199**	-0.956***	-0.448***
	(0.0854)	(0.118)	(0.0763)
PLLC	0.579**	-0.334	0.125
	(0.226)	(0.282)	(0.242)
Corporation	1.702***	0.141	0.697***
	(0.248)	(0.293)	(0.175)
Capital	-0.183***	0.118	-0.0309
	(0.0538)	(0.0885)	(0.0482)
Greek	-0.309***	0.467**	0.402***
	(0.108)	(0.219)	(0.120)
Armenian	-0.168	0.781***	0.446***
	(0.125)	(0.256)	(0.133)
Jewish	0.258**	0.553***	0.684***
	(0.110)	(0.191)	(0.113)
Tax	0.674***	1.558***	0.532***
	(0.257)	(0.335)	(0.195)
Greek*Tax	-0.573	-0.874**	-0.157
	(0.373)	(0.397)	(0.222)
Armenian*Tax	-0.254	-1.111**	-0.286
	(0.544)	(0.430)	(0.267)
Jewish*Tax	-1.018***	-0.626**	-0.503***
	(0.308)	(0.304)	(0.194)
Constant	0.0437	-0.802**	-1.358***
	(0.165)	(0.365)	(0.151)
Observations	4,324	1,815	4,564
Pseudo R2	0.131	0.115	0.0792

Notes: Columns report the coefficient results of logistic regressions where the dependent variable is a dummy variable indicating whether a business survived a fixed period of time after first appearing in a directory. This fixed period is three years in column 1, six years in column 2, and nine years in column 3. Each estimation includes (but does not report) the full set of industry dummies, establishment-year dummies, other owner characteristics (e.g. mixed companies) and their interactions with the tax shock (e.g. mixed company interacted with tax treatment). The 1935 cohort excludes firms founded before 1933 to keep it consistent with other cohorts.
Robust standard errors in parentheses.
Significance levels: *** p<0.01, ** p<0.05, * p<0.1

Table 4. *First and Last Directories by Ownership*

A. Firms with Muslim ownership

First Directory	Last Directory 1926	1929	1935	1938	1941	1944	1950	N
1926	36.73	35.07	5.81	4.15	3.44	7.58	7.23	844
1929		58.5	8.36	4.90	3.75	12.1	12.39	347
1935			20.78	18.07	13.55	23.19	24.4	332
1938				17.28	14.34	33.46	34.93	272
1941					18.45	53.27	28.27	336
1944						62.56	37.44	1,330

B. Firms with non-Muslim ownership

First Directory	Last Directory 1926	1929	1935	1938	1941	1944	1950	N
1926	42.19	22.05	7.20	4.52	7.04	7.96	9.04	1,306
1929		40.99	12.73	7.14	8.07	9.63	21.43	322
1935			19.09	16.92	19.96	19.52	24.51	461
1938				20.87	18.50	22.44	38.19	254
1941					35.78	27.45	36.76	204
1944						11.89	88.11	227

