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## Partnership as experimentation: Business organization and survival in Egypt, 1910-1949

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## **Partnership as Experimentation: Business Organization and Survival in Egypt, 1910–1949**

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# Partnership as Experimentation: Business Organization and Survival in Egypt, 1910–1949

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## Abstract

The relationship between legal forms of firm organization and economic development remains poorly understood. Recent research disputes the view that the joint-stock corporation played a crucial role in historical economic development, but retains the view that the costless firm dissolution implicit in non-corporate forms is detrimental to investment. We demonstrate the benefits of costless dissolution in an environment where potential business partners are not fully-informed. Using a multi-armed bandit model, we show that an experimentation mechanism creates a spike in dissolution rates early in firms’ lives, as less productive matches break down and agents look for better matches. We test the model’s predictions using a novel firm-level dataset comprising more than 12,000 enterprises established in Egypt between 1910 and 1949. Most partnerships dissolved within two years; afterwards, the risk of dissolution dropped to a lower, steady level. Corporations had much more uniform and lower attrition rates. Companies made up of partners who had been in business before also had flatter dissolution rates, confirming the link between learning and the early break-up of partnerships. The partnership reflected a trade-off between committing to a partner and sorting into potentially better matches.

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# 1 Introduction

What is the relationship between the legal organization of business firms and economic development? Economic expansion requires capital accumulation and investment in productive enterprises over long periods of time. The rules for business enterprises can affect firm longevity and capital accumulation by shaping the incentives to create and invest in firms. Partnerships were long the most common form of firm organization, but this form does not exist independent of its members. Such enterprises can be dissolved at any moment if a partner dies or withdraws. The corporation, on the other hand, exists separately from its owners, and has locked-in capital (Blair and Stout (2005), Stout (2005)). No shareholder can dissolve the firm by withdrawing their investment; the corporation's existence is not conditioned on any single shareholder's willingness to participate.

An influential literature views the corporate form as critical in Europe's and the United States' success in rapid industrialization (e.g., Chandler 1977, Cochran 1977). These works argue that partnerships, because they are at-will, could not lock in capital and undertake long-term investment. Recent research disputes the idea of a universally superior corporate form, but still views costless dissolution as a disadvantage to partnership forms. (Lamoreaux and Rosenthal 2005, Guinnane et al. 2007). We stress an advantage of costless dissolution: it encourages experimentation that can improve enterprise quality. We formalize the problem with a theory of company formation and dissolution, then provide empirical evidence consistent with the model's predictions. This empirical exercise rests on a novel firm-level database composed of some 12,000 partnerships and corporations established in Egypt between 1910 and 1949. Costless dissolution allowed entrepreneurs to experiment with several partners until they sorted into matches with the "right" partner. Only fifty-seven percent of Egyptian partnerships in our data lasted at least two years, compared to ninety-six percent of corporations. For many ventures, high dissolution cost from the start would have locked partners into unproductive ventures or deterred formation of ventures in the first place. For other partners whose joint productivity is sufficiently high, however, the partnership's

ease of dissolution discourages larger investment and cooperation because agents can deviate from investment plans, dissolve the firm, and re-match with a new partner. The corporation's lock-in feature offers these firms a more attractive option. This paper thus provides a new way to think about enterprise form adoption and firm longevity by taking the trade-off between experimentation and commitment seriously.

We start with a model based on a multi-armed bandit framework. Agents match to one another to produce some surplus in each period. Match success rate depends on the match quality, which the partners do not observe but on which they share a common prior. The enterprise's observed success rate informs the partners of the actual match quality. If partners share pessimistic posteriors, they dissolve the firm and move on to new partners. If partners believe the match quality is sufficiently high, they remain in their current match and provide increased investment or effort to the firm. At this point, however, the ease of dissolution becomes a hindrance because it encourages each partner to free ride on the other's effort and then re-match. Thus, partnerships that survive the initial trial period will find it profitable to "tie the knot" and incorporate in order to induce cooperation.

Empirical analysis of the Egyptian multi-owner enterprises supports the model's predictions. Because of the learning mechanism, the risk of a firm's dissolution differed significantly based on the underlying ownership structure. Partnerships suffered particularly high rates of attrition within the first few years of their establishment. Conditional on surviving this period, partnership failure rates dropped and became more uniform. As partners experimented through successive partnerships, they were able to sort into more productive matches. The corporations' risk of dissolution, on the other hand, remained fairly constant throughout the first few years of existence.

The results support the idea that dissolution reflects experimentation. Firms that contain partners who have been in business together before do not dissolve as quickly, because they have prior knowledge about match quality. Firms with family members also endure. A

second and later partnership involving the same family members has no additional survival benefit, showing that information about partners matters more than kin ties.

This paper contributes to a rich literature centered on the impact of institutions on economic performance. This literature typically takes a macro-level approach, regressing a country-level outcome measure such as current GDP per capita on variables intended to measure the quality of institutions.<sup>1</sup> While generating some empirical insights, cross-country studies cannot effectively isolate the channels through which institutions interact with economic agents. The micro approach taken here unpacks these correlations by focusing on a specific legal institution—the menu of enterprise forms—to understand and document the learning mechanism underlying firm formation and dissolution dynamics.

The evolution of legal forms of business organization, and the ease or difficulty of establishing joint-stock corporations have particular significance for business expansion and growth. Chandler (1977) convinced many that the corporation held the key to economic development. Indeed, the corporation confers a number of important advantages to large-scale enterprises that require extensive investment with long maturity. Such advantages include legal personhood, capital pooling, limited liability, entity shielding, and concentrated management (Hansmann and Kraakman 2000). Economic historians, however, have challenged Chandler’s view by showing that partnership forms remained popular in many European economies even when the joint-stock corporation became widely available (Guinnane et al. 2007). However, this entire debate has overlooked two points. First, Chandler’s recent critics have also stressed that the partnerships’ low dissolution costs had detrimental implications for enterprise growth. This work has not explored the point emphasized here, that the partnership offered entrepreneurs a way to experiment with potential partners at relatively low cost. Second, nearly all of the literature on historical enterprise forms has focused on the

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<sup>1</sup>A comprehensive list of papers is beyond the scope of this paper. See Acemoglu, Johnson, and Robinson (2005) and the references therein for an extensive review of this literature.

experience of Western Europe and the United States. We thus build on earlier research by offering a new theory that explains micro-level patterns in a non-European setting.<sup>2</sup>

Until Kuran’s (2011) pioneering book on institutions and economic growth in the Middle East, debates on institutions and development has largely ignored that region. The Middle East formed Europe’s main economic and political competitor in the early modern period, but was surpassed by even the more peripheral European economies in the late 1800s.<sup>3</sup> Much like Owen’s (1991) earlier study of Russian institutions, Kuran argues that the restrictive menu of enterprise forms in the Middle East underlies the region’s economic stagnation. Kuran’s argument stresses the problem of untimely dissolution in partnership forms. Kuran (2011) maintains that egalitarian and inflexible inheritance rules in Islamic law exacerbated the problem of untimely dissolution by prescribing joint ownership of a partner’s assets for his inheritors. Incorporation would have allowed investors to avoid disadvantages. Thus, high barriers to incorporation effectively prevented long-term, large-scale investment.<sup>4</sup>

Kuran’s view of partnerships thus follows earlier work in stressing the costs of easy dissolution. In that he is certainly correct. As the model below highlights, some valuable firms cannot sustain high productivity without costly dissolution. Our empirical work also demonstrates the fragility of the partnership in the region Kuran studies. We differ, however, in stressing that the rapid dissolution of partnerships also offered benefits.

Finally, this paper contributes to the larger theoretical and empirical literature on partnerships and matches. Jovanovic (1979) and Miller (1984), for instance, use a multi-armed bandit framework to analyze competitive labor markets.<sup>5</sup> Our model builds on McAdams

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<sup>2</sup>A nascent literature considers direct links between firms performance and enterprise forms in settings outside of Western Europe. Gregg (2015) shows a link between enterprise forms, scale, and productivity in Imperial Russia using a novel factory-level dataset. Nicholas (2015) demonstrates that joint-stock corporations played an important role in Japan’s business expansion by explicitly establishing a robust relation between firm performance and enterprise forms.

<sup>3</sup>See Özmucur and Pamuk (2002) for historical wage series in Istanbul and Pamuk (2006) for GDP per capita figures in the Middle East.

<sup>4</sup>Indeed, the literature on Islamic partnerships made use of court registers to demonstrate that Islamic partnerships were small (made up of two or three partners on average) and did not last very long. See Çizakça (1996), Gedikli (1998), and Kuran (2011).

<sup>5</sup>See Bergemann and Välimäki (2008) for an overview of bandit problems and their other applications in the literature.

(2011), who formalizes the interaction of matched partners in a repeated prisoner’s dilemma. McAdams generates the same prediction of high rates of early attrition and survivorship bias. We extend the model by introducing the option of incorporation, which we treated as an endogenously-chosen increase in dissolution costs. Earlier empirical studies also address related questions. Topel and Ward (1992) shows a similar pattern of turnover in employment. In his exploration of high firm dissolution rates among young enterprises in the Argentinian and Irish newspaper industries, Levinthal (1991) argues that a sequence of initial success can shield firms from failure later. Our findings echo these results by documenting high mortality among young partnerships. Our results for corporations, on the other hand, imply a different story; corporations do not exhibit the high early mortality found in partnerships. Our evidence is more consistent with the view that organizations exhibit high rates of dissolution early on due to uncertainty regarding matches (and learning about the match quality through initial trial rounds), rather than the protection of initial successes against future shocks.

The rest of the paper proceeds as follows: Section 2 provides the rich historical background of Egypt’s legal institutions during the first half of the twentieth century. Section 3 describes this paper’s large-scale data collection effort and the sources of the dataset. Section 4 develops a theory of partnerships by building on multi-armed bandit models and yields several predictions that it later illustrates with simulations. Section 5 takes these predictions to the data.. Section 6 summarizes the findings with concluding remarks.

## 2 Institutional Background

Increasing European presence in nineteenth-century Egypt led to legal disarray. A concession system gave Europeans extraterritorial rights that included the right to contract under their own law and to litigate using their consular courts. This situation created uncertainty about just which law would apply to contractual relations between natives and Europeans,



or between Europeans of different nationalities.<sup>6</sup> The Egyptian government attempted to rectify this problem in 1875 by introducing a new court system: the Mixed Courts. The new legal system operated independent of the executive. The Mixed Courts applied a slightly modified form of French law, followed French legal procedure, and held jurisdiction over all commercial and civil cases involving people of different national jurisdictions. The new courts also had jurisdiction over Egyptians forming companies. The new courts were established in Alexandria, Cairo, and Mansoura. Judges included both Europeans and Egyptians. Both contemporaries and more recent observers view the Mixed Courts as impartial and independent.<sup>7</sup> The government abolished the Mixed Courts in 1949 as part of a larger plan to nationalize the legal system.

These reforms did not abolish legal pluralism, but they did end both consular and religious courts' role in commercial issues. Establishing a clear demarcation across cases and litigants prevented opportunistic forum shopping.<sup>8</sup> Both locals and Europeans relied on the Mixed Courts for their commercial affairs.<sup>9</sup> The Mixed Courts dealt with a range of commercial issues, including company law. Any multi-owner enterprise operating primarily in Egypt had to register with the Mixed Courts and fell under the Courts' jurisdiction. The dataset described below thus comes as close as possible to spanning the entire population of multi-owner enterprises in Cairo, Alexandria, and Mansoura.

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<sup>6</sup>Egypt was an autonomous province within the Ottoman Empire until the Empire's dissolution after World War I. Artunç (2014) provides a comprehensive analysis of Ottoman legal pluralism.

<sup>7</sup>Grigsby (1896) presents a contemporary account of the Mixed and Native Courts. Herreros (1914) describes the judicial system at the beginning of the twentieth century. See Hoyle (1991) for a more recent description.

<sup>8</sup>Artunç (2014) shows that legal pluralism can give rise to inefficiencies if agents can unilaterally invoke choice of law *ex post*. This kind of rent-seeking creates enforcement uncertainty and reduces contract credibility.

<sup>9</sup>This is consistent with the model of legal pluralism Artunç (2014) presents. The Mixed Courts held high prestige, the European courts respected the Mixed Courts' decisions, and the Native Courts closely mimicked the Mixed Courts. Hence, the Mixed Courts enjoyed higher enforcement reliability. Wood (2011) shows that jurisdictional conflicts arose frequently within the pluralistic system of Mixed, Native, Consular, and religious courts until the early 1900s, stabilizing in 1912–13; see pp. 46–51. Scott (1907) describes that since Mixed Courts held jurisdiction over any commercial case with a “mixed interest” (i.e. involving stakeholders with different nationalities), partnerships were routinely included under their jurisdiction.

Because the Mixed Courts applied the French commercial code, they introduced new enterprise forms to the Egyptian economy. Table 1 shows these forms, which included *société en nom collectif* (general partnership), *société en commandite simple* (limited partnership), *société en commandite par actions* (limited partnership with tradable shares), and *société anonyme* (corporation). General partnerships had two or more general partners, all of whom had unlimited liability. Any one of these partners could participate in company management. Limited partnerships consisted of at least one general partner and one “special” or limited partner. General partners had unlimited liability and control rights over assets; limited partners were only liable up to the amount they invested and had no rights over the firm’s management. Both general and limited partnerships could contract flexibly on cash-flow and control rights, subject to these limitations. Limited partnerships with tradable shares resembled limited partnerships, except that the limited partners’ capital was divided into shares which could be traded on the stock market. Agents were free to choose any of these forms when they wrote a partnership contract. Forming a corporation, however, required the Egyptian government’s permission. Before the Mixed Courts’ introduction, European enterprise forms were only available to European subjects under consular jurisdiction. The native population, on the other hand, had been using Islamic partnerships until the transplantation of this French-style commercial code.

### 3 Data and Sources

This paper’s empirical results rely on a new, firm-level dataset based on the activities of the Mixed Courts. The database includes the registration and sometimes dissolution of more than 12,000 firms with 28,000 individual partners. This section describes the sources and provides information necessary to the discussion here and in Section 5. The Appendix provides more information on data construction.

Starting in November 1910, Egyptian Mixed Courts started publishing a monthly periodical in French, *Gazette des Tribunaux mixtes d'Égypte*. Another newspaper, *Journal des Tribunaux mixtes* started in November 1921. This second publication terminated on March 31, 1949, which marks the end of the dataset.

*The Gazette* and *Journal* printed (among many other things) extracts of partnership agreements, modifications to existing agreements, and dissolutions registered at the Mixed Courts. The law required partnerships to register their contracts at the local court, and publish summaries of these contracts in the newspapers. Companies risked annulment if they did not register partnership agreements or modifications within two weeks of registration. We observe examples where the courts annulled partnerships retroactively for not registering and publishing the partnership contract. The dataset thus captures the universe of multi-owner enterprises organized under the Mixed Courts' jurisdiction. The law mandated that the published extracts contain the following information: company name, enterprise form, general partners' names, designation of partners who had authorization to manage or administer the company and sign for the firm, capital provided by shares or by limited partners, and the firm's start and termination date, if any. Corporations published their entire articles of association.<sup>10</sup>

Our empirical tests require both the firm's formation date and dissolution date. Firm histories can be censored on both sides. Businesses established before October 1, 1910 might be dissolved during our period of analysis; we do not know their formation date. Some firms established in this period dissolved after March 31, 1949. For consistency, we focus on enterprises that were established between these two dates. We then match dissolution acts to initial partnership agreements and censor each surviving company at the end of March 1949.

De-registration information is not as complete as other parts of the database. By law, parties had to announce their firm's dissolution. The law did not, however, specify how

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<sup>10</sup>See articles 54–58 of the Mixed Courts' commercial code, Egypt (1907) pp. 156–7.

this rule was enforced. We can impute missing dissolution dates in two ways. Many firms stated a fixed duration in their articles of association. Many probably did not de-register when they reached that date; if we were willing to assume that all firms operated until the end of their original contracted period, we could assume a dissolution date from the contract terms. We prefer instead to rely on information about operating firms taken from the *Egyptian Directory*, which was published annually from 1907 well into the 1950s. These volumes provide a comprehensive list of all commercial enterprises operating in various cities in Egypt. By cross-checking every enterprise without a dissolution date against firms listed in the directories, we determined the last year a firm appeared to be in operation. We assume that if a firm appeared in the directory in 1930 but not in 1931, for example, it wound-up operations in 1930. We assume that companies that had no de-registration dates but appeared in all directories up to and including the 1950 directory survived.

The database also contains individual-level information about firm owners: general partners in partnerships and founding subscribers in corporations. We use owners' names to code ethno-religious identifiers for each individual (e.g. Muslim, Jewish, Greek). We also matched partners across multiple partnerships using their names, cross-checking with the information in the commercial directory. Using each individual's last name, or their fathers' names (usually specified as part of the individual's name), we also identify family firms. We consider an enterprise a family firm if more than four fifths of all general partners were related in a general partnership, if more than half of shares were owned by members of the same family in a corporation, or if the firm called itself a family company by using an identifier such as "sons," "brothers," or "cousins." This procedure produces an undercount of family firms, because we cannot identify son-in-laws or married sisters. Few enterprises list limited partners by name, so we also cannot identify some family connections of this type. While most firms reported their capitalization in nominal Egyptian pounds, others used either pounds sterling, French francs, or Ottoman pounds. We convert these values to pounds sterling using exchange rates cited in Denzel (2010), Owen (1993), and Pamuk

(2000). These calculations use the historic opportunity cost method to express capitalization in real terms. Many firms did not report their capitalization in the published extracts; we discuss this limitation in detail in Section 5 and in the Appendix.<sup>11</sup>

The dataset includes 12,365 partnerships and corporations established between 1910 and 1949. For all of these firms, information about the number and identity of general partners is available. About fifty-four percent of the sample also reported their initial capitalization. Some fifty percent of companies formed from 1910 onwards reported dissolution within the period this paper examines. We know, from the directories, that nearly seventy percent of the firms that did not de-register survived the period of observation. For the rest, a dissolution date is imputed using the last date they appear in the commercial directory.

### 3.1 An Overview of Egyptian Enterprises

The newly-constructed dataset allows us to establish five new facts that motivate some of the modeling choices in the theory and empirical sections. First, company formations and dissolutions varied across the business cycle. Second, the partnership was by far the most common enterprise form. Third, most companies had only two partners and small capitalization. Fourth, contrary to the previous literature’s claims, enterprise-form and size distributions in Egypt differed little from European patterns. Fifth, the vast majority of partners in a given firm came from the same ethno-religious group. Ethnically heterogeneous partnerships were rare, and family firms accounted for a substantial proportion of enterprises. Table 2 summarizes these findings.

Figure 1 shows the evolution new multi-ownership firms and dissolutions between 1911 and 1948.<sup>12</sup> The formation and dissolution of firms co-moves with macroeconomic condi-

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<sup>11</sup>We use pounds sterling as of 2010, <http://www.measuringworth.com> to adjust asset size in real terms. Historic opportunity cost is the most appropriate method for comparing firm capitalization. This method uses the GDP deflator to compare the cost index of all output in the economy. The British historic opportunity cost is suitable in this setting given Egypt’s close integration with the British economy and currency; see Yousef (2002).

<sup>12</sup>We omitted firms founded in 1910 and 1949 from this graph since the dataset starts in November 1910 and ends in March 1949.

tions. Periods of economic upturn coincided with a spike in the formation and dissolution of new companies. Similarly, fewer firms formed or dissolved during economic downturns. In other words, peaks in the business cycle accompanied an expansion in, which declined during busts. In a separate paper, Artunç (2017) examines this relationship econometrically and shows that firm cohorts established during recessions were different from those established during expansions in many dimensions, including entrant rates, capitalization and number of partners. More precisely, the elasticity of changes in entry rates with respect to fluctuations in cotton prices was 0.30. The elasticity of capitalization with respect to changes in cotton prices was -0.33. Cotton prices had no significant impact on aggregate dissolution rates. Expansionary economic periods led to a contemporaneous expansion in the entry rate, predominantly selecting on less heavily capitalized companies. Most companies dissolved quickly regardless of how well the economy was doing. In this paper, we show an important determinant of this empirical pattern: most partnerships dissolved within two years of their formation due to experimentation and learning independent of economic conditions. This provides a new way to think about commercial expansion and contraction across business cycles.

Figure 2 plots the distribution of companies across enterprise forms between 1916 and 1945. Just as in Europe, most Egyptian firms organized as general or limited partnerships.<sup>13</sup> We see little systematic evolution in the choice of enterprise form over time. Overall, 53 percent of all new firms formed as general partnerships, and 41 percent as limited partnerships. Not surprisingly, corporations were less common than general or limited partnerships, reflecting the costly process of acquiring permission to incorporate from the government. Despite the higher burden put on the organizers of corporations, that form's prevalence in

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<sup>13</sup>Guinnane et al. (2007) show that ordinary partnerships accounted for 60 percent of all new companies in France even after the government introduced general incorporation in 1863. In Prussia (and later Germany), partnerships accounted for more than 80 percent of new firms until 1902. See pp. 702 and 710–1.

Egypt differed little from what we observe in Germany and France in the late nineteenth and early twentieth centuries.<sup>14</sup>

We have two ways to measure firm size: the number of partners and the initial capitalization. Partner numbers and capitalization affect the firm's chance of survival. First, any single general partner can force dissolution in a partnership. We might expect the risk of dissolution to increase with the number of general partners.<sup>15</sup> Second, some partnerships might break up early because of low capitalization. Small firms might be more vulnerable to negative shocks than large companies. Third, on a related point, one might think that the firm survival rates reflect the concentration of enterprise forms in specific industries.

Table 2 shows that most firms were small, with two general partners on average. However, there were some larger firms at the upper tail. Table 3 unpacks these averages by reporting the size distribution by different legal forms. Seventy-one percent of all general partnerships had two general partners, most of whom had joint control and management. Thus, the modal general partnership consisted of two agents who, as a matter of default rules, shared control rights over the company. In comparison, most limited partnerships involved one general partner and one limited partner.<sup>16</sup>

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<sup>14</sup>See Guinnane et al. (2007) for the breakdown of new companies by enterprise form. The data contain a few private limited liability companies (PLLCs) registered in Alexandria and Cairo. The Mixed Courts did not recognize the PLLC as an enterprise form. The courts treated one of these PLLCs as being one of the three enterprise forms the code recognized; see *Gazette des Tribunaux mixtes d'Égypte*, v. 5, pp. 145–6; v. 12 pp. 17–8. It is uncertain what kind of legal status this GmbH in the data actually enjoyed. After 1929, more firms were registered as PLLCs, all of which were put under the jurisdiction of English law. Given their uncertain position, we exclude PLLCs from this analysis.

<sup>15</sup>In societies such as Egypt in this period, mortality alone would dissolve many partnerships. A rough calculation from the UN model life tables “general, male” ([http://www.un.org/esa/population/techcoop/DemMod/model\\_lifetabs/Model\\_LT\\_Annex3.pdf](http://www.un.org/esa/population/techcoop/DemMod/model_lifetabs/Model_LT_Annex3.pdf)) provides an illustrate. For a mortality level corresponding to an expectation of life at birth of 45 years, a considerable over-estimate for this time and place, there would be a 14 percent chance of at least one of two 40 year-old males dying within five years. With three partners at that age, the probability increases to 21 percent. For 60 year-old males, the 31 percent of two-person and 43 percent of three-person partnerships would lose at least one owner to death. These calculations treat the mortality risk of each partner as independent.

<sup>16</sup>Although many partnerships specified the number of limited partners investing in the firm, many did not. The law itself does not mandate the disclosure of such information. Article 56 of the commercial code prohibits firms from reporting limited partners' identity in the published extracts; Egypt (1907), p. 157.

European partnerships differed little in size from their Egyptian counterparts.<sup>17</sup> Partnerships organized under Islamic law also differed little in size and capitalization from what we see here.<sup>18</sup> Switching to European law did not alter partnership size, at least in Egypt.

The capitalization data requires caution because of possible sample selection issues, but one can infer patterns from what is available. Table 2 shows that partnerships on average had much smaller capitalization than did corporations. Variation in capitalization within an enterprise form was also considerable. Figure 3 shows the capitalization distribution of multi-owned enterprises by legal form, expressed in the natural logarithm of pounds sterling (2010 prices). A wide range of firms, from small grocery stores to large land companies, preferred to organize their business as partnerships. The two largest firms in the dataset organized as a general and a limited partnership. The two partnership forms had a higher concentration of firms in the lower tail of capitalization, however. The largest firms overall organized as corporations, followed by share partnerships.

Table 2 shows a heavy concentration of commercial companies in all enterprise forms, though they were much more common among partnerships than corporations. The choice of enterprise forms differs little across sector. Three exceptions, cotton manufacturing, finance, and land companies, did attract a higher share of corporations, likely due to the larger capital needs of these industries.

## 4 A Model of Partnerships as Experimentation

This section develops a model based on a multi-armed bandit framework. Agents match anonymously and each pair is an “arm” that produces a flow return every period. Multi-

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<sup>17</sup>Lamoreaux and Rosenthal (2005) show that out of the 4,549 French general partnerships registered in the Paris newspaper of record, *Gazette des tribunaux*, between 1832 and 1843, about 80 percent consisted of 2 partners and 15 percent comprised 3. Similarly, out of the 1,167 *sociétés en commandite simple* registered in the same gazette, 65 percent featured a single general partner, and 30 percent had 2 general partners. See pp. 38–39.

<sup>18</sup>Kuran (2010) corroborates the previous literature on the subject by providing more systematic evidence on partnerships in seventeenth-century Istanbul; also see Inalcik (1969) on partnerships in Bursa, and Gedikli (1998) on more general organizational practices in the sixteenth and seventeenth-century Ottoman Empire.



armed bandits have a number of applications, including research and development, investment, as well as labor markets.<sup>19</sup> The model here adapts the classic multi-armed bandit approach to better understand dynamics of partnership formation and dissolution. We apply this framework to the partnership setting, offering two innovations. The choice of legal form pins down dissolution costs, and we endogenize dissolution costs by allowing partners to choose their legal form. The learning mechanism described by the multi-armed bandit setting explains the otherwise puzzling high attrition rate for young partnerships. An alternative account – that dissolutions reflect idiosyncratic shocks – might account for the higher dissolution rate for partnerships, but not the age-pattern of that risk. The model uses this insight to demonstrate that low dissolution costs present a trade-off: they aid learning and experimentation, allowing agents to try out several partners and sort into more productive matches. But low dissolution costs can limit investment in companies that are good matches by reducing incentives for within-company cooperation.

We begin with a benchmark setting in which agents in a partnership simply receive flow payoffs with some probability. Later, we enrich the model by allowing agents to play a dynamic prisoner’s dilemma. This extension establishes a trade-off between ease of dissolution and cooperation. New matches at the “exploration” stage find low dissolution costs desirable, since the agents prefer to dissolve and move on to better matches if they find the current match to be of poor quality. Established matches at the “exploitation” stage, on the other hand, prefer higher dissolution costs to discourage partners from taking their outside option and thus encourage cooperation and investment within that match. Propositions 1 and 2 formalize these results. We present a simple Monte Carlo to show the shape of the hazard functions for dissolution and to better illustrate the comparative statics.

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<sup>19</sup>See Bergemann and Välimäki (2008) for an overview of the framework’s applications.

## 4.1 The Benchmark Model

The economy has a continuum of identical agents. Agents would like to form pairs to undertake a joint venture, which produces a surplus that depends on partners' complementarity.  $\theta$  denotes each pair's complementarity and is identically and independently drawn from a distribution  $F$  with full support on the unit interval. Neither partner is informed about the true value of  $\theta$ , but the distribution function  $F$  is common knowledge. Let  $t$  index the firm's age. A partnership's flow of rewards follows an i.i.d. Bernoulli process; each partner receives reward  $x_t = 1$  with probability  $\theta$  and nothing otherwise. There are infinitely many discrete periods. Agents share a common discount factor  $\delta \in (0, 1)$  over time. The timing in each period is as follows:

1. Each agent in an existing partnership decides whether to dissolve the firm or not. Each agent incurs a cost  $d > 0$  if they dissolve the partnership.
2. Every agent without a partner is matched. Matches are one-to-one.
3. For each new match,  $\theta$  is drawn.
4. Each partner receives payoff  $x_t$ , which follows a Bernoulli process with the unobserved parameter  $\theta$ . Agents observe their payoffs and update their posteriors.

The equilibrium concept is Markov Perfect in symmetric strategies. Let  $\pi_0$  denote the common prior belief on  $\theta$ . The state variable in each period is the posterior belief  $\pi$  on  $\theta$ .  $\pi$  describes agents' best prediction of what  $\theta$  is based on the initial distribution  $F$  and the string of successes and failures they have observed. Agents use Bayes' Rule to update the posterior beliefs on the distribution in each period the partnership is active.  $\pi$  is a sufficient statistic that summarizes the information agents share after  $t$  trials. Strategies are defined as  $\sigma : [0, 1] \rightarrow \Delta(\{0, 1\})$ , a mapping from posterior expectations into a mixture over leaving the partnership 0, or doing one more trial, 1.

In a multi-armed bandit problem, the Gittins index identifies the constant stream of rewards for which an agent is indifferent between doing one more trial in the experiment or stopping to receive the constant reward forever. Thus the Gittins index describes the optimal strategy in this environment.<sup>20</sup> Let  $m$  be some real constant.  $V(\pi, m)$  denotes the agent's value function given posterior  $\pi$  :

$$V(\pi, m) = \max \left\{ \frac{m}{1-\delta}, \mathbb{E}[x + \delta V(\pi', m) | \pi] \right\}. \quad (1)$$

The Gittins index  $m(\pi)$  solves

$$\frac{m(\pi)}{1-\delta} = \mathbb{E}[x + \delta V(\pi', m) | \pi]. \quad (2)$$

The partnership formation and dissolution model described here pertains to an environment where an agent chooses between infinitely many arms with no recall. Partners can either continue experimenting with the current arm (their partnership), or switch to a completely new arm (form a new partnership with a different match). The associated Gittins indices are  $m(\pi)$  and  $m(\pi_0)$ , respectively, where  $\pi_0 := \mathbb{E}\theta$  denotes the prior belief on  $\theta$  at the time of the match. Note that each unsampled arm, or partnership, is identical from each agent's perspective. The current partnership continues so long as  $m(\pi) / (1-\delta) > m(\pi_0) / (1-\delta) - d$ . Proposition 1 characterizes the unique Markov Perfect equilibrium in symmetric strategies.

**Proposition 1.** *In the unique Markov perfect equilibrium of the game, agents dissolve the partnership if the Gittins index associated with their match is less than the Gittins index of a potential match.*

*Proof.* The proof follows from Bergemann and Välimäki (2001), who show that the Gittins index rule is the optimal policy for a multi-armed bandit model with infinitely many arms and a one-time switching cost. □

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<sup>20</sup>See Gittins and Jones (1974) for the original formulation.

Proposition 1 shows that in the unique symmetric equilibrium, each partnership goes through a trial period. Partners who observe enough failures among the successes become pessimistic about their association's future prospects and dissolve the partnership.

The model implies considerable partnership churning, and that churning is optimal. If partners could not dissolve these associations at will, they might become stuck in unproductive ventures for some periods of time. The unproductive ventures would depress overall surplus in the economy due to the opportunity cost of unrealized but more productive matches. As the dissolution cost  $d$  increases, partnerships become more stable, as the Gittins index for a new match  $m(\pi_0) / (1 - \delta) - d$  falls. With higher dissolution costs, each matched pair must observe relatively more failures before dissolving the partnership. High dissolution costs lock the parties into associations that they would have optimally dissolved otherwise, reducing the chances of a more complementary match.

## 4.2 Inducing Investment

All dissolutions in the benchmark model are timely and beneficial. The corporation becomes a dead-weight loss and commitment is worthless. Partners remain in their current match so long as that match's expected productivity exceeds that of other potential matches. This subsection provides a richer framework by introducing strategic actions in the stage game, providing a clear trade-off between ease of dissolution and commitment.

Suppose that in each period, agents can decide whether to undertake a costly investment action. Investment decisions are uncooperative and the investing partner alone bears the cost  $c > 0$ . If neither agent undertakes the investment, the flow payoffs are  $x_t$  for each agent. If only one agent invests, the partnership produces the flow  $rx$  for both, but the investor pays a cost of  $c$ . If both agents invest, each receives  $Rx - c$ . The flow variable  $x$  follows the Bernoulli process depending on the unobserved match quality  $\theta$ .

The timing in each period is adjusted as follows:

1. Each agent in an existing partnership decides whether to dissolve the firm or not. Each agent incurs a cost  $d > 0$  if they dissolve the partnership.
2. Every agent without a partner is matched. Matches are one-to-one.
3. For each new match,  $\theta$  is drawn.
4. Agents simultaneously decide whether to invest or not invest.
5. Each partner receives payoff  $x_t$ , which follows a Bernoulli process with the unobserved parameter  $\theta$ . Agents observe their payoffs and update their posteriors.

**Assumption 1.**  $c/2 < R - r < c$  and  $R - 1 > c$

Assumption 1 ensures that for partnerships with high enough quality  $\theta$ , joint investment is socially efficient. Since the stage game is a prisoner's dilemma, however, the partnership might not be sustained outside of a repeated game. We now have a situation in which commitment has value. Later on, we show that with sufficiently small dissolution cost, match-specific punishment mechanisms cannot induce cooperation since the defecting party can just take his outside option. We assume that partners can observe investment decisions (hence, future plays can be conditioned on the history of investment decisions), but are unverifiable and thus cannot be enforced by a third party.<sup>21</sup>

Throughout the rest of this analysis, we focus on subgame perfect equilibria in pure, symmetric strategies. In this setting, Markov Perfection has no meaningful effect since the payoff-relevant state, namely the posterior belief  $\pi$ , is insufficient to sustain cooperation as an equilibrium.<sup>22</sup> At the cost of creating a multitude of equilibria, subgame perfection allows

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<sup>21</sup>The model presented here is closely related to McAdams (2011), who proves the existence of a joint-welfare maximizing subgame perfect equilibrium in a more general repeated prisoner's dilemma with heterogeneous agents and re-matching when partnership productivity is serially correlated. Our posterior belief  $\pi$  resembles the payoff-relevant random variable in McAdams (2011). But we make the learning component more explicit and focus on the dissolution costs. We also introduce an explicit choice to raise the cost of dissolution by deciding to organize the firm as a partnership or a corporation.

<sup>22</sup>Markov Perfection is still viable if the timing is adjusted appropriately by allowing current investment decisions to affect future payoffs (in particular, by making stage payoffs exclusively depend on lagged investment decisions) or by introducing asynchronous investment actions to which agents can react. See Maskin and Tirole (1988) as an example.

history-dependent strategies that can facilitate cooperation in equilibrium. We focus on the subgame perfect equilibria that can most easily sustain investment, which is also the ex ante welfare maximizing equilibrium.