Table 5. *Logit Estimates of Cohort-Specific Hazard Rates*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Cohort:	1929	1929	1929	1929	1929	1935	1935	1935	1935	1938	1938	1938	1941	1941	1944
Dep. Var.:	1935	1938	1941	1944	1950	1938	1941	1944	1950	1941	1944	1950	1944	1950	1950
Age	-0.162***	-0.0302	0.155	0.0781	-0.133	-0.534***	0.0217	-0.0500	-0.462***	-0.415***	-0.0375	-0.174	0.0266	-0.279**	-0.697***
	(0.0617)	(0.102)	(0.150)	(0.0910)	(0.124)	(0.148)	(0.141)	(0.0926)	(0.151)	(0.132)	(0.0791)	(0.129)	(0.0796)	(0.126)	(0.0471)
Capital	-0.655***	-0.516***	-0.832***	2.438***	-0.123	-0.861***	-1.233***	1.705***	-0.801***	-1.310***	2.364***	-1.124***	2.151***	-0.757***	
	(0.103)	(0.154)	(0.211)	(0.231)	(0.202)	(0.156)	(0.159)	(0.164)	(0.184)	(0.161)	(0.152)	(0.177)	(0.132)	(0.139)	
Ptship	-1.342***	-0.749**	-1.401***	-0.802***	-1.464***	-1.371***	-1.161***	-0.412**	-0.765**	-1.111***	-0.784***	-0.865***	-0.664***	-1.213***	-0.919***
	(0.161)	(0.296)	(0.388)	(0.284)	(0.387)	(0.257)	(0.249)	(0.195)	(0.300)	(0.238)	(0.163)	(0.256)	(0.154)	(0.238)	(0.159)
PLLC	-0.952*	-0.157	-1.284		-0.295	-0.0291	-0.0540	-0.596	-0.175	0.673	-0.199	-0.592	-0.785*	-0.557	-2.408***
	(0.492)	(0.880)	(1.600)		(0.890)	(0.587)	(0.685)	(0.546)	(0.709)	(0.715)	(0.483)	(0.649)	(0.449)	(0.645)	(0.614)
Corp.	0.349	-0.262	-0.414	-6.084***	0.116	1.082	1.682*	-0.416	0.676	2.146**		2.819***	0.635	0.523	-1.364**
	(0.462)	(0.746)	(1.426)	(1.051)	(0.939)	(0.845)	(1.021)	(0.942)	(0.920)	(0.959)		(1.022)	(0.836)	(0.787)	(0.633)
Greek	0.750***	0.374	0.110	-0.945***	1.234**	0.635	0.568	-0.614***	0.191	0.0238	-0.205	0.897**	-0.385*	0.754**	3.496***
	(0.235)	(0.425)	(0.541)	(0.295)	(0.565)	(0.412)	(0.375)	(0.217)	(0.388)	(0.367)	(0.190)	(0.408)	(0.204)	(0.361)	(0.511)
Armenian	1.253***	0.142	0.187	-0.896***	1.788**	0.543	0.376	-0.585**	0.672	-0.0802	-0.256	0.300	-0.327	1.688***	2.466***
	(0.304)	(0.471)	(0.600)	(0.322)	(0.814)	(0.487)	(0.434)	(0.250)	(0.514)	(0.425)	(0.225)	(0.421)	(0.249)	(0.555)	(0.503)
Jewish	1.026***	-0.106	0.0118	-0.684**	0.777*	0.212	-0.0569	-0.434**	-0.0364	-0.350	-0.0347	0.280	-0.531***	0.897***	3.116***
	(0.226)	(0.356)	(0.495)	(0.282)	(0.451)	(0.323)	(0.301)	(0.206)	(0.331)	(0.295)	(0.178)	(0.294)	(0.177)	(0.300)	(0.375)
Other	0.490*	-0.461	1.613	0.132	-0.133	-0.395	0.247	0.0471	0.303	-0.525	0.0593	0.171	-0.0925	1.063**	2.792***
	(0.296)	(0.508)	(1.120)	(0.468)	(0.557)	(0.391)	(0.503)	(0.322)	(0.508)	(0.446)	(0.297)	(0.519)	(0.292)	(0.471)	(0.548)
Banking	-1.237**	-0.653		1.012	-1.625	0.224		-3.738*			-0.652		-3.698		-1.277
	(0.528)	(0.937)		(1.196)	(1.148)	(1.159)		(2.120)			(0.914)		(2.842)		(1.775)
Insurance	1.924***	1.338		0.0733	-0.640	1.071		0.816	1.268		0.620	-0.435	0.488		-0.890
	(0.714)	(0.877)		(1.874)	(0.817)	(1.321)		(0.767)	(1.364)		(1.115)	(1.345)	(1.438)		(1.237)
Transport.	0.441	-0.158	1.032	0.534	2.032*	1.697**	2.151**	0.840**	1.754**	1.783	1.284***	0.0322	1.330***	1.094*	1.199***