The expanded model becomes a multi-armed bandit superprocess. Each agent is not merely experimenting with each “arm” but also considers an action that affects the arm’s payoffs. Whittle (1980) shows that the Gittins index policy is usually not optimal for multi-armed bandit superprocesses unless the dominant action in each arm is independent of the “retirement” value, i.e. the constant stream of rewards to which one compares each arm’s continuation payoff. The independence condition fails in this current model, however, as the optimal decision to invest depends on the state variable  $\pi$  and the outside option. Regardless, the equilibrium still features a similar cutoff strategy.

Before exploring the more general case, we use a simplified version with two types to illustrate the basic insight. Suppose  $\theta \in \{L, H\}$  where agents share a common prior that  $\theta = H$  with probability  $\pi_0$ . Matches of high quality  $H$  produce a positive surplus with probability  $q$ . Low matches, those with  $\theta = L$ , never produce a positive surplus. Thus, as long as partners observe a failure, beliefs  $\pi$  decay according to Bayes’ Rule:  $\pi' = \pi(1 - q) / (1 - \pi q)$ . If there is a success, then agents know the match quality to be  $H$  with certainty.

Suppose there is no investment action at all. Then the setting reduces to a simpler version of the previous environment. Let  $V(\pi)$  denote the continuation payoff of an agent in equilibrium conditional on belief  $\pi$ . The continuation payoff of each agent can be written as

$$V(\pi) = \max \left\{ V(\pi_0) - d, \pi q + \pi q \delta V(1) + (1 - \pi q) V\left(\frac{\pi(1 - q)}{1 - \pi q}\right) \right\}$$

where  $V(1) = q / (1 - \delta)$ . This is essentially an optimal stopping problem and dynamic programming reveals a cutoff  $\bar{\pi}_d$  below which agents dissolve the partnership and re-match. The critical  $\bar{\pi}_d$  can be recovered by setting  $V(\bar{\pi}_d) = V(\bar{\pi}_d(1 - q) / (1 - \bar{\pi}_d q)) = V(\pi_0) - d$

and solving for  $\bar{\pi}_d$ :

$$\bar{\pi}_d = \frac{(1 - \delta)(V(\pi_0) - d)}{q[1 + \delta(V(1) - V(\pi_0) + d)]}.$$

Both  $V(1)$  and  $V(\pi_0)$  remain constant across all matches regardless of their current posteriors. In the extreme case of  $d = 0$ , agents immediately dissolve the firm if their first observation is a failure.

Suppose now that agents can undertake an investment as described above. Assume that  $\pi_0 q(R - 1) - c < 0$ , that is, investment is not efficient for any match if the match has no information in addition to the common prior. Sufficiently low dissolution costs with the re-matching option deters partners from investing even after they observe a success. Again, start with the extreme case of  $d = 0$ . If agents invest on the equilibrium path when  $\pi = 1$ , then  $V(1) = (Rq - c)/(1 - \delta)$  and

$$V(\pi_0) = \pi_0 q + \pi_0 q \delta \left( \frac{Rq - c}{1 - \delta} \right) + (1 - \pi_0 q) \delta V(\pi_0)$$

which we can solve to find

$$V(\pi_0) = \frac{\pi_0 q [1 - \delta(1 - Rq + c)]}{(1 - \delta)[1 - \delta(1 - \pi_0 q)]}.$$

Note that investment actions following the realization of a success raise the value of both this match and possible re-matching, since  $V(\pi_0) = \pi_0 q^2 \delta / \{(1 - \delta)[1 - \delta(1 - \pi_0 q)]\}$ . Defection from investment can only be deterred if the stage-game benefit followed by the continuation payoff of taking re-matching is less than the continuation payoff of complying with investment. That is, an equilibrium in which both agents invest requires

$$rq + \delta \left\{ \frac{\pi_0 q [1 - \delta(1 - Rq + c)]}{(1 - \delta)[1 - \delta(1 - \pi_0 q)]} \right\} \geq \frac{Rq - c}{1 - \delta}.$$

This condition cannot be satisfied if  $c$  or  $\pi_0$  are sufficiently large relative to  $q(R - r)$ . If  $1 < \pi_0(1 + c - q(R - r))$ , then the set of discount factors  $\delta$  that can support investment in

a model with re-matching is smaller than the one without that option. If the likelihood of good matches increases, dissolving the firm becomes more attractive. Since each new match is anonymous, all partnership-specific history is lost in the new match. Thus, a defector cannot be punished in any re-match. Some friction is necessary to encourage investment, either through a positive cost of switching or through decreasing the likelihood of getting a good re-match. As the cost of dissolution increases, the constraint that the outside option of re-matching imposes becomes slacker.

Suppose that investment cannot be induced but partners have the option to incorporate. Incorporation in this setting raises the dissolution cost arbitrarily high. This assumption removes the re-matching option and deviations from cooperation can be punished within the partnership. New matches are not willing to incorporate. At this point, the match quality is uncertain. Agents prefer to observe a few trials and have the option to quit so that they can sort into matches with better quality. Once they observe a success, all uncertainty is removed. In this case, partners prefer to pay a one-time sunk cost  $\kappa$ , less than  $q(R - 1) / (1 - \delta)$  to transform their enterprise into a corporation. Hence, the model has an equilibrium of the following type: partners shirk so long as there are no successes, they quit after a critical number of failure, but they incorporate and invest after observing a success.

More nuanced results are possible if the model introduces some heterogeneity to partnerships. For instance, if the return from investment  $R$  differs across matches, then there will be matches that can sustain investment without incorporating. These firms receive no further benefit from the corporate form since the stage payoffs are high enough to stave off any deviation. In equilibrium, we will observe associations that survive the experimentation period and are organized as either partnerships or as corporations depending on the underlying parameters.

Now suppose that match type can take any value on the unit interval as in the benchmark. We make the following assumption on prior beliefs and returns to investment.

**Assumption 2.**  $\pi_0 < \min \{c / (R - 1), [R - (1 - \delta)r - c + \delta(1 - \delta)d] / [\delta(1 + c + r - R - \delta d)]\}$



Assumption 2 implies that investment is socially inefficient if partners have no information beyond the prior. Furthermore, investment can be incentive-compatible if partners believe that  $\theta = 1$ . If the first part of the assumption is violated, the problem becomes trivial as every match starts investing. If the second part of the assumption fails, no partnership can sustain investment in equilibrium

**Proposition 2.** *Suppose Assumptions 1 and 2 hold. There exists a subgame perfect equilibrium with cutoff strategies such that*

- (i) *both partners invest if  $\pi \geq \pi_d^*$ ,*
- (ii) *both partners shirk if  $\bar{\pi}_d \leq \pi < \pi_d^*$ ,*
- (iii) *both partners exit if  $\pi < \bar{\pi}_d$ ,*

*and shirk and exit off the equilibrium path for some  $\bar{\pi}_d < \pi_d^*$ , both decreasing in  $d$ .*

*Proof.* The proof follows from McAdams (2011). Belief  $\pi$  is the payoff-relevant state variable. Continuation payoffs are weakly increasing in  $\pi$ . In this formulation,  $\pi_d^*$  and  $\bar{\pi}_d$  describe the work and exit thresholds of McAdams (2011). For a sketch of the proof, consider the value of deviation from investment. To induce investment, we need

$$R\pi - c + \delta \mathbb{E}[V(\pi') | \pi] \geq r\pi + \delta \max \{V(\pi_0) - d, V^{off}(\pi' | \pi)\} \quad (3)$$

where  $V^{off}(\cdot)$  denotes the continuation value of partnership-specific punishment off-the-equilibrium-path. An example is the trigger strategy, the harshest punishment the partners can devise. Since all potential re-matches are the same from an ex ante point of view, equilibrium behavior pins down the constant  $V(p)$ . Within-partnership punishment's value increases in  $\pi$ . For lower values of  $\pi$ , taking the outside option yields higher payoffs. Investment is incentive-compatible only if the continuation value of complying with investment exceeds that of defecting once and re-matching. For sufficiently high  $\pi$ , this will indeed be

the case. The dissolution cost here acts as additional friction. An increase in the dissolution cost lowers the value of re-matching, and reduces the exit cutoff  $\bar{\pi}_d$ . By lowering the outside option, it also makes the investment constraint slacker, allowing investment to take place for lower values of belief  $\pi$ . Hence,  $\pi_d^*$  is also decreasing in  $d$ .  $\square$

Proposition 2 shows that cooperation within the partnership is possible if partners believe that the match quality is reasonably high so that no agent has a profitable deviation of shirking in any one stage and then rematching. Thus, partnerships will follow an experimentation or “exploration” period in which partners make no investment. At this point, partners learn about the productivity of their respective matches. The longer they stay in the partnership, the more informed they become about their joint productivity. Given a high enough match quality, the partnership transitions into an “exploitation” phase where the outside option has less bite and each partner starts undertaking investments. The shadow of breaking up and rematching determines the cooperation threshold. Low dissolution costs can delay investments even when it is efficient to cooperate.

Some partnerships will never invest or incorporate on the equilibrium path, so long as incorporation is costly. These partnerships have more modest match qualities that yield higher continuation payoffs than a rematch, but they cannot deter deviation from undertaking investment. The ease of dissolution and the availability of potential matches create incentives for commitment if agents believe their joint productivity is sufficiently high, but still not high enough to avert defections from investment. Such conditions will arise when, for instance, the trigger strategy can sustain cooperation but defection followed by re-matching yields a higher continuation payoff than the trigger punishment. These partners make an irreversible payment to incorporate their firm and raise the dissolution cost prohibitively high to make within-firm punishments stronger. The intuition resembles the classic models of non-stochastic dynamic games with re-matching (see Kranton 1996 and Carmichael and MacLeod 1997). In these models, players who defect and quit must be punished in order to induce cooperation. However, anonymous matching prevents punishment as players

cannot condition their strategies on partners' histories in previous matches. Some friction in re-matching becomes necessary to discourage defections, which a higher dissolution cost fulfills.

**Corollary 1.** *There exists a cutoff  $\hat{\pi}_d$  such that partnerships with beliefs  $\pi \in [\hat{\pi}_d, \pi_d^*]$  will “incorporate” and irreversibly make the dissolution cost arbitrarily large for some one-time cost of  $\kappa$ .*

*Proof.* Incorporation requires an irreversible cost that turns the equilibrium path behavior into an optimal stopping problem. Matches that incorporate can no longer exercise the option to re-match; these firms can freely devise any within-firm punishment mechanism in order to deter defection. Let  $U(\pi)$  denote the continuation payoff after incorporation. Each agent will invest if

$$R\pi - c + \delta \mathbb{E}[U(\pi') | \pi] \geq r\pi + \frac{\delta\pi}{1 - \delta} \quad (4)$$

assuming agents play the trigger strategy. Note that, for low enough  $d$ , this constraint will be slacker than the inequality without incorporation. Thus, incorporated matches can sustain cooperation for an expanded set of beliefs and will receive higher continuation payoffs. Matches with sufficiently high posteriors  $\pi$  can sustain cooperation without investment. By incorporating, these firms will not gain any boost to their stage payoffs and will lose the option to exit in the unlikely event of drawing a long sequence of failures.  $\square$

For dissolution costs close to zero, most firms dissolve quickly as the cutoff  $\bar{\pi}_d$  is high. The possibility of dissolving and re-matching makes investment unsustainable for most matches. As the dissolution cost increases these cutoffs fall. Investment becomes a feasible strategy for a larger set of posterior beliefs and match qualities. Partnerships with beliefs between  $\hat{\pi}$  and  $\pi^*$  are willing to pay at most the difference in their continuation payoffs between cooperation and shirking in order to raise the dissolution cost and end up in the set of firms that undertake the investment. Firms with posteriors close to 1 have little incentive to incorporate; high match quality supports within-firm punishments strong enough to induce

cooperation regardless of re-matching threats. These partnerships have the long lives of corporations without endogenously choosing a higher dissolution cost.

An exogenous, higher dissolution cost lowers *ex ante* welfare, as McAdams (2011) shows. High dissolution costs lead to investment sooner in all matches. However, the higher cost discourages experimentation with new partners. This is the negative effect on sorting. If agents can endogenously choose to shut down their outside option in cases where they wouldn't have dissolved the partnership anyway, they can achieve higher continuation payoffs than before. Increasing the dissolution cost endogenously has two effects on other equilibrium behavior. The option to incorporate further raises the value of each potential re-match but also raises the value of experimentation in the current match. Depending on which effect dominates, the cutoff  $\bar{\pi}_d$  can fall or rise when the option to incorporate becomes available.

The model thus has several predictions critical for enterprise formation, dissolution, and choice of form. First, agents will prefer to organize their enterprises as partnerships absent any additional signal about quality. Second, these partnerships will display a single peak in their dissolution risk, concentrated within the first few “years” of formation. Third, the surviving partnerships will be stable and undertake more investment in the firm. Fourth, partnerships whose “true” match quality is better than potential matches, but not high enough to sustain cooperation, will find it profitable to incorporate in order to commit partners to investment.

### 4.3 Model Simulations

To explore the model's implications we simulate partnership formations and dissolutions based on the benchmark model with no investment. We create 10,000 partners who are matched and re-matched, implying a stable stock of 5,000 partnerships at any given time. The time horizon is  $T = 240$ , where each period broadly represents one “month.” Match quality  $\theta$  has a beta distribution with parameters  $\alpha = 50$  and  $\beta = 10$ . The common discount factor is  $\delta = 0.99$ . We assume an exogenous dissolution cost of  $d = 0.035$ . These numbers

best replicate the empirical evidence we present in Section 5. The general shape of the simulated risk profile remains robust to other parameter specifications.

According to Proposition 1, each partner optimally dissolves their match if the Gittins index  $m_t(\alpha_t, \beta_t)$  associated with their association is lower than a potential partnership's,  $m_0(\alpha, \beta) = m_0(50, 10)$ . Partners update their posterior beliefs about  $\theta$  at the end of each period. After  $t$  trials, they dissolve the partnership if agents believe that their firm's performance falls short of what they expect to receive in a new match.<sup>23</sup>

The first graph in Figure 4 shows the hazard rate for firm dissolution associated with this simulation. Firms dissolve mostly in the first two “years.” A partnership is “safe” immediately after its foundation. After a small trial period, agents have a better idea about the firm's productivity and decide to dissolve the partnership if they are pessimistic about their enterprise's performance. Conditional on surviving this experimentation, partnerships become much less likely to dissolve.

The simulation exercise also illustrates two comparative static implications. The second graph in Figure 4 compares hazard rates for two different assumed dissolution costs,  $c' = 0.047 > 0.035 = c$ . Higher dissolution costs make partnerships more stable overall, reducing and delaying the early dissolution peak. This stability is suboptimal; partners might have better potential matches in expectation but remain in their current match due to the higher cost of breaking up.

The third graph in Figure 5 shows the case where agents have observed two “successes” prior to the game's start and thus believe their match has high quality. These initial matches are more stable, in this case, optimally so. This comparison is especially relevant for family

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<sup>23</sup>Calculating the Gittins index is a complicated problem and there is no general analytical solution. However, there are many algorithms to approximate indices and solve value functions numerically. This simulation uses a closed form approximation. Whittle (1982) shows that, for large enough  $\alpha + \beta$  and  $\delta$ , the Gittins index of a Bernoulli sampling process is approximately

$$m(\alpha, \beta) \approx \frac{\alpha}{\alpha + \beta} + \frac{\left(\frac{\alpha}{\alpha + \beta}\right) \left(1 - \frac{\alpha}{\alpha + \beta}\right)}{(\alpha + \beta) \sqrt{\left(-2 \log \delta + \frac{1}{\alpha + \beta}\right) \left(\frac{\alpha}{\alpha + \beta}\right) \left(1 - \frac{\alpha}{\alpha + \beta}\right) + \frac{\alpha}{\alpha + \beta} - \frac{1}{2}}}.$$

firms and partnerships whose partners had been in business together before. These matches have stronger signals on their joint productivity and the partnership creates less informational content for these agents.

## 5 Testing the Model

Propositions 1 and 2 in the previous subsection show that partnerships often do not survive their first years because their owners do not have sufficient information about the quality of their matches. The model also predicts that partners who start with more information on each other create more durable enterprises. This section uses the Egyptian firm data to test these and other implications of our model.

Figure 5 plots the Kaplan-Meier survival function separately for partnerships and corporations for the first ten years of their existence. Partnerships display a convex survival rate, with about 30 percent of firms dissolving within the first year. The more stable corporations last much longer and their dissolution rates are more constant over time.

The data have several observable characteristics that indicate whether partners knew each other when they created their firm. To understand how important these characteristics are, we need to hold constant other features such as firm size. Thus we require a regression framework. We experimented with several approaches, including parametric failure-time models. These models require nontrivial functional-form assumptions we would prefer to avoid. Here we focus on more robust models that treat survival to a certain duration (such as five years) as a binary outcome. The appendix presents alternative specifications, including robustness checks for the binary models explored here, as well as parametric failure-time models. The main results are robust to reasonable alternative approaches. Table 4 reports linear probability models in which the dependent variable takes a value of one when the firm survives to at least the specified age. We stress five-year survival; the table also reports results for two-year survival, and the appendix shows results for other durations. Table 4

illustrates two unavoidable data issues. Many firms do not report their capitalization when they form. We estimate models with and without this regressor, and also estimate models constrained to the sub-sample lacking the capitalization data. The capitalization variable issue does not affect our primary result. The second data issue reflects the lack of de-registration information for some firms, noted in section 4 above. We present results for two different treatments of this issue, but stress the specification that simply drops these firms, which amounts to assuming these firms never operated. The Appendix presents robustness checks for alternative assumptions.