	(0.369)	(0.565)	(1.107)	(0.504)	(1.202)	(0.837)	(0.852)	(0.373)	(0.774)	(1.203)	(0.404)	(0.567)	(0.397)	(0.594)	(0.331)
Manuf.	0.762**	0.869*	0.160	-0.156	0.598	0.446	0.395	0.656***	1.300***	0.166	0.734***	1.161***	0.687***	1.105***	1.186***
	(0.302)	(0.511)	(0.529)	(0.392)	(0.555)	(0.469)	(0.374)	(0.254)	(0.478)	(0.339)	(0.202)	(0.370)	(0.206)	(0.333)	(0.234)
Construction	0.199	0.151	-1.396**	-0.183	-0.665	1.618**	0.344	0.182	-1.098**	-0.294	0.0321	-1.136***	-0.0490	-0.881***	-1.149***
	(0.330)	(0.600)	(0.550)	(0.448)	(0.706)	(0.721)	(0.400)	(0.284)	(0.454)	(0.347)	(0.215)	(0.342)	(0.184)	(0.288)	(0.198)
Services	0.911**	0.788	-0.448	-1.274**	-0.962	-0.445	0.344	-0.661*	0.0988	0.138	-0.0364	-1.000*	-0.360	-0.670	-1.232***
	(0.455)	(0.676)	(0.650)	(0.501)	(0.767)	(0.439)	(0.498)	(0.371)	(0.654)	(0.568)	(0.310)	(0.543)	(0.338)	(0.538)	(0.431)
Publishing	-0.0720			1.416	-1.345	-0.102	0.771	1.759***			1.271***	1.710	0.498		1.657***
	(0.588)			(0.971)	(0.833)	(0.834)	(1.091)	(0.572)			(0.474)	(1.145)	(0.638)		(0.620)
Mining	-2.382***									-3.670**					
	(0.821)									(1.529)					
Commission	0.140	1.863*	1.153	0.735**	0.344	-0.0337	0.779	0.746**	-0.178	0.291	1.256***	1.107**	0.923***	-0.216	-1.313***
	(0.327)	(1.042)	(1.077)	(0.366)	(0.608)	(0.502)	(0.635)	(0.311)	(0.496)	(0.481)	(0.236)	(0.485)	(0.256)	(0.368)	(0.343)
Trade dry	-0.495**	-0.396	0.382	-0.613**	-1.458***	0.182	1.539***	0.148	-0.202	0.101	0.590***	0.143	0.234	-0.408*	-0.579***
	(0.209)	(0.353)	(0.545)	(0.309)	(0.429)	(0.332)	(0.393)	(0.219)	(0.336)	(0.301)	(0.181)	(0.283)	(0.172)	(0.247)	(0.142)
Trade food	-0.314	-0.701**	0.320	-0.615**	-1.569***	0.441	0.624**	-0.227	-0.540*	-0.163	0.148	-0.568**	0.0254	-0.758***	-0.782***
	(0.193)	(0.327)	(0.488)	(0.284)	(0.378)	(0.323)	(0.291)	(0.203)	(0.280)	(0.277)	(0.175)	(0.260)	(0.168)	(0.240)	(0.149)
Trade chem.	0.824**		1.661	-0.390	-0.383	0.456	1.398**	0.789***	-0.156	1.187**	0.933***	1.448***	1.145***	1.227***	0.717***
	(0.338)		(1.062)	(0.323)	(0.506)	(0.489)	(0.576)	(0.262)	(0.364)	(0.593)	(0.237)	(0.474)	(0.247)	(0.357)	(0.214)
Trade metals	0.193	1.204*	0.492	-0.0118	-0.463	0.526	0.707	1.047***	0.0671	0.0147	0.977***	0.963**	1.840***	1.143***	0.900***
	(0.296)	(0.646)	(0.695)	(0.379)	(0.513)	(0.503)	(0.468)	(0.309)	(0.414)	(0.418)	(0.255)	(0.434)	(0.236)	(0.335)	(0.217)
Trade fuel	1.566**	0.938	0.363	-2.413***	-2.184**	1.534	0.248	-0.641	-1.332		-0.451	-1.211	-0.500	-1.303*	-0.429
	(0.674)	(0.831)	(1.122)	(0.788)	(1.046)	(1.062)	(0.590)	(0.533)	(0.810)		(0.553)	(0.761)	(0.436)	(0.738)	(0.624)
Constant	2.370***	3.326***	4.168***	-2.802***	2.330***	4.601***	3.778***	-2.449***	3.060***	5.696***	-3.740***	3.235***	-3.577***	2.353***	1.207***
	(0.260)	(0.423)	(0.553)	(0.342)	(0.494)	(0.446)	(0.390)	(0.279)	(0.453)	(0.438)	(0.261)	(0.422)	(0.251)	(0.370)	(0.122)
Obs.	1,165	698	667	639	312	1,182	1,065	979	424	1,471	1,410	620	1,601	628	1,987
Pseudo R2	0.214	0.138	0.192	0.296	0.207	0.189	0.205	0.186	0.159	0.207	0.236	0.220	0.251	0.203	0.315

Notes: Each column reports estimates from a logit regression of whether firms in a given cohort appeared in the relevant directory, conditional on also appearing in the previous. All observations for which the independent variable predicts survival perfectly are dropped and the relevant variable's coefficient is reported blank. The notes of Table 3 describe the industry categories. Robust standard errors in parentheses. Significance levels: *** p<0.01, ** p<0.05, * p<0.10

Table 6. *Matching Firms that Dissolved in 1941-4 and Formed in 1944-50*

	Non-Muslim		Muslim		Total	
	Number	Percent	Number	Percent	Number	Percent
Related	26	8.4	33	14.4	61	10.7
Unrelated	83	26.9	45	19.7	138	24.3
Not found	199	64.6	151	65.9	370	65.0
Total	308	100.0	229	100.0	569	100.0

Notes: The table reports the match distribution of firms that last appeared in 1941 and the cross-section of firms in 1950. "Related" refers to firms that appeared in 1950 under the ownership with at least one of the previous partners or at least one owner with the same last name. "Unrelated" indicates firms that appeared at the same address in 1950 but had no relation with the previous company. "Not found" refers to firms that did not match with any enterprise in 1950.
Source: Istanbul Ticaret Odası, Adres Kitabı 1941, 1944, 1950.

Table 7. *Age Distribution of Cross-Sections (Percent)*

	Cross-sections				
Age	1935	1938	1941	1944	1950
0-1	8.6	9.4	7.4	12.7	12.5
1-5	30.5	30.8	30.3	39.1	32.4
5-10	21.9	21.9	23.9	19.0	29.6
10+	39.0	37.9	38.4	29.3	25.6
Total	100.0	100.0	100.0	100.0	100.0
Obs.	2,135	2,302	2,485	3,335	3,777

Notes: All cross-sections exclude firms with capital class of 4.
Source: Istanbul Ticaret Odası, *Adres Kitabı*, 1929, 1935, 1938, 1941, 1944, 1950.