All specifications include controls for the firm’s sector and the year it formed.<sup>24</sup> We include one dummy for firms that have a single general partner, and another for the small number of firms that have three or more. For corporations we code these variables as zero, so these dummies are implicitly interacted with a dummy for a form other than corporation. The reference firm for these variables is a two-person general partnership.

The next seven regressors test the role of information and experimentation in the firm’s durability. We expect family firms to last longer, both because the owners know more about each other and because of the implicit co-insurance commitment within the family. If a firm has two (or more) owners who have been in business together before, then there should be more information and the firm will last longer. However, to distinguish between this effect and the implications of just having experienced owners, we include another dummy for firms where two or more owners have been part of a previous firm in our data, regardless of whether they were in business together. Thus “in business together before” captures the pure effect of information about a specific pair. Because many family members form more than one business, we also include a control that interacts “in business together before” with the family-firm dummy. We include three more regressors that categorize the owners’ ethnicity. A firm can have heterogeneous owners, including at least one Muslim; be all Muslim; or be heterogeneous without any Muslims (for example, Greeks and Jews). The reference category

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<sup>24</sup>The appendix reports the full model for the results presented in Table A1.

for these variables is a firm consisting of a homogenous group of unrelated non-Muslims (for example, all Armenians) that lacks at least two partners with prior business experience.

Firms with more capital survive longer, as expected. But the second and third models reported in Table 4 do not differ appreciably in the estimates of interest. Being a corporation or share partnership greatly increases survival chances; share partnerships also last longer, although the effect is smaller. Having only one general partner also increases survival for limited partnerships. The sector dummies (not reported in Table 4, but in Appendix Table A1) indicate that mines and other firms that would suffer heavily from untimely dissolution last longer. These effects, however, differ across the first three specifications. The year-of-formation controls are collectively statistically significant, but there are no meaningful patterns in those estimates.<sup>25</sup>

Family firms endured, as the model implies. This result holds even when we consider the combined effect of being a family firm and having partners with business experience. A firm with two owners who have been in business together before also has a greater survival chance, although this effect is not always precisely estimated. When we also take into account that partners who have been in business together before are also more experienced business people, this family effect declines. Family members who have been in business before contribute less to the firm's survival; depending on the specification, this point estimate completely offsets the effect of prior co-ownership. This result is to be expected, since family members acquire less (additional) information about one another from experimentation.

The ethnicity results also conform to expectations. Members of the small Muslim business community knew each other, and had little reason to experiment; their firms endured.

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<sup>25</sup>In general, for models that include capitalization as a regressor, the sector dummies are not collectively significant. The sector effects are, on the other hand, significant for models that lack capitalization as a regressor. For the first model reported in Table 4, the F-statistic for the null hypothesis that all sector dummies are zero has a value of 1.5, which with degrees of freedom 10 and 5673 has a "p-value" of 0.134. For the second model reported in that table,  $F(10, 475) = 9.15$ , and we can reject the null at conventional confidence level. The year-of-formation dummies, on the other hand, are always collectively significant; for the first two models reported in Table 4,  $F(28, 5673) = 11.07$  for the first model and 14.5 for the second. This general pattern holds for all models reported in Table 4 and in the appendix.



Business formed out of combinations of other groups had much learning to do, and the required experimentation led to firm break-up.

## 6 Conclusion

The model and data have three important implications for firm longevity and enterprise form. First, general and limited partnerships indeed have shorter lives than corporations, even after we control for capitalization, sector, and other characteristics that might affect longevity. Most of the dissolution risk for partnerships, however, comes in the first two years after the firm's establishment. Conditional on lasting two years, enterprise form matters less for surviving for five or more years.

Second, the observed dissolution patterns support the model's core idea: forming partnership reflects a process of experimentation with other investors whose ability cannot be observed perfectly. When two investors come from the same family, they have more prior information on each other, and their enterprise more likely endures. Similarly, when two individuals have been in business together before, they have a clearer idea of their suitability as partners in a business enterprise, and their firm lasts. These two effects partially substitute for one another; for family firms, the presence of a pair with prior joint experience matters less than for non-family firms. The extreme ethnic diversity of Egypt's business community offers other clues to this effect. Firms created out of homogeneous partners endure, because these individuals knew each other. Other firms (perhaps created to capitalize on the gains from trade implicit in diversity) often do not last, because the partners went into the venture without knowing each other well.

Third, this experimentation is beneficial. Consider the following counterfactual. If these forms could not be dissolved easily, then partners would have been stuck in unproductive ventures. Anticipating that result, agents would be less willing to enter into enterprises, depressing capital pooling and business activity as people waited for additional signals before

establishing a multi-owner enterprise. Not all dissolutions, however, add to social welfare. Ease of dissolution depresses investment because partners cannot commit fully to the enterprise: some productive firms cannot survive without a way to lock-in the investments.

The partnership form lies itself at the heart of this trade-off. Rather than an unambiguously restrictive, inferior way of business organization, the partnership offers the best choice for agents who prefer not to lock capital in ventures that might turn out to be unproductive. It allows agents to trade off learning against larger investment. Agents without strong priors on the match quality prefer to organize as “small” partnerships (in the sense that both play “not invest” in the stage game). Agents who have received stronger signals about the match quality prefer incorporation, when possible, because this form induces investment. Some partnerships become suitable for incorporation after the trial period. The model also shows that some firms will never incorporate. These partnerships have such high match productivities that within-partnership punishments are still more valuable than the outside option of re-matching; these firms can sustain cooperation without raising the cost of dissolution. This explains why the preponderance of partnerships that survived the initial trial period, especially family companies, operated for decades without incorporating.

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Table 1: Menu of Organizational Forms

Type		Notes
<i>Société en nom collectif</i>	General partnership	Two or more unlimitedly liable partners.
<i>Société en commandite simple</i>	Limited partnership	One or more unlimitedly liable partners. One or more partners with limited liability. Special partners cannot participate in management.
<i>Société en commandite par actions</i>	Limited partnership by shares	One or more unlimitedly liable partners. One or more partners with limited liability. Special partners can have a board to monitor the ordinary partners, otherwise do not participate in management. Special partners' shares can be traded on the market.
<i>Société anonyme</i>	Corporation	Seven or more members. All members have limited liability. Members' shares are tradable. Requires special permission from the government. Single board of directors with at least three members.

Table 2: Multi-Owned Enterprises: Summary Statistics

	General partnership	Limited partnership	Ltd partnership with shares	Corporation
<i>Court of registration (column %)</i>				
Alexandria	45.16	52.18	46.49	50.33
Cairo	50.10	44.69	51.50	48.58
Mansoura	4.73	3.13	2.01	1.09
<i>Number of partners</i>				
General partners	2.42 (0.82) [2, 14]	1.46 (0.71) [1, 9]	1.61 (1.63) [1, 23]	
Special partners		1.46 (1.09) [1, 37]		
<i>Firm capital (100,000s of 2010 £)</i>				
Overall	3.12 (18.64) [0.0031, 665.94]	3.76 (18.09) [0.0315, 788.31]	12.48 (32.65) [0.1774, 500.97]	36.93 (75.66) [0.0054, 655.79]
Per partner	1.30 (8.61) [0.0010, 332.97]	1.10 (2.51) [0.0113, 79.02]		
<i>Partner characteristics (column %)</i>				
Muslim	9.67	7.10	14.38	15.28
Mixed	29.10	12.92	20.07	87.99
Family	28.40	13.05	11.37	10.92
Family-2	28.40	28.28	25.47	
<i>Industry (column %)</i>				
Wholesale/retail	55.34	59.00	37.79	25.55
Manufacturing	16.41	15.50	30.10	33.62
Finance	1.87	2.49	8.03	7.86
Other	26.38	23.01	24.08	32.97

*Notes:* Where applicable, standard deviations are reported in parentheses, minimums and maximums are reported in brackets. The variable “Muslim” indicates whether the partnership has at least one Muslim partner. “Mixed” denotes companies in which at least two general partners (for partnerships) or founders (for corporations) have different ethno-religious backgrounds. “Family-2” restricts the sample to partnerships with at least two general partners (matters only for limited partnerships and limited partnerships with tradeable shares). The overall sample consists of 6,698 general partnerships, 5,180 limited partnerships, 299 limited partnerships with tradable shares, and 458 corporations. Initial capitalization was reported for 2,997 general partnerships, 3,164 limited partnerships, 283 limited partnerships with tradable shares, and 434 corporations.

Table 3: Partnership Size

Number of general partners	Number of firms		
	General partnerships	Limited partnerships	Limited with shares
1		3,286 (63.6)	193 (64.6)
2	4,725 (70.9)	1,483 (28.7)	78 (26.1)
3	1,390 (20.9)	315 (6.1)	18 (6.0)
4	375 (5.6)	63 (1.2)	3 (0.7)
5 or more	173 (2.6)	21 (0.4)	7 (2.3)
Total	6,663	5,168	299

*Notes:* Column percentages are reported in parentheses.



Table 4: Linear Probability Estimates of Firm Survival

Dependent variable	Estimates excluding firms with no survival information						Incl firms with no survival info		
	60 mo	60 mo	60 mo	24 mo	24 mo	24 mo	60 mo	60 mo	60 mo
Log capital	0.0142 (0.00577)			0.0356 (0.00461)			-0.0109 (0.00510)		
Corporation	0.414 (0.0295)	0.459 (0.0221)	0.441 (0.0273)	0.220 (0.0236)	0.309 (0.0168)	0.288 (0.0219)	0.386 (0.0274)	0.378 (0.0207)	0.364 (0.0253)
Limited partnership	-0.0385 (0.0204)	-0.0342 (0.0147)	-0.0313 (0.0203)	-0.000634 (0.0180)	-0.00447 (0.0133)	0.0175 (0.0179)	-0.0383 (0.0189)	-0.0449 (0.0137)	-0.0439 (0.0187)
Share partnership	0.119 (0.0400)	0.145 (0.0355)	0.144 (0.0386)	0.0791 (0.0307)	0.141 (0.0268)	0.142 (0.0297)	0.108 (0.0364)	0.0846 (0.0326)	0.0879 (0.0351)
Family firm	0.219 (0.0205)	0.256 (0.0137)	0.226 (0.0202)	0.151 (0.0163)	0.196 (0.0111)	0.170 (0.0163)	0.174 (0.0188)	0.194 (0.0125)	0.168 (0.0184)
2+ experienced owners	-0.0531 (0.0235)	-0.0206 (0.0173)	-0.0448 (0.0233)	-0.0451 (0.0210)	-0.00481 (0.0156)	-0.0244 (0.0209)	-0.0749 (0.0227)	-0.0573 (0.0166)	-0.0821 (0.0223)
2+ in business together before	0.0683 (0.0313)	0.0360 (0.0257)	0.0704 (0.0314)	0.0479 (0.0275)	0.0343 (0.0231)	0.0531 (0.0276)	0.0590 (0.0305)	0.0281 (0.0248)	0.0580 (0.0305)
Family×2+ before	-0.0579 (0.0489)	-0.0768 (0.0378)	-0.0585 (0.0488)	-0.0421 (0.0381)	-0.0508 (0.0302)	-0.0437 (0.0377)	-0.0275 (0.0471)	-0.0441 (0.0365)	-0.0272 (0.0471)
One general partner	0.0875 (0.0236)	0.0866 (0.0177)	0.0876 (0.0236)	0.0415 (0.0202)	0.0681 (0.0157)	0.0418 (0.0203)	0.0822 (0.0215)	0.0871 (0.0162)	0.0825 (0.0215)
3+ general partners	-0.00780 (0.0210)	-0.0108 (0.0140)	-0.00378 (0.0210)	-0.0303 (0.0183)	-0.0195 (0.0126)	-0.0203 (0.0183)	0.00368 (0.0190)	-0.0107 (0.0129)	0.000476 (0.0189)
Muslim/heterogeneous firm	-0.0136 (0.0388)	-0.0176 (0.0319)	-0.0130 (0.0388)	-0.0481 (0.0360)	-0.0510 (0.0306)	-0.0466 (0.0359)	0.0370 (0.0341)	0.0294 (0.0283)	0.0362 (0.0340)
Muslim/homogeneous firm	0.0694 (0.0312)	0.0790 (0.0218)	0.0767 (0.0310)	-0.00239 (0.0263)	0.0309 (0.0184)	0.0160 (0.0262)	0.129 (0.0243)	0.126 (0.0171)	0.125 (0.0243)
Non-Muslim/heterogeneous	-0.0379 (0.0203)	-0.0500 (0.0144)	-0.0366 (0.0203)	-0.0443 (0.0187)	-0.0437 (0.0136)	-0.0411 (0.0188)	-0.0220 (0.0187)	-0.0308 (0.0133)	-0.0228 (0.0187)
Constant	0.204 (0.108)	0.244 (0.0500)	0.361 (0.0875)	0.262 (0.0992)	0.550 (0.0457)	0.654 (0.0840)	0.631 (0.0988)	0.315 (0.0477)	0.513 (0.0809)
Sub-sample limited to	Firms with K data	No limit	Firms with K data	Firms with K data	No limit	Firms with K data	Firms with K data	No limit	Firms with K data
Number of Observations	4,407	8,713	4,407	4,407	8,713	4,407	5,181	10,276	5,181
R-squared	0.107	0.099	0.106	0.079	0.071	0.068	0.077	0.072	0.076

Robust standard errors in parentheses. All models include controls for sectors and foundation years.

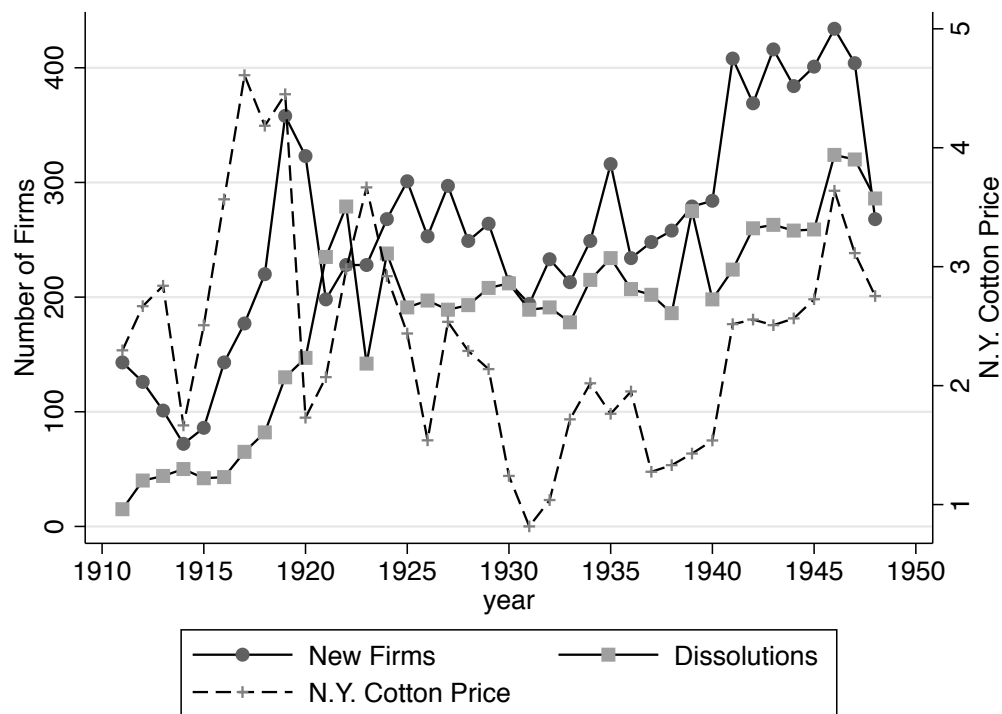


Figure 1: Formation and Dissolution, 1911–1948

*Source:* See text for firm formation and dissolution. For U.S. cotton price, see Olmstead and Rhode (2016).