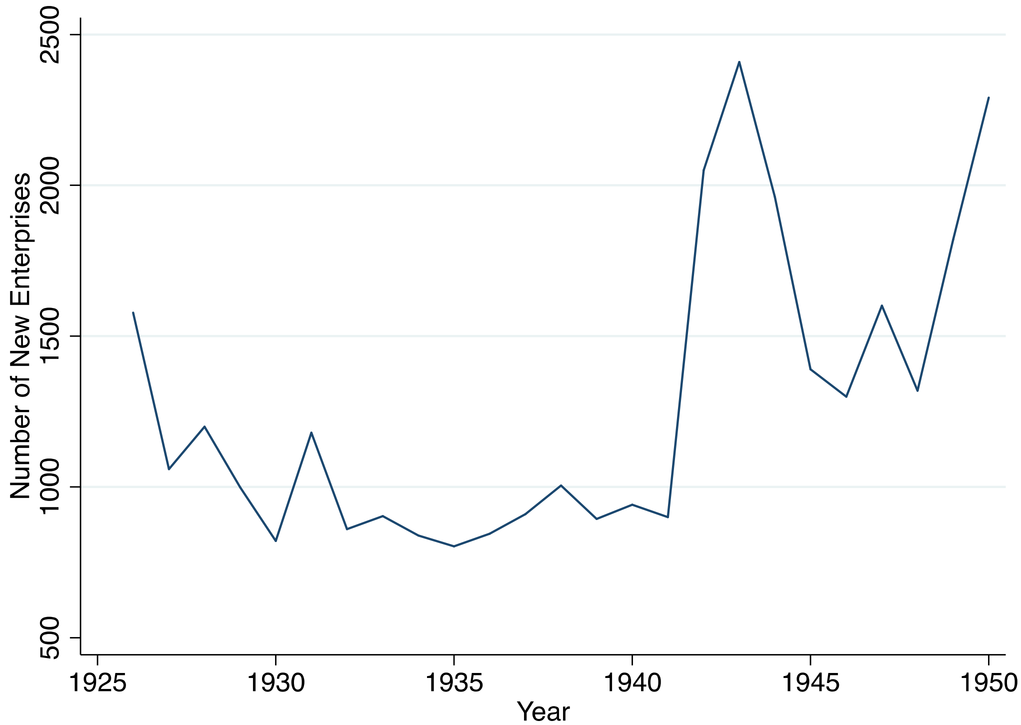


Figure 1. *New Enterprises in Istanbul by Year, 1926-50*

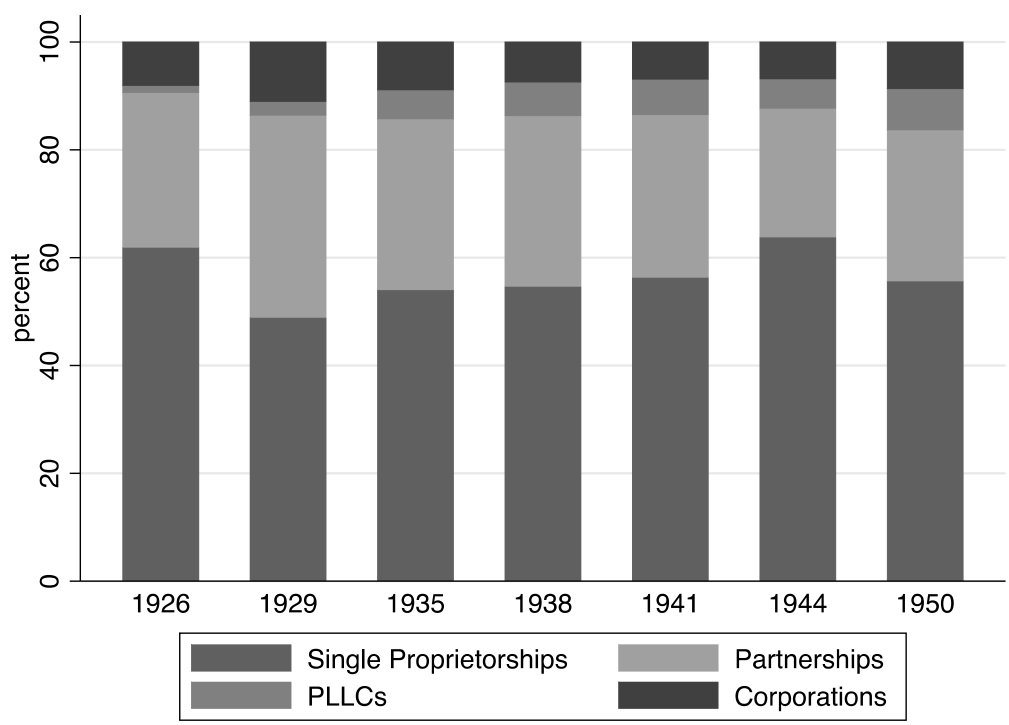


Figure 2. *Enterprise Form Distribution of Cross-Sections*

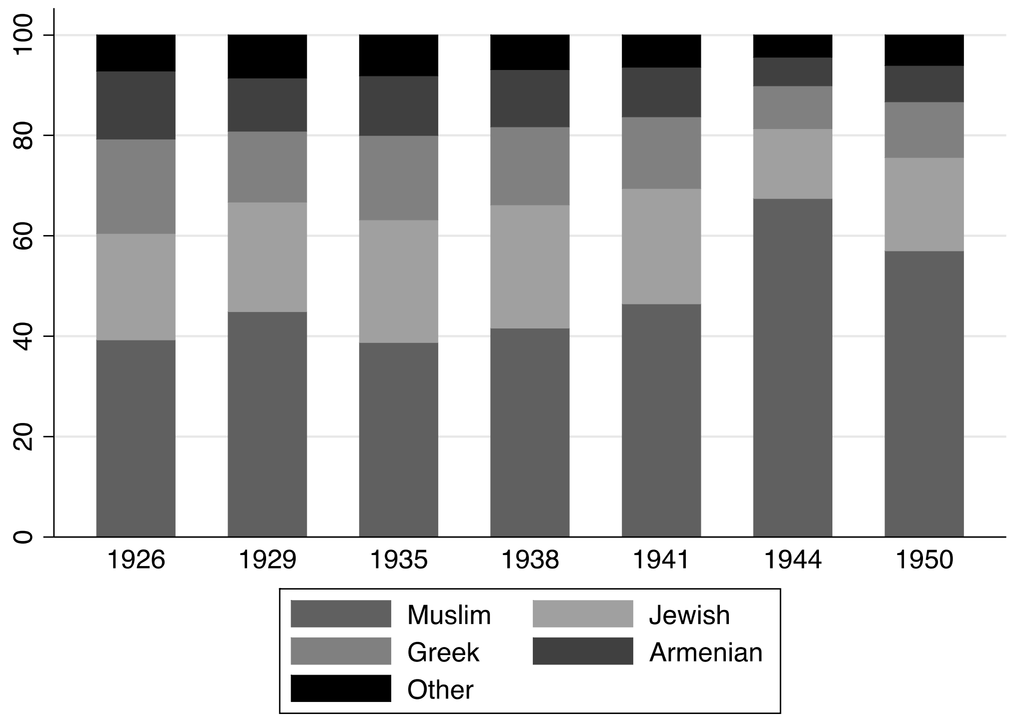


Figure 3: *Ethno-Religious Distribution of Cross-Sections*

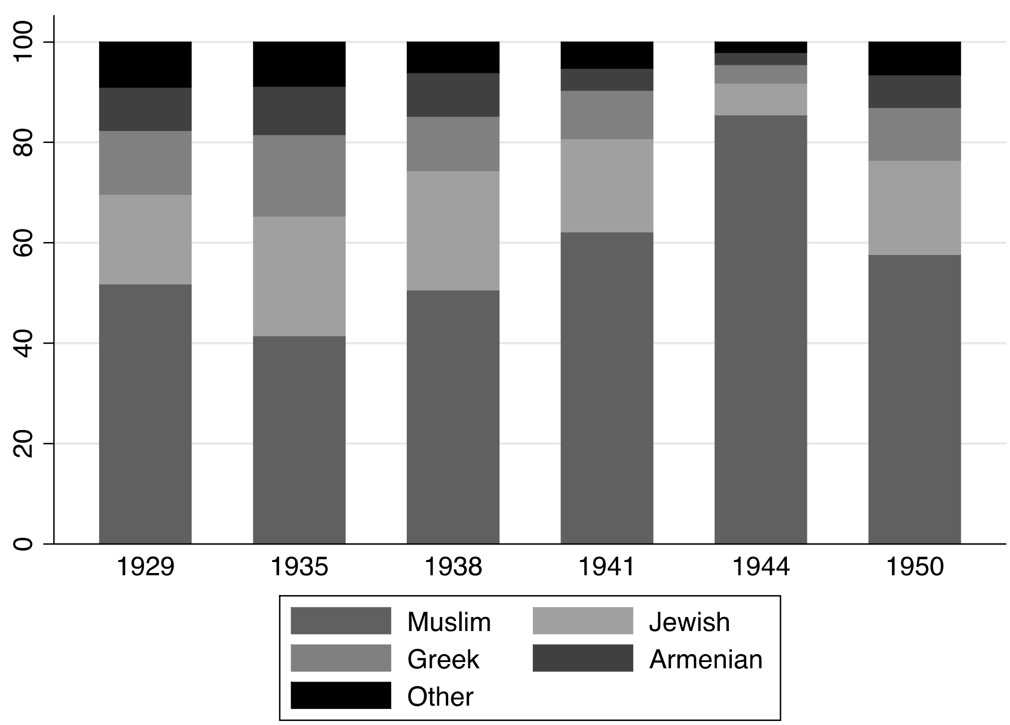
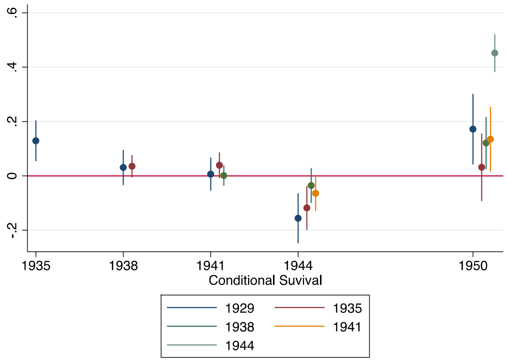
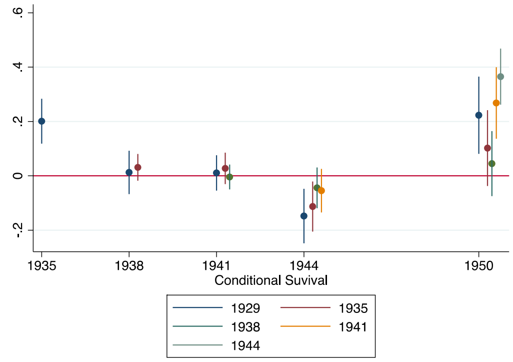


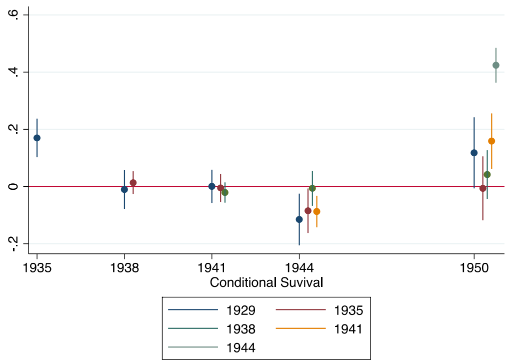
Figure 4: *Ethno-Religious distribution of Entrants*



(a) Greek



(b) Armenian



(c) Jewish

Figure 5: *Estimated Average Marginal Effects with 95percent CI*

Notes: The marginal effects are calculated from the logit estimates of cohort-specific hazard rates reported in Table 5. The bands represent the 95-percent confidence interval of each effect.