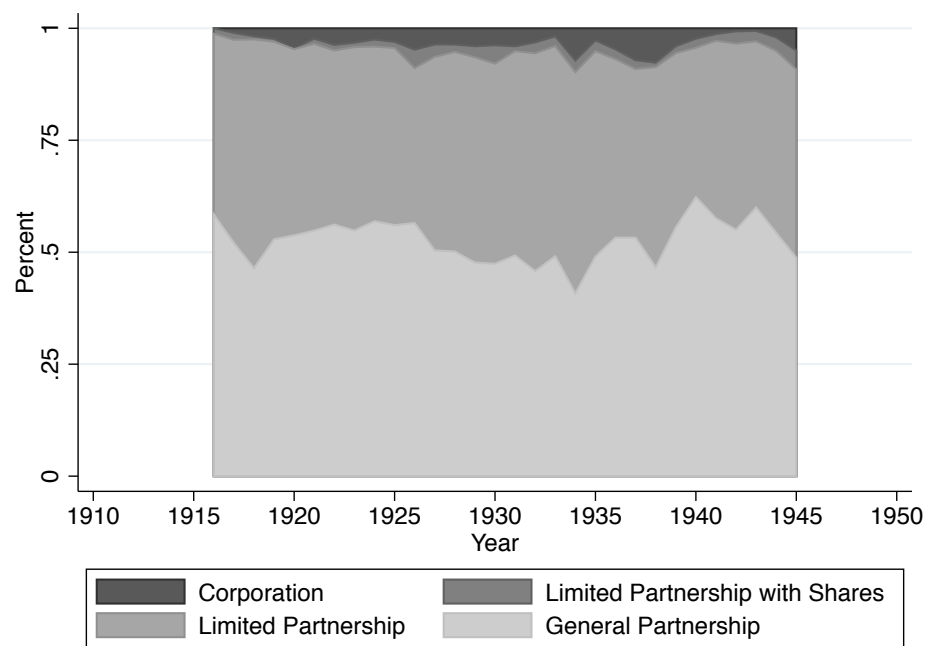


Figure 2: New Multi-Owner Firms by Enterprise Form, 1916–1945

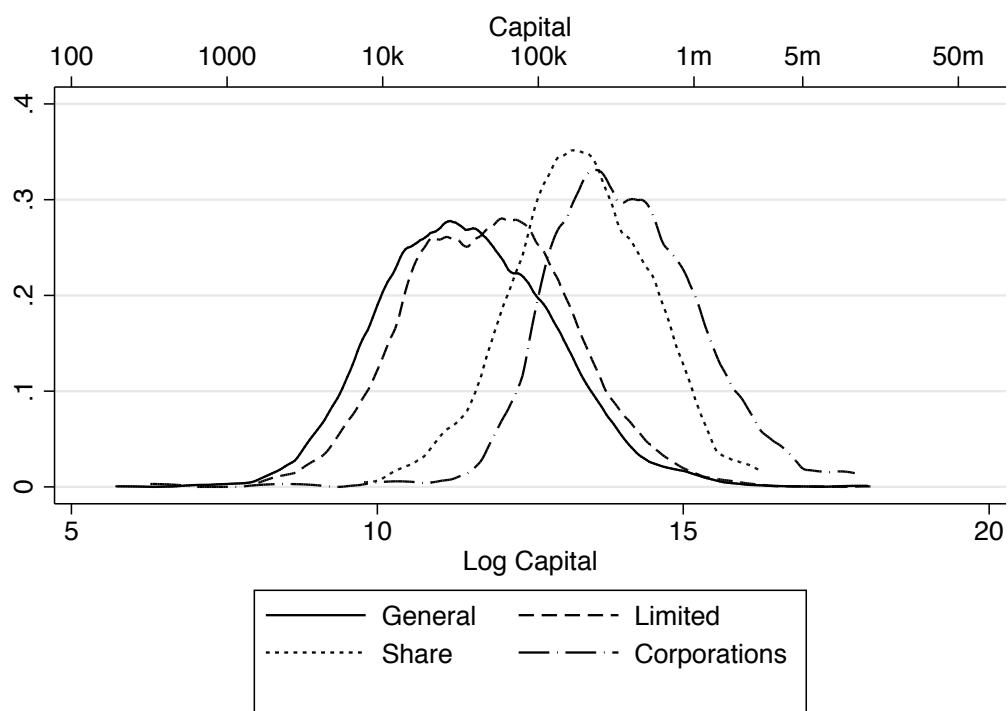
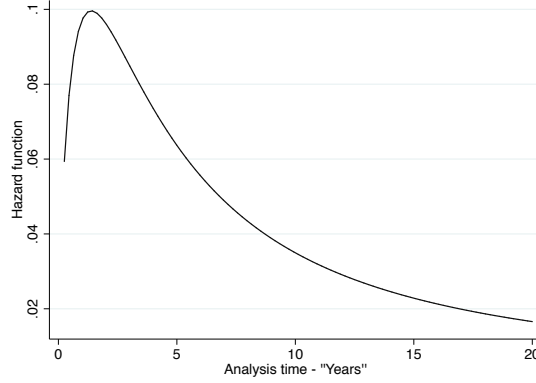
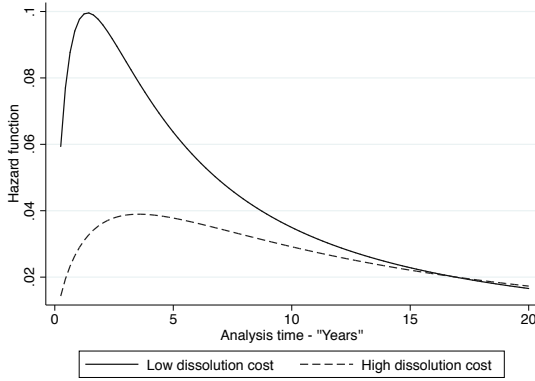


Figure 3: Capital Distribution by Enterprise Form

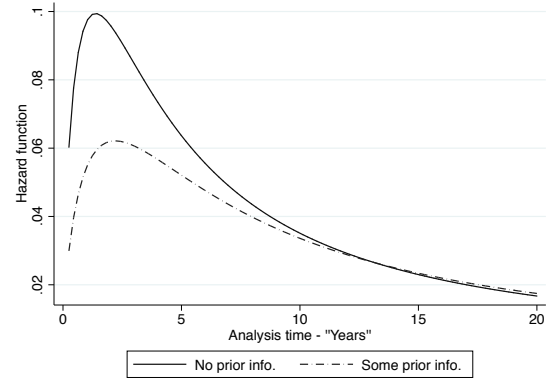
*Notes:* Capital is expressed as the logarithm of pounds sterling in 2010 prices. The upper horizontal axis gives the corresponding pounds sterling equivalent without taking logs.



(a) Benchmark



(b) Different dissolution costs



(c) Prior information

Figure 4: Simulated Hazard Functions

*Notes:* The simulation assumes 10,000 agents who are matched over 240 periods, interpreting each period as a month. The figure uses 12-period intervals, hence each unit of time represents one year. The probability with which a partnership produces a positive reward is drawn from a beta distribution with parameters  $\alpha = 50$  and  $\beta = 10$ . The common discount factor is  $\delta = 0.99$ . The baseline dissolution cost is  $c = 0.035$ , the high dissolution cost  $c' = 0.047$ . The prior information is equivalent to two observations of successes before start.

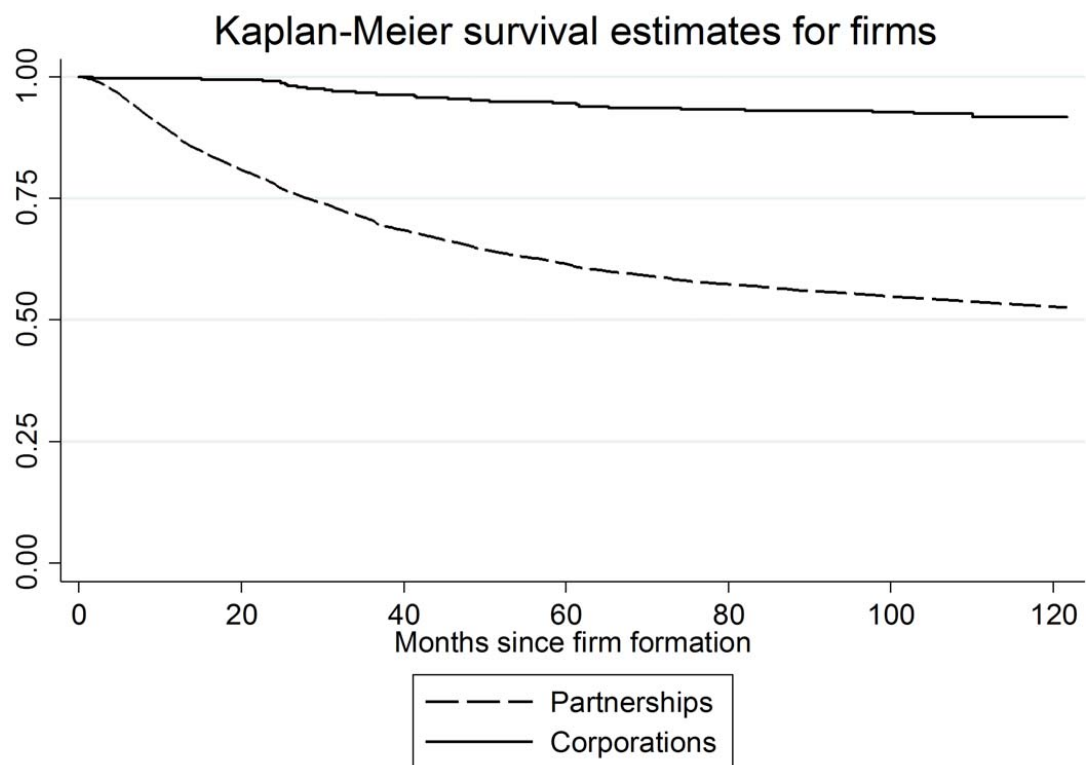


Figure 5: Kaplan-Meier Survival Estimate

*Notes:* The partnership category combines all three partnership forms (general, limited, and share).

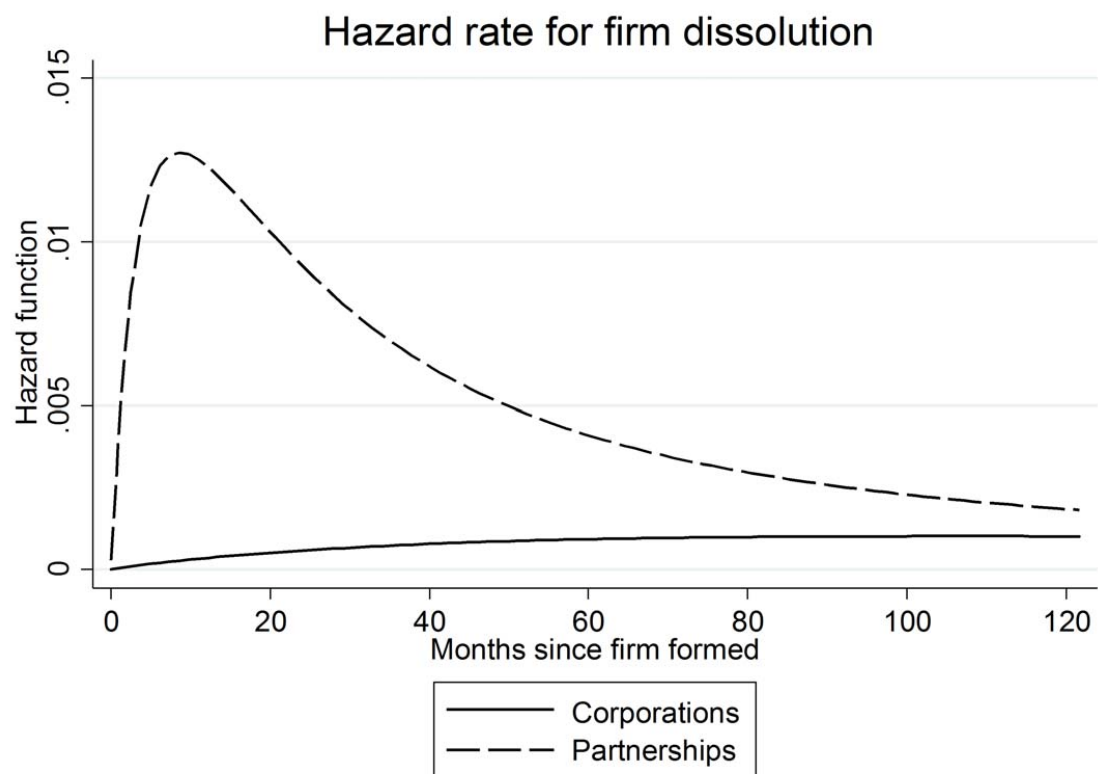


Figure 6: Hazard Rate Estimate

*Notes:* The partnership category combines all three partnership forms (general, limited, and share).

# Online Appendix

## A1 Data Appendix

The database of multi-owned enterprises used in this paper includes information about all partnerships and corporations that filed registration notices with the Mixed Courts of Egypt between November 1910 and March 1949.

### Registration notices

In 1875, Egyptian government adopted a new court system, the Mixed Courts, which applied a slightly modified version of the existing French commercial code. The Mixed Courts' purview included a variety of civil matters, but its competence in company law matters the most for this paper. The new legal system introduced the French menu of enterprise forms, consisting of general partnerships, limited partnerships, limited partnerships with tradeable shares, and corporations.

As is the case in other countries that use French-style commercial law, any new partnership had to register their company with the commercial courts within two weeks of its establishment. Similarly, the law required partners to register modifications to the equity contract as well dissolutions. Starting from November 1910, the courts started to publish notices of registration, modification, and deregistration in their official newspaper. Between November 1910 to October 1921, contract summaries appeared in the montly newspaper *Gazette des Tribunaux Mixte d'Égypte* (from now on, the *Gazette*). Publications switched to a new periodical called *Journal des Tribunaux Mixte d'Égypte* (from now on, the *Journal*), which started out as a weekly, but then started to be released three times per week after November 1923. The *Journal* continued disseminating company notices until March



1949, when the Mixed Courts were abolished. Almost all notices were French, which was the court’s official language. Exceptions were written in Italian or English.<sup>26</sup>

The registration notices give a great deal of information about partnership characteristics. The following are available for almost every firm in the source material:

- (1) Company name (*raison sociale*), which designates the legal name of the firm.<sup>27</sup>
- (2) Company’s legal form
- (3) Each and every general partner’s name
- (4) If a corporation, each and every founder’s name
- (5) The general partners who had the power to sign for the company
- (6) The court in which the registration was filed (one of Alexandria, Cairo, or Mansoura)
- (7) The legal head office
- (8) The firm’s industry
- (9) The contract date
- (10) Start and termination dates of the company, with rules on renewal<sup>28</sup>

Two other pieces of data were available more sporadically: initial capitalization and the number of limited partners. Limited partners’ name in a limited partnerships were almost never disclosed, but this limitation does not affect our approach. In our empirical analysis, we repeat estimations with and without using initial capitalization.

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<sup>26</sup>The entirety of the first eleven years of the Gazette are digitized and online through the Hathi Trust. The Journal is collected into multiple volumes (usually three volumes for each year) and is available physically in many libraries. For this paper, we consulted and digitized the collection of the Yale Lillian Goldman Law Library.

<sup>27</sup>Partnerships could operate under a designation, called “doing business as” name (*dénomination*), which could be different from the company name. Registration notices did not have to disclose this information but often did.

<sup>28</sup>Most firms could be renewed automatically and did not have to be re-registered

Subsequent modification and dissolution notices sometimes repeated the same information, but they mostly referred to the company name and nothing else. Modification notices involved changes in owners (e.g. entry of a new owner, exit of a previous owner, etc.) or changes to capitalization. We used the company names to match notices of the same company to construct the lifetime for each company with a start and end date, and any change in between. We also coded an entry and exit date for each partner in each firm, imputed an ethno-religious identity for each partner, and matched partners across partnerships using their names. Figure A1 shows a registration, modification, and dissolution notice of company “H. Kaprielian, A. Deragopian & Co.” which had the doing-business name “Compagnie Egyptienne.”

## Commercial directories

This dataset uses a second, large-scale data collection effort: digitization of almost the entire collection of the *Egyptian Directory*. These comprehensive commercial directories were published annually from the early 1900s to the 1950s and beyond. The directories list all active enterprises in Egypt and their addresses, usually with one-year lag. We used the directory to check whether firms without deregistration notices actually survived, and to make sure we matched partners across partnerships reliably. The last panel in Figure A1 shows “H. Kaprielian, A. Deragopian & Co.” in the directory.

The directories are rare and the entire span during our period of interest is not available. We succeeded in collecting every volume between 1912 and 1950 except 1923, 1924, 1940, 1942, 1944, and 1946. All volumes are digitized using the collection of Bibliothèque nationale de France, Paris, except 1919 (SALT Araştırma, Istanbul), 1927, 1939, 1943, 1945, 1947 (British Library, London), 1930, 1950 (New York Public Library), and 1941 (David Lisbona and Roger Bilboul’s private collection).

## **What is a distinct partnership?**

Most firms have clear start and end dates. For some companies, especially family firms that persist for a long time, the distinction between a new and a modified firm not so obvious. Some companies go through incremental changes over their lifetime, adding new owners and swapping out old partners for new owners. There are some other firms that dissolved and were immediately reconstituted with the very same partners, company name, and objective. Such firms were essentially renewals. We did not code a partnership as dissolved unless a substantial change in ownership took place, which we define as a shift in half of all current (not necessarily original) general partners. Our methodology implies that if the partnership has two general partners, switching one of the general partners leads to the formation of a new firm. If a firm is made up of three general partners, we do not consider the firm dissolved as long as only one partner is swapped at a time.

## **Firms without notices of deregistration**

While all firms had to file registration notices, dissolutions did not face the same requirement. Many firms in the database did not actually deregister even though they dissolved. Many of these companies let their contracts simply expire; others might have found little benefit in going through deregistration process. Whatever the reason, we cannot simply assume firms without any de-registration survived until 1950.

We have used the commercial directories to address this problem. The Egyptian Directory, like commercial directories in other countries, provides a comprehensive listing of all businesses—whether single proprietorships, partnerships, or corporations—as well as partners, civil societies, and other non-profit establishments. The directories provide a reliable way to check whether a company that did not give a notice of de-registration actually survived. We checked every such company, recorded the last directory in which it appeared, and coded a dissolution date based on this information. If a firm appeared in all directories up to 1930, but did not appear in any directory from 1931 onwards, then we assumed it

dissolved some time in 1930. Using companies with known deregistration dates, we checked the accuracy of our method. In Alexandria, companies that were alive by November of year  $t$  appeared in directory  $t + 1$ ; in Cairo, enterprises active in March of year  $t$  appeared in directory  $t$ .

Not all firms without deregistration actually appeared in a directory. A company might fail to appear in a directory for several reasons:

- (1) The company dissolved within a year; e.g. an Alexandrian firm that was formed in December 1929 and dissolved in September 1930 would not appear in any directory.
- (2) The company was “stillborn;” it filed its registration but it actually never functioned, never made any subsequent publication, and ultimately, had never operated.
- (3) The company was listed with its “doing business as” name, which was not reported in the registration notice. Without knowing the doing-business name, we could not locate the firm in the directory.
- (4) The company always used a single owner’s name in the directory, preventing us from distinguishing when it was a partnership and when a sole proprietorship
- (5) We could not locate the company because of the variation in how owners’ names were spelled in French; an important issue for all Greek and Arabic names

We address this issue by repeating our analysis for three different treatments of these companies. Our preferred specification treats these companies as “stillborn” and excludes them altogether. The second treatment assumes that all such companies dissolved with a year of creation. The third case assumes that, despite not producing any sign of operation, these companies actually survived. We show that our main argument is robust to whatever case we pick.

## A2 Robustness Checks

This section presents a series of robustness checks aimed at two types of issues. The first set of checks (Tables A3-A11) consider alternative specifications to see whether our modeling decisions are driving the results. A second set of checks (Tables A12-A17) estimates a version of the model presented in Table A1 for different sub-sets of firms. These exercises ensure that our results are not driven by a minority of firms.

Tables A1 and A2 present the full models discussed in the text (4). Throughout this appendix, we retain the practice of estimating three versions of each model. First we estimate the model including capitalization as a regressor. Because many firms do not report capitalization, these results may reflect selection bias. We next estimate the same model, dropping the capitalization regressor, for the full sub-sample. Finally, we estimate the same model (without capitalization) only for firms that have the capitalization data. This procedure ensures that we can distinguish between the possible selection bias due to missing values for capitalization on the one hand, and the potential omitted variables bias caused by dropping the capitalization regressor. The point estimates for the other regressors do change slightly across the various specifications, but there are no cases where the change materially affects our results.

### Duration for firm survival

In the text we present results for whether a firm survives five years and for two years. Table A3 reports the same model as in Table A1 for three-year survival, while Table A4 reports the model for one-year survival. Table A5 reports ten-year survival estimates. The differences across the models in these four tables hold to a pattern we see in other checks. The most important results for our purposes are quite robust. Corporations and share partnerships outlast ordinary and limited partnerships. Family firms endure. Heterogeneous firms do not last, while Muslim-only firms do. Other results do not change sign, but their magnitudes

shift and sometimes they lose statistical significance. The most notable for our purposes is the effect of having a pair with prior experience together. In Table A2, for example, this effect is much stronger for the firms that report capitalization than for the full sample used in the second model. For the ten-year duration (Table A5), on the other hand, the prior joint experience variable has an especially large effect in all three specifications.

## **Starting date**

Our only information on the prior history of the partners we observe comes from the database itself. Thus the variables pertaining to prior experience cannot be constructed in the first sample years. In the results reported in the text, as well as in all other results reported here, we estimate the models for firms created in the period 1916-1945. The decision to start in 1916 reflects the trade-off between possible measurement error on the one hand, and reduction in sample size on the other. Table A6 reports a five-year survival model estimated for firms created 1920-1945. This later starting date drops the World War I era, a period with considerable churning in Egyptian firms. Table A7 reports an analogous two-year survival model. There are no substantial differences in other regressors of interest, and the effects for the variables dealing with prior partner history are substantially stronger than in the model reported in the text.

## **Firms with no information after registration**

Some firms did not file notice that they had gone out of business, and some of those we could not identify in a directory, so we do not actually know when they ceased operation. We believe that most such firms never really operated, which is why they did not appear in a directory. In all other results reported here and in the text, we exclude such firms from the estimation sub-sample. But we can check whether their inclusion matters. Tables A8-A11 include such firms. Tables A8 and A9 assume these firms operated until the end period for the model (Table A8, five years, Table A9, two years), while Tables A10 and A11 assume

the firms ceased operations before two years of business. The former assumption, of long duration, is the least plausible, but the results do not change substantially when we use it. In Tables A8 and A9 the impacts of interest are all smaller than in Tables A1 and A2, and some lose statistical significance, but the core message remains the same.

## **Estimates for particular sub-sets of firms**

Tables A12-A19 address the concern that our results might depend on particular kinds of firms. To address this, we re-estimate models analogous to those present in Table A1, but include only firms with specific characteristics. Table A12 uses only ordinary partnerships, while A13 includes both ordinary and limited partnerships. The results we stress in the text do not depend on the inclusion of corporations and share partnerships; the results here are broadly similar to those in the analogous models that include all enterprise forms. The one exception concerns the prior experience variables, which in A13 (ordinary partnerships only) are very imprecisely estimated.

We next consider the role of firm sizes, splitting the sample at the median capitalization ( $\ln \text{capital} = 11.97$ ). Table A14 reports models for firms with less than the median capitalization, while Table A15 reports results for the larger firms. (Note that in both A14 and A15, because we are conditioning on capitalization, we have baked-in any possible selection bias). Enterprise form, the family firm, and ethnicity results remain the same. The prior experience variables, on the other hand, are stronger for smaller firms than for larger. This may hint at the greater importance of match quality for smaller enterprises.

Finally, we consider the role of sector. In some activities (for example, mining) the firm undertakes specific, long-term investments that make experimentation relatively costly. One might ask how our results differ for firms in different sectors. All of the results presented in the text, and here, control for sector. But Tables A16 and A17 report two additional checks for the largest groups of firms in our data. Wholesale and retail enterprises (Table A16) have lower dissolution costs than other firms; they invest most of their capital in inventory

which is easily liquidated. About half of our firms fall into this category. Table A17 adds service firms to the those included in A16. Service firms sell human capital; while specific partnership matches may be important to them, they do not have capital that needs to be locked in. They account for another 15 percent of our sample. Our results remain broadly the same for these two checks. The prior experience effects, however, are very imprecisely estimated.



Table A1: 60-month survival of cohorts 1916–45

VARIABLES	(1) Sub-sample	(2) se	(3) Firms w/ k	(4) se	(5) Firms w/ k	(6) se
s60						
ln(capital)	0.0142	(0.0058)				
Corporation	0.4138	(0.0295)	0.4586	(0.0221)	0.4413	(0.0273)
Limited partnership	-0.0385	(0.0204)	-0.0342	(0.0147)	-0.0313	(0.0203)
Share partnership	0.1193	(0.0400)	0.1452	(0.0355)	0.1443	(0.0386)
One general partner	0.0875	(0.0236)	0.0866	(0.0177)	0.0876	(0.0236)
3+ general partners	-0.0078	(0.0210)	-0.0108	(0.0140)	-0.0038	(0.0210)
Family firm	0.2187	(0.0205)	0.2558	(0.0137)	0.2263	(0.0202)
2+ experienced partners	-0.0531	(0.0235)	-0.0206	(0.0173)	-0.0448	(0.0233)
Pair with prior joint firm	0.0683	(0.0313)	0.0360	(0.0257)	0.0704	(0.0314)
Prior joint×Family	-0.0579	(0.0489)	-0.0768	(0.0378)	-0.0585	(0.0488)
Muslims + others	-0.0136	(0.0388)	-0.0176	(0.0319)	-0.0130	(0.0388)
Only Muslims	0.0694	(0.0312)	0.0790	(0.0218)	0.0767	(0.0310)
Heterogenous non-Muslims	-0.0379	(0.0203)	-0.0500	(0.0144)	-0.0366	(0.0203)
Cairo	0.0123	(0.0151)	0.0305	(0.0106)	0.0115	(0.0151)
Mansoura	0.1343	(0.0350)	0.1154	(0.0259)	0.1284	(0.0349)
Construction	0.1234	(0.0831)	0.2174	(0.0434)	0.1320	(0.0835)
Cotton trade	0.1703	(0.0772)	0.2484	(0.0360)	0.1847	(0.0774)
Cotton manufacturing	0.0933	(0.1020)	0.2380	(0.0634)	0.1079	(0.1019)
Finance	0.2028	(0.0808)	0.2761	(0.0416)	0.2146	(0.0810)
Land	0.2465	(0.0905)	0.3437	(0.0587)	0.2583	(0.0908)
Manufacturing	0.1634	(0.0709)	0.2075	(0.0306)	0.1649	(0.0714)
Mining	0.2059	(0.1023)	0.2352	(0.0709)	0.2101	(0.1028)
Services	0.1304	(0.0713)	0.1824	(0.0306)	0.1292	(0.0718)
Transportation	0.1707	(0.0797)	0.2206	(0.0426)	0.1730	(0.0801)
Wholesale and retail	0.1535	(0.0694)	0.2159	(0.0283)	0.1536	(0.0700)
Founded1917	0.0008	(0.0695)	0.0479	(0.0554)	0.0030	(0.0698)
Founded1918	-0.1242	(0.0655)	-0.0600	(0.0522)	-0.1179	(0.0659)
Founded1919	-0.0647	(0.0651)	-0.0369	(0.0482)	-0.0587	(0.0654)
Founded1920	-0.0931	(0.0739)	-0.0422	(0.0488)	-0.0890	(0.0743)
Founded1921	-0.1019	(0.0793)	-0.0061	(0.0538)	-0.0964	(0.0796)
Founded1922	0.0408	(0.0726)	0.0069	(0.0507)	0.0429	(0.0730)
Founded1923	-0.1438	(0.0765)	-0.0503	(0.0516)	-0.1442	(0.0765)
Founded1924	-0.0422	(0.0725)	-0.0208	(0.0495)	-0.0377	(0.0728)
Founded1925	-0.1157	(0.0701)	-0.0441	(0.0491)	-0.1117	(0.0705)
Founded1926	-0.0947	(0.0732)	-0.0520	(0.0506)	-0.0902	(0.0735)
Founded1927	-0.0787	(0.0680)	-0.0279	(0.0496)	-0.0754	(0.0684)
Founded1928	-0.0565	(0.0700)	0.0455	(0.0501)	-0.0523	(0.0702)
Founded1929	-0.0222	(0.0684)	-0.0102	(0.0500)	-0.0168	(0.0688)

Table A1: 60-month survival of cohorts 1916–45

Founded1930	-0.0136	(0.0687)	0.0265	(0.0509)	-0.0089	(0.0689)
Founded1931	-0.0412	(0.0701)	-0.0227	(0.0523)	-0.0364	(0.0706)
Founded1932	-0.0533	(0.0686)	-0.0460	(0.0510)	-0.0531	(0.0689)
Founded1933	0.0018	(0.0714)	0.0108	(0.0520)	0.0019	(0.0717)
Founded1934	-0.0874	(0.0664)	-0.0088	(0.0503)	-0.0859	(0.0668)
Founded1935	0.0049	(0.0658)	0.0444	(0.0488)	0.0029	(0.0660)
Founded1936	-0.0612	(0.0692)	0.0232	(0.0510)	-0.0575	(0.0694)
Founded1937	0.0106	(0.0647)	0.0200	(0.0506)	0.0101	(0.0650)
Founded1938	0.0363	(0.0649)	0.0639	(0.0498)	0.0352	(0.0652)
Founded1939	0.0034	(0.0659)	0.0432	(0.0494)	-0.0026	(0.0661)
Founded1940	-0.0079	(0.0649)	0.0513	(0.0489)	-0.0116	(0.0652)
Founded1941	-0.0137	(0.0621)	0.0097	(0.0473)	-0.0196	(0.0624)
Founded1942	-0.0400	(0.0622)	0.0176	(0.0480)	-0.0401	(0.0625)
Founded1943	-0.0257	(0.0609)	0.0381	(0.0471)	-0.0240	(0.0612)
Founded1944	-0.0164	(0.0612)	0.0374	(0.0476)	-0.0143	(0.0615)
Founded1945	0.1350	(0.0590)	0.1642	(0.0468)	0.1369	(0.0594)
Constant	0.2037	(0.1076)	0.2436	(0.0500)	0.3609	(0.0875)
Observations	4,407		8,713		4,407	
R-squared	0.1074		0.0985		0.1062	

Table A2: 24-month survival of cohorts 1916–45

VARIABLES	(1) Sub-sample	(2) se	(3) Firms w/ k	(4) se	(5) Firms w/ k	(6) se
s24						
ln(capital)	0.0356	(0.0046)				
Corporation	0.2197	(0.0236)	0.3085	(0.0168)	0.2884	(0.0219)
Limited partnership	-0.0006	(0.0180)	-0.0045	(0.0133)	0.0175	(0.0179)
Share partnership	0.0791	(0.0307)	0.1405	(0.0268)	0.1416	(0.0297)
One general partner	0.0415	(0.0202)	0.0681	(0.0157)	0.0418	(0.0203)
3+ general partners	-0.0303	(0.0183)	-0.0195	(0.0126)	-0.0203	(0.0183)
Family firm	0.1511	(0.0163)	0.1956	(0.0111)	0.1700	(0.0163)
2+ experienced partners	-0.0451	(0.0210)	-0.0048	(0.0156)	-0.0244	(0.0209)
Pair with prior joint firm	0.0479	(0.0275)	0.0343	(0.0231)	0.0531	(0.0276)
Prior joint firm×Family firm	-0.0421	(0.0381)	-0.0508	(0.0302)	-0.0437	(0.0377)
Muslims + others	-0.0481	(0.0360)	-0.0510	(0.0306)	-0.0466	(0.0359)
Only Muslims	-0.0024	(0.0263)	0.0309	(0.0184)	0.0160	(0.0262)
Heterogenous non-Muslims	-0.0443	(0.0187)	-0.0437	(0.0136)	-0.0411	(0.0188)
Cairo	-0.0010	(0.0130)	0.0202	(0.0094)	-0.0030	(0.0130)
Mansoura	0.0734	(0.0299)	0.1180	(0.0209)	0.0587	(0.0302)
Construction	0.1090	(0.0841)	0.2016	(0.0416)	0.1304	(0.0843)
Cotton trade	0.0780	(0.0791)	0.2065	(0.0356)	0.1138	(0.0791)
Cotton manufacturing	0.0478	(0.0942)	0.2249	(0.0516)	0.0842	(0.0950)
Finance	0.1390	(0.0799)	0.2305	(0.0384)	0.1683	(0.0799)
Land	0.1284	(0.0833)	0.2485	(0.0473)	0.1579	(0.0841)
Manufacturing	0.1217	(0.0751)	0.1721	(0.0322)	0.1255	(0.0751)
Mining	0.1181	(0.0993)	0.1655	(0.0689)	0.1286	(0.0993)
Services	0.1318	(0.0754)	0.1658	(0.0323)	0.1288	(0.0754)
Transportation	0.0991	(0.0817)	0.1587	(0.0419)	0.1049	(0.0816)
Wholesale and retail	0.1268	(0.0741)	0.1847	(0.0305)	0.1270	(0.0741)
Founded1917	-0.0452	(0.0559)	-0.0007	(0.0466)	-0.0398	(0.0564)
Founded1918	-0.2383	(0.0558)	-0.1607	(0.0467)	-0.2226	(0.0562)
Founded1919	-0.1077	(0.0527)	-0.0476	(0.0413)	-0.0928	(0.0531)
Founded1920	-0.0697	(0.0584)	-0.0872	(0.0422)	-0.0595	(0.0591)
Founded1921	-0.1100	(0.0650)	-0.0361	(0.0457)	-0.0961	(0.0655)
Founded1922	-0.0355	(0.0571)	-0.0720	(0.0439)	-0.0304	(0.0575)
Founded1923	-0.1044	(0.0633)	-0.1022	(0.0447)	-0.1055	(0.0631)
Founded1924	-0.0614	(0.0574)	-0.0884	(0.0431)	-0.0502	(0.0579)
Founded1925	-0.0540	(0.0563)	-0.0554	(0.0422)	-0.0441	(0.0572)
Founded1926	-0.1099	(0.0609)	-0.0729	(0.0434)	-0.0988	(0.0610)
Founded1927	-0.1166	(0.0555)	-0.0937	(0.0427)	-0.1084	(0.0563)
Founded1928	-0.0861	(0.0563)	-0.0174	(0.0422)	-0.0756	(0.0568)
Founded1929	-0.0973	(0.0556)	-0.1135	(0.0435)	-0.0839	(0.0565)
Founded1930	-0.0722	(0.0544)	-0.0392	(0.0431)	-0.0604	(0.0549)

Table A2: 24-month survival of cohorts 1916–45

Founded1931	-0.0743	(0.0565)	-0.0855	(0.0450)	-0.0625	(0.0571)
Founded1932	-0.0928	(0.0569)	-0.0566	(0.0438)	-0.0924	(0.0576)
Founded1933	-0.0458	(0.0568)	-0.0411	(0.0443)	-0.0458	(0.0572)
Founded1934	-0.1146	(0.0548)	-0.0662	(0.0432)	-0.1108	(0.0555)
Founded1935	-0.0289	(0.0510)	-0.0210	(0.0409)	-0.0339	(0.0513)
Founded1936	-0.0384	(0.0541)	-0.0110	(0.0428)	-0.0291	(0.0546)
Founded1937	-0.0412	(0.0510)	-0.0517	(0.0431)	-0.0425	(0.0516)
Founded1938	-0.0213	(0.0514)	-0.0517	(0.0428)	-0.0241	(0.0517)
Founded1939	-0.0590	(0.0532)	-0.0549	(0.0424)	-0.0740	(0.0533)
Founded1940	-0.0352	(0.0519)	-0.0084	(0.0412)	-0.0442	(0.0523)
Founded1941	-0.0350	(0.0492)	-0.0475	(0.0404)	-0.0495	(0.0497)
Founded1942	-0.1124	(0.0506)	-0.0830	(0.0414)	-0.1128	(0.0510)
Founded1943	-0.0912	(0.0490)	-0.0479	(0.0403)	-0.0870	(0.0495)
Founded1944	-0.0916	(0.0495)	-0.0525	(0.0409)	-0.0863	(0.0500)
Founded1945	-0.0337	(0.0471)	-0.0127	(0.0401)	-0.0291	(0.0477)
Constant	0.2617	(0.0992)	0.5505	(0.0457)	0.6540	(0.0840)
Observations	4,407		8,713		4,407	
R-squared	0.0790		0.0706		0.0683	

Table A3: 36-month survival of cohorts 1916–45

VARIABLES	(1) Sub-sample	(2) se	(3) Firms w/ k	(4) se	(5) Firms w/ k	(6) se
s36						
ln(capital)	0.0242	(0.0053)				
Corporation	0.2936	(0.0267)	0.3575	(0.0199)	0.3403	(0.0248)
Limited partnership	-0.0089	(0.0197)	-0.0098	(0.0143)	0.0035	(0.0195)
Share partnership	0.0872	(0.0368)	0.1417	(0.0323)	0.1297	(0.0355)
One general partner	0.0576	(0.0223)	0.0685	(0.0171)	0.0578	(0.0224)
3+ plus general partners	-0.0262	(0.0200)	-0.0236	(0.0135)	-0.0194	(0.0200)
Family firm	0.1922	(0.0186)	0.2278	(0.0126)	0.2050	(0.0184)
2+ experienced partners	-0.0462	(0.0226)	-0.0016	(0.0167)	-0.0321	(0.0225)
Pair with prior joint firm	0.0382	(0.0303)	0.0283	(0.0249)	0.0418	(0.0303)
Prior joint firm×Family firm	-0.0177	(0.0437)	-0.0506	(0.0343)	-0.0188	(0.0435)
Muslims + others	0.0031	(0.0377)	-0.0042	(0.0316)	0.0041	(0.0377)
Only Muslims	0.0403	(0.0290)	0.0594	(0.0205)	0.0528	(0.0289)
Heterogenous non-Muslims	-0.0264	(0.0198)	-0.0423	(0.0143)	-0.0243	(0.0199)
Cairo	0.0060	(0.0143)	0.0304	(0.0102)	0.0047	(0.0143)
Mansoura	0.1191	(0.0321)	0.1366	(0.0240)	0.1091	(0.0324)
Construction	0.1533	(0.0861)	0.2366	(0.0434)	0.1678	(0.0866)
Cotton trade	0.1701	(0.0801)	0.2414	(0.0365)	0.1944	(0.0805)
Cotton manufacturing	0.1624	(0.0959)	0.2958	(0.0548)	0.1872	(0.0968)
Finance	0.2229	(0.0822)	0.2634	(0.0411)	0.2428	(0.0826)
Land	0.2074	(0.0900)	0.3172	(0.0536)	0.2275	(0.0910)
Manufacturing	0.1726	(0.0756)	0.2021	(0.0322)	0.1752	(0.0761)
Mining	0.1698	(0.1055)	0.2268	(0.0720)	0.1769	(0.1059)
Services	0.1575	(0.0760)	0.1868	(0.0323)	0.1554	(0.0765)
Transportation	0.1504	(0.0830)	0.2032	(0.0430)	0.1543	(0.0834)
Wholesale and retail	0.1599	(0.0744)	0.2072	(0.0303)	0.1601	(0.0749)
Founded1917	-0.0079	(0.0640)	0.0418	(0.0524)	-0.0043	(0.0645)
Founded1918	-0.2064	(0.0622)	-0.1328	(0.0509)	-0.1957	(0.0627)
Founded1919	-0.0976	(0.0608)	-0.0209	(0.0465)	-0.0874	(0.0612)
Founded1920	-0.0719	(0.0678)	-0.0510	(0.0471)	-0.0649	(0.0685)
Founded1921	-0.0679	(0.0732)	0.0007	(0.0515)	-0.0585	(0.0737)
Founded1922	-0.0027	(0.0663)	-0.0052	(0.0486)	0.0008	(0.0666)
Founded1923	-0.1055	(0.0716)	-0.0715	(0.0500)	-0.1063	(0.0719)
Founded1924	-0.0834	(0.0678)	-0.0780	(0.0480)	-0.0758	(0.0683)
Founded1925	-0.0404	(0.0654)	-0.0155	(0.0471)	-0.0336	(0.0662)
Founded1926	-0.0564	(0.0675)	-0.0449	(0.0483)	-0.0489	(0.0679)
Founded1927	-0.1135	(0.0636)	-0.0600	(0.0477)	-0.1079	(0.0641)
Founded1928	-0.1112	(0.0660)	0.0096	(0.0477)	-0.1040	(0.0664)
Founded1929	-0.0568	(0.0634)	-0.0573	(0.0481)	-0.0477	(0.0640)
Founded1930	-0.0649	(0.0635)	-0.0097	(0.0487)	-0.0568	(0.0639)

Table A3: 36-month survival of cohorts 1916–45

Founded1931	-0.0378	(0.0643)	-0.0585	(0.0502)	-0.0298	(0.0648)
Founded1932	-0.0847	(0.0645)	-0.0573	(0.0493)	-0.0843	(0.0652)
Founded1933	-0.0392	(0.0656)	-0.0275	(0.0497)	-0.0391	(0.0660)
Founded1934	-0.0804	(0.0622)	-0.0248	(0.0482)	-0.0778	(0.0628)
Founded1935	-0.0287	(0.0604)	0.0149	(0.0464)	-0.0322	(0.0607)
Founded1936	-0.0711	(0.0651)	-0.0073	(0.0491)	-0.0647	(0.0654)
Founded1937	0.0008	(0.0590)	-0.0004	(0.0482)	-0.0000	(0.0595)
Founded1938	0.0084	(0.0598)	0.0188	(0.0475)	0.0065	(0.0601)
Founded1939	-0.0112	(0.0606)	0.0184	(0.0471)	-0.0214	(0.0608)
Founded1940	-0.0236	(0.0603)	0.0230	(0.0468)	-0.0297	(0.0607)
Founded1941	-0.0415	(0.0577)	-0.0227	(0.0455)	-0.0514	(0.0582)
Founded1942	-0.0941	(0.0581)	-0.0397	(0.0462)	-0.0945	(0.0586)
Founded1943	-0.0852	(0.0568)	-0.0273	(0.0454)	-0.0823	(0.0572)
Founded1944	-0.1001	(0.0573)	-0.0408	(0.0460)	-0.0965	(0.0579)
Founded1945	0.0140	(0.0549)	0.0486	(0.0451)	0.0172	(0.0555)
Constant	0.2290	(0.1073)	0.3880	(0.0496)	0.4957	(0.0895)
Observations	4,407		8,713		4,407	
R-squared	0.0858		0.0804		0.0817	

Table A4: 12-month survival of cohorts 1916–45

VARIABLES	(1) Sub-sample	(2) se	(3) Firms w/ k	(4) se	(5) Firms w/ k	(6) se
s12						
ln(capital)	0.0217	(0.0036)				
Corporation	0.1256	(0.0179)	0.1878	(0.0134)	0.1674	(0.0170)
Limited partnership	-0.0004	(0.0141)	0.0192	(0.0105)	0.0106	(0.0140)
Share partnership	0.0542	(0.0218)	0.1035	(0.0192)	0.0923	(0.0212)
One general partner	0.0256	(0.0160)	0.0274	(0.0123)	0.0258	(0.0160)
3+ plus general partners	-0.0188	(0.0144)	-0.0096	(0.0101)	-0.0127	(0.0144)
Family firm	0.0961	(0.0119)	0.1087	(0.0086)	0.1075	(0.0119)
2+ experienced partners	-0.0234	(0.0166)	0.0096	(0.0123)	-0.0108	(0.0165)
Pair with prior joint firm	0.0337	(0.0216)	0.0235	(0.0183)	0.0369	(0.0216)
Prior joint firm*Family firm	-0.0419	(0.0281)	-0.0332	(0.0220)	-0.0429	(0.0279)
Muslims + others	-0.0395	(0.0301)	-0.0453	(0.0258)	-0.0386	(0.0300)
Only Muslims	-0.0022	(0.0198)	0.0320	(0.0132)	0.0090	(0.0198)
Heterogenous non-Muslims	-0.0394	(0.0153)	-0.0493	(0.0115)	-0.0375	(0.0154)
Cairo	-0.0017	(0.0103)	0.0142	(0.0076)	-0.0029	(0.0103)
Mansoura	0.0729	(0.0195)	0.0934	(0.0143)	0.0639	(0.0194)
Construction	0.0894	(0.0723)	0.1486	(0.0351)	0.1024	(0.0721)
Cotton trade	0.0643	(0.0688)	0.1352	(0.0310)	0.0861	(0.0685)
Cotton manufacturing	0.1131	(0.0706)	0.1603	(0.0390)	0.1353	(0.0702)
Finance	0.1116	(0.0679)	0.1730	(0.0312)	0.1295	(0.0676)
Land	0.0608	(0.0758)	0.1264	(0.0460)	0.0788	(0.0762)
Manufacturing	0.0821	(0.0663)	0.1072	(0.0290)	0.0844	(0.0661)
Mining	0.1079	(0.0774)	0.1605	(0.0491)	0.1143	(0.0777)
Services	0.0822	(0.0665)	0.1034	(0.0290)	0.0803	(0.0663)
Transportation	0.0691	(0.0716)	0.0878	(0.0372)	0.0727	(0.0714)
Wholesale and retail	0.0937	(0.0655)	0.1281	(0.0276)	0.0938	(0.0652)
Founded1917	-0.0053	(0.0372)	0.0107	(0.0347)	-0.0020	(0.0376)
Founded1918	-0.1677	(0.0429)	-0.1079	(0.0379)	-0.1582	(0.0432)
Founded1919	-0.0515	(0.0368)	-0.0107	(0.0310)	-0.0424	(0.0370)
Founded1920	-0.0211	(0.0386)	-0.0334	(0.0320)	-0.0148	(0.0388)
Founded1921	-0.1179	(0.0523)	-0.0372	(0.0355)	-0.1095	(0.0523)
Founded1922	-0.0776	(0.0454)	-0.0371	(0.0339)	-0.0745	(0.0456)
Founded1923	-0.1602	(0.0534)	-0.0697	(0.0353)	-0.1609	(0.0532)
Founded1924	-0.0420	(0.0403)	-0.0693	(0.0342)	-0.0352	(0.0408)
Founded1925	-0.0406	(0.0407)	-0.0351	(0.0327)	-0.0346	(0.0411)
Founded1926	-0.1205	(0.0486)	-0.0850	(0.0349)	-0.1138	(0.0487)
Founded1927	-0.0782	(0.0399)	-0.0543	(0.0330)	-0.0732	(0.0403)
Founded1928	-0.0987	(0.0429)	-0.0339	(0.0329)	-0.0923	(0.0434)
Founded1929	-0.0759	(0.0406)	-0.0725	(0.0340)	-0.0678	(0.0410)
Founded1930	-0.0587	(0.0385)	-0.0174	(0.0326)	-0.0515	(0.0389)

Table A4: 12-month survival of cohorts 1916–45

Founded1931	-0.0519	(0.0397)	-0.0641	(0.0352)	-0.0448	(0.0402)
Founded1932	-0.0589	(0.0406)	-0.0263	(0.0334)	-0.0586	(0.0408)
Founded1933	-0.0150	(0.0385)	-0.0157	(0.0334)	-0.0149	(0.0388)
Founded1934	-0.0495	(0.0373)	-0.0510	(0.0334)	-0.0472	(0.0377)
Founded1935	-0.0340	(0.0357)	-0.0132	(0.0310)	-0.0371	(0.0360)
Founded1936	-0.0566	(0.0401)	-0.0256	(0.0334)	-0.0510	(0.0404)
Founded1937	-0.0390	(0.0359)	-0.0134	(0.0318)	-0.0397	(0.0362)
Founded1938	-0.0455	(0.0375)	-0.0491	(0.0335)	-0.0472	(0.0378)
Founded1939	-0.0505	(0.0383)	-0.0141	(0.0315)	-0.0596	(0.0384)
Founded1940	-0.0391	(0.0368)	-0.0009	(0.0311)	-0.0446	(0.0370)
Founded1941	-0.0542	(0.0356)	-0.0463	(0.0313)	-0.0631	(0.0359)
Founded1942	-0.1071	(0.0374)	-0.0798	(0.0326)	-0.1073	(0.0376)
Founded1943	-0.0416	(0.0339)	-0.0251	(0.0307)	-0.0390	(0.0341)
Founded1944	-0.0514	(0.0349)	-0.0307	(0.0313)	-0.0481	(0.0352)
Founded1945	-0.0389	(0.0333)	-0.0210	(0.0309)	-0.0361	(0.0336)
Constant	0.5697	(0.0809)	0.7323	(0.0375)	0.8088	(0.0700)
Observations	4,407		8,713		4,407	
R-squared	0.0578		0.0491		0.0512	



Table A5: 120-month survival of cohorts 1916–40

VARIABLES	(1) Sub-sample	(2) se	(3) Firms w/ k	(4) se	(5) Firms w/ k	(6) se
s120						
ln(capital)	-0.0051	(0.0070)				
Corporation	0.5728	(0.0359)	0.5624	(0.0264)	0.5631	(0.0328)
Limited partnership	-0.0200	(0.0250)	-0.0322	(0.0167)	-0.0223	(0.0249)
Share partnership	0.1242	(0.0529)	0.1077	(0.0465)	0.1156	(0.0515)
One general partner	0.0892	(0.0282)	0.0889	(0.0199)	0.0895	(0.0282)
3+ plus general partners	0.0205	(0.0267)	-0.0116	(0.0160)	0.0190	(0.0266)
Family firm	0.2304	(0.0260)	0.2371	(0.0163)	0.2276	(0.0258)
2+ experienced partners	-0.0835	(0.0288)	-0.0519	(0.0201)	-0.0858	(0.0287)
Pair with prior joint firm	0.1078	(0.0380)	0.0474	(0.0290)	0.1064	(0.0379)
Prior joint firm×Family firm	-0.0627	(0.0640)	-0.0246	(0.0459)	-0.0618	(0.0640)
Muslims + others	-0.0300	(0.0462)	-0.0366	(0.0364)	-0.0296	(0.0462)
Only Muslims	0.0941	(0.0397)	0.0949	(0.0267)	0.0915	(0.0396)
Heterogenous non-Muslims	-0.0097	(0.0241)	-0.0269	(0.0156)	-0.0099	(0.0241)
Cairo	-0.0012	(0.0182)	0.0057	(0.0120)	-0.0007	(0.0182)
Mansoura	0.1015	(0.0489)	0.0862	(0.0332)	0.1038	(0.0488)
Construction	0.0664	(0.0912)	0.2253	(0.0436)	0.0631	(0.0910)
Cotton trade	0.0892	(0.0857)	0.2460	(0.0351)	0.0833	(0.0853)
Cotton manufacturing	0.1330	(0.1093)	0.2892	(0.0669)	0.1279	(0.1090)
Finance	0.1327	(0.0903)	0.2731	(0.0424)	0.1278	(0.0898)
Land	0.1140	(0.1035)	0.3040	(0.0669)	0.1094	(0.1032)
Manufacturing	0.0951	(0.0797)	0.2266	(0.0294)	0.0937	(0.0796)
Mining	0.2062	(0.1151)	0.3333	(0.0769)	0.2047	(0.1149)
Services	0.0774	(0.0801)	0.2151	(0.0291)	0.0773	(0.0801)
Transportation	0.1472	(0.0899)	0.2460	(0.0442)	0.1455	(0.0898)
Wholesale and retail	0.0803	(0.0770)	0.2161	(0.0255)	0.0796	(0.0769)
Founded1917	-0.0249	(0.0711)	0.0130	(0.0547)	-0.0257	(0.0710)
Founded1918	-0.1031	(0.0652)	-0.0646	(0.0500)	-0.1055	(0.0651)
Founded1919	-0.0231	(0.0662)	-0.0307	(0.0468)	-0.0253	(0.0661)
Founded1920	-0.0602	(0.0746)	-0.0399	(0.0475)	-0.0618	(0.0746)
Founded1921	-0.0671	(0.0783)	-0.0373	(0.0519)	-0.0693	(0.0782)
Founded1922	-0.0450	(0.0746)	-0.0327	(0.0497)	-0.0459	(0.0745)
Founded1923	-0.1600	(0.0743)	-0.0724	(0.0495)	-0.1600	(0.0744)
Founded1924	-0.0056	(0.0726)	-0.0220	(0.0480)	-0.0075	(0.0725)
Founded1925	-0.0191	(0.0707)	-0.0363	(0.0479)	-0.0206	(0.0705)
Founded1926	-0.0658	(0.0741)	-0.0372	(0.0496)	-0.0675	(0.0740)
Founded1927	-0.0928	(0.0676)	-0.0378	(0.0479)	-0.0941	(0.0676)
Founded1928	0.0063	(0.0705)	0.0562	(0.0495)	0.0046	(0.0705)
Founded1929	-0.0080	(0.0699)	-0.0262	(0.0487)	-0.0101	(0.0697)
Founded1930	-0.0171	(0.0704)	0.0211	(0.0504)	-0.0190	(0.0703)

Table A5: 120-month survival of cohorts 1916–40

Founded1931	-0.0935	(0.0706)	-0.0685	(0.0507)	-0.0954	(0.0705)
Founded1932	-0.0851	(0.0686)	-0.0570	(0.0496)	-0.0853	(0.0686)
Founded1933	0.0442	(0.0727)	0.0386	(0.0508)	0.0440	(0.0727)
Founded1934	-0.1281	(0.0663)	-0.0439	(0.0491)	-0.1288	(0.0663)
Founded1935	0.0018	(0.0677)	0.0257	(0.0480)	0.0024	(0.0676)
Founded1936	-0.0298	(0.0700)	0.0330	(0.0501)	-0.0313	(0.0700)
Founded1937	-0.0100	(0.0662)	-0.0035	(0.0497)	-0.0100	(0.0661)
Founded1938	0.0557	(0.0669)	0.0732	(0.0492)	0.0559	(0.0669)
Founded1939	0.0346	(0.0676)	0.0541	(0.0488)	0.0367	(0.0676)
Founded1940	0.0123	(0.0664)	0.0701	(0.0484)	0.0136	(0.0663)
Constant	0.3465	(0.1211)	0.1247	(0.0470)	0.2904	(0.0945)
Observations	3,001		6,592		3,001	
R-squared	0.1400		0.1105		0.1398	

Table A6: 60-month survival of cohorts 1920–45

VARIABLES	(1) Sub-sample	(2) se	(3) Firms w/ k	(4) se	(5) Firms w/ k	(6) se
s60						
ln(capital)	0.0131	(0.0061)				
Corporation	0.4141	(0.0313)	0.4567	(0.0232)	0.4397	(0.0289)
Limited partnership	-0.0400	(0.0219)	-0.0345	(0.0156)	-0.0329	(0.0217)
Share partnership	0.1190	(0.0415)	0.1440	(0.0365)	0.1422	(0.0400)
One general partner	0.0989	(0.0253)	0.0909	(0.0187)	0.0994	(0.0253)
3+ plus general partners	-0.0096	(0.0222)	-0.0113	(0.0148)	-0.0056	(0.0221)
Family firm	0.2272	(0.0217)	0.2595	(0.0144)	0.2345	(0.0214)
2+ experienced partners	-0.0478	(0.0243)	-0.0186	(0.0178)	-0.0402	(0.0241)
Pair with prior joint firm	0.0709	(0.0322)	0.0363	(0.0263)	0.0726	(0.0322)
Prior joint firm*Family firm	-0.0650	(0.0503)	-0.0754	(0.0387)	-0.0651	(0.0502)
Muslims + others	-0.0261	(0.0396)	-0.0309	(0.0324)	-0.0256	(0.0397)
Only Muslims	0.0604	(0.0327)	0.0815	(0.0226)	0.0668	(0.0326)
Heterogenous non-Muslims	-0.0349	(0.0216)	-0.0456	(0.0153)	-0.0335	(0.0216)
Cairo	0.0048	(0.0161)	0.0209	(0.0112)	0.0046	(0.0162)
Mansoura	0.1311	(0.0355)	0.1132	(0.0262)	0.1259	(0.0354)
Construction	0.1919	(0.1138)	0.2769	(0.0455)	0.1977	(0.1142)
Cotton trade	0.2451	(0.1101)	0.3219	(0.0384)	0.2557	(0.1104)
Cotton manufacturing	0.1620	(0.1277)	0.2892	(0.0645)	0.1731	(0.1278)
Finance	0.2634	(0.1118)	0.3283	(0.0437)	0.2725	(0.1122)
Land	0.3147	(0.1189)	0.4039	(0.0598)	0.3232	(0.1192)
Manufacturing	0.2318	(0.1048)	0.2687	(0.0326)	0.2310	(0.1052)
Mining	0.2876	(0.1289)	0.3055	(0.0726)	0.2899	(0.1293)
Services	0.1974	(0.1053)	0.2460	(0.0328)	0.1938	(0.1058)
Transportation	0.2396	(0.1109)	0.2865	(0.0444)	0.2395	(0.1113)
Wholesale and retail	0.2226	(0.1040)	0.2777	(0.0305)	0.2203	(0.1044)
Founded1921	-0.0109	(0.0769)	0.0377	(0.0435)	-0.0095	(0.0771)
Founded1922	0.1317	(0.0697)	0.0489	(0.0395)	0.1299	(0.0699)
Founded1923	-0.0538	(0.0740)	-0.0078	(0.0407)	-0.0578	(0.0739)
Founded1924	0.0473	(0.0703)	0.0219	(0.0380)	0.0478	(0.0705)
Founded1925	-0.0265	(0.0677)	-0.0014	(0.0374)	-0.0263	(0.0679)
Founded1926	-0.0030	(0.0704)	-0.0102	(0.0393)	-0.0025	(0.0705)
Founded1927	0.0078	(0.0655)	0.0130	(0.0380)	0.0073	(0.0657)
Founded1928	0.0327	(0.0673)	0.0868	(0.0386)	0.0330	(0.0674)
Founded1929	0.0671	(0.0657)	0.0314	(0.0386)	0.0683	(0.0659)
Founded1930	0.0756	(0.0658)	0.0678	(0.0397)	0.0762	(0.0659)
Founded1931	0.0479	(0.0673)	0.0177	(0.0414)	0.0486	(0.0676)
Founded1932	0.0353	(0.0662)	-0.0054	(0.0398)	0.0319	(0.0663)
Founded1933	0.0907	(0.0689)	0.0522	(0.0412)	0.0871	(0.0690)
Founded1934	0.0022	(0.0634)	0.0314	(0.0389)	-0.0001	(0.0636)

Table A6: 60-month survival of cohorts 1920–45

Founded1935	0.0947	(0.0631)	0.0849	(0.0371)	0.0892	(0.0631)
Founded1936	0.0286	(0.0665)	0.0636	(0.0400)	0.0284	(0.0665)
Founded1937	0.1004	(0.0616)	0.0599	(0.0393)	0.0964	(0.0617)
Founded1938	0.1261	(0.0618)	0.1044	(0.0383)	0.1214	(0.0618)
Founded1939	0.0927	(0.0633)	0.0834	(0.0378)	0.0836	(0.0632)
Founded1940	0.0817	(0.0624)	0.0919	(0.0372)	0.0748	(0.0624)
Founded1941	0.0766	(0.0594)	0.0515	(0.0351)	0.0676	(0.0594)
Founded1942	0.0508	(0.0595)	0.0587	(0.0361)	0.0470	(0.0596)
Founded1943	0.0665	(0.0580)	0.0803	(0.0348)	0.0645	(0.0581)
Founded1944	0.0750	(0.0584)	0.0789	(0.0356)	0.0734	(0.0586)
Founded1945	0.2261	(0.0559)	0.2059	(0.0344)	0.2242	(0.0561)
Constant	0.0583	(0.1336)	0.1431	(0.0389)	0.2074	(0.1144)
Observations	3,856		7,793		3,856	
R-squared	0.1118		0.1025		0.1108	

Table A7: 24-month survival of cohorts 1920–45

VARIABLES	(1) Sub-sample	(2) se	(3) Firms w/ k	(4) se	(5) Firms w/ k	(6) se
ln(capital)	0.0374	(0.0049)				
Corporation	0.2141	(0.0252)	0.3070	(0.0177)	0.2874	(0.0234)
Limited partnership	-0.0047	(0.0192)	-0.0063	(0.0141)	0.0156	(0.0191)
Share partnership	0.0805	(0.0314)	0.1468	(0.0270)	0.1469	(0.0302)
One general partner	0.0515	(0.0215)	0.0789	(0.0166)	0.0528	(0.0216)
3+ plus general partners	-0.0252	(0.0193)	-0.0119	(0.0132)	-0.0137	(0.0193)
Family firm	0.1415	(0.0174)	0.1935	(0.0118)	0.1622	(0.0173)
2+ experienced partners	-0.0348	(0.0216)	0.0044	(0.0160)	-0.0131	(0.0215)
Pair with prior joint firm	0.0497	(0.0280)	0.0350	(0.0235)	0.0546	(0.0280)
Prior joint firm×Family firm	-0.0491	(0.0389)	-0.0570	(0.0308)	-0.0494	(0.0387)
Muslims + others	-0.0601	(0.0371)	-0.0605	(0.0316)	-0.0586	(0.0370)
Only Muslims	-0.0053	(0.0273)	0.0303	(0.0191)	0.0131	(0.0272)
Heterogenous non-Muslims	-0.0563	(0.0199)	-0.0446	(0.0144)	-0.0521	(0.0200)
Cairo	-0.0081	(0.0137)	0.0154	(0.0099)	-0.0085	(0.0138)
Mansoura	0.0722	(0.0303)	0.1182	(0.0212)	0.0575	(0.0306)
Construction	0.2216	(0.1199)	0.2475	(0.0453)	0.2384	(0.1215)
Cotton trade	0.1978	(0.1167)	0.2492	(0.0400)	0.2281	(0.1182)
Cotton manufacturing	0.1549	(0.1270)	0.2597	(0.0545)	0.1868	(0.1290)
Finance	0.2386	(0.1169)	0.2709	(0.0423)	0.2648	(0.1183)
Land	0.2399	(0.1187)	0.2907	(0.0502)	0.2641	(0.1207)
Manufacturing	0.2323	(0.1134)	0.2191	(0.0364)	0.2299	(0.1149)
Mining	0.2424	(0.1310)	0.2176	(0.0710)	0.2492	(0.1320)
Services	0.2423	(0.1138)	0.2080	(0.0366)	0.2320	(0.1153)
Transportation	0.2028	(0.1181)	0.1971	(0.0456)	0.2026	(0.1195)
Wholesale and retail	0.2382	(0.1129)	0.2294	(0.0349)	0.2317	(0.1144)
Founded1921	-0.0431	(0.0637)	0.0524	(0.0384)	-0.0391	(0.0643)
Founded1922	0.0326	(0.0557)	0.0157	(0.0360)	0.0274	(0.0562)
Founded1923	-0.0379	(0.0620)	-0.0146	(0.0371)	-0.0494	(0.0618)
Founded1924	0.0041	(0.0562)	-0.0002	(0.0352)	0.0056	(0.0568)
Founded1925	0.0099	(0.0553)	0.0321	(0.0339)	0.0106	(0.0563)
Founded1926	-0.0426	(0.0596)	0.0142	(0.0354)	-0.0411	(0.0597)
Founded1927	-0.0524	(0.0542)	-0.0077	(0.0345)	-0.0538	(0.0551)
Founded1928	-0.0202	(0.0550)	0.0690	(0.0339)	-0.0192	(0.0556)
Founded1929	-0.0309	(0.0543)	-0.0271	(0.0355)	-0.0273	(0.0552)
Founded1930	-0.0074	(0.0529)	0.0459	(0.0349)	-0.0056	(0.0534)
Founded1931	-0.0086	(0.0549)	-0.0002	(0.0372)	-0.0067	(0.0556)
Founded1932	-0.0261	(0.0558)	0.0289	(0.0357)	-0.0358	(0.0565)
Founded1933	0.0206	(0.0559)	0.0446	(0.0365)	0.0104	(0.0562)
Founded1934	-0.0479	(0.0532)	0.0183	(0.0350)	-0.0544	(0.0540)
Founded1935	0.0400	(0.0498)	0.0648	(0.0324)	0.0241	(0.0502)

Table A7: 24-month survival of cohorts 1920–45

Founded1936	0.0278	(0.0528)	0.0746	(0.0347)	0.0274	(0.0532)
Founded1937	0.0259	(0.0492)	0.0332	(0.0349)	0.0143	(0.0498)
Founded1938	0.0463	(0.0497)	0.0338	(0.0345)	0.0330	(0.0501)
Founded1939	0.0085	(0.0520)	0.0304	(0.0341)	-0.0174	(0.0521)
Founded1940	0.0328	(0.0510)	0.0773	(0.0328)	0.0131	(0.0513)
Founded1941	0.0330	(0.0480)	0.0388	(0.0317)	0.0074	(0.0485)
Founded1942	-0.0452	(0.0494)	0.0024	(0.0330)	-0.0559	(0.0498)
Founded1943	-0.0237	(0.0478)	0.0379	(0.0316)	-0.0294	(0.0482)
Founded1944	-0.0252	(0.0482)	0.0320	(0.0322)	-0.0299	(0.0487)
Founded1945	0.0333	(0.0454)	0.0723	(0.0311)	0.0278	(0.0460)
Constant	0.0679	(0.1320)	0.4190	(0.0416)	0.4945	(0.1210)
Observations	3,856		7,793		3,856	
R-squared	0.0783		0.0725		0.0659	

Table A8: 60-month survival of cohorts 1916–45  
assuming firms with survival information survived for 60 months

VARIABLES	(1) Sub-sample	(2) se	(3) Firms w/ k	(4) se	(5) Firms w/ k	(6) se
ln(capital)	-0.0111	(0.0051)				
Corporation	0.3853	(0.0274)	0.3779	(0.0207)	0.3628	(0.0253)
Limited partnership	-0.0389	(0.0188)	-0.0452	(0.0137)	-0.0447	(0.0186)
Share partnership	0.1083	(0.0364)	0.0844	(0.0326)	0.0878	(0.0351)
One general partner	0.0825	(0.0215)	0.0873	(0.0162)	0.0829	(0.0215)
3+ plus general partners	0.0037	(0.0190)	-0.0106	(0.0129)	0.0004	(0.0189)
Family firm	0.1742	(0.0187)	0.1938	(0.0125)	0.1680	(0.0184)
2+ experienced partners	-0.0746	(0.0226)	-0.0570	(0.0166)	-0.0820	(0.0223)
Pair with prior joint firm	0.0594	(0.0305)	0.0281	(0.0248)	0.0584	(0.0305)
Prior joint firm*Family firm	-0.0290	(0.0470)	-0.0448	(0.0365)	-0.0287	(0.0471)
Muslims + others	0.0372	(0.0341)	0.0296	(0.0283)	0.0365	(0.0340)
Only Muslims	0.1289	(0.0243)	0.1262	(0.0171)	0.1251	(0.0243)
Heterogenous non-Muslims	-0.0218	(0.0187)	-0.0308	(0.0133)	-0.0226	(0.0187)
Cairo	0.0295	(0.0137)	0.0410	(0.0096)	0.0300	(0.0137)
Mansoura	0.1110	(0.0311)	0.0999	(0.0235)	0.1150	(0.0310)
Construction	0.1193	(0.0767)	0.2422	(0.0403)	0.1121	(0.0764)
Cotton trade	0.1248	(0.0728)	0.2358	(0.0350)	0.1143	(0.0727)
Cotton manufacturing	0.0825	(0.0948)	0.2425	(0.0592)	0.0725	(0.0950)
Finance	0.1831	(0.0749)	0.2734	(0.0399)	0.1747	(0.0747)
Land	0.2155	(0.0831)	0.3672	(0.0504)	0.2076	(0.0830)
Manufacturing	0.1032	(0.0671)	0.2084	(0.0304)	0.1022	(0.0670)
Mining	0.2039	(0.0903)	0.3214	(0.0606)	0.2009	(0.0902)
Services	0.0782	(0.0675)	0.1994	(0.0304)	0.0795	(0.0674)
Transportation	0.1122	(0.0747)	0.2201	(0.0408)	0.1097	(0.0746)
Wholesale and retail	0.0867	(0.0659)	0.2138	(0.0285)	0.0868	(0.0659)
Founded1921	-0.0300	(0.0535)	0.0215	(0.0326)	-0.0308	(0.0535)
Founded1922	0.1198	(0.0420)	0.0591	(0.0277)	0.1223	(0.0420)
Founded1923	-0.0204	(0.0482)	-0.0005	(0.0299)	-0.0167	(0.0483)
Founded1924	-0.0205	(0.0491)	-0.0369	(0.0291)	-0.0215	(0.0491)
Founded1925	-0.0613	(0.0443)	-0.0420	(0.0278)	-0.0610	(0.0443)
Founded1926	-0.0692	(0.0501)	-0.0439	(0.0298)	-0.0695	(0.0502)
Founded1927	-0.0292	(0.0419)	-0.0284	(0.0283)	-0.0288	(0.0419)
Founded1928	-0.0195	(0.0449)	0.0269	(0.0292)	-0.0192	(0.0450)
Founded1929	0.0042	(0.0433)	-0.0067	(0.0290)	0.0036	(0.0433)
Founded1930	0.0489	(0.0410)	0.0551	(0.0290)	0.0479	(0.0410)
Founded1931	-0.0033	(0.0456)	0.0207	(0.0310)	-0.0037	(0.0455)
Founded1932	-0.0370	(0.0436)	-0.0418	(0.0304)	-0.0334	(0.0437)
Founded1933	0.0271	(0.0461)	0.0111	(0.0312)	0.0304	(0.0462)
Founded1934	-0.0387	(0.0410)	-0.0097	(0.0297)	-0.0360	(0.0409)

Table A8: 60-month survival of cohorts 1916–45  
assuming firms with survival information survived for 60 months

Founded1935	0.0199	(0.0382)	0.0213	(0.0274)	0.0247	(0.0382)
Founded1936	-0.0082	(0.0431)	0.0146	(0.0305)	-0.0076	(0.0431)
Founded1937	0.0342	(0.0368)	0.0210	(0.0295)	0.0376	(0.0368)
Founded1938	0.0410	(0.0380)	0.0306	(0.0294)	0.0449	(0.0381)
Founded1939	0.0028	(0.0394)	0.0191	(0.0285)	0.0101	(0.0393)
Founded1940	0.0062	(0.0382)	0.0406	(0.0275)	0.0121	(0.0381)
Founded1941	-0.0342	(0.0341)	-0.0288	(0.0255)	-0.0271	(0.0340)
Founded1942	-0.0396	(0.0345)	-0.0103	(0.0264)	-0.0365	(0.0346)
Founded1943	-0.0042	(0.0313)	0.0263	(0.0243)	-0.0026	(0.0314)
Founded1944	0.0236	(0.0315)	0.0443	(0.0247)	0.0247	(0.0315)
Founded1945	0.1616	(0.0267)	0.1736	(0.0217)	0.1631	(0.0267)
Constant	0.5930	(0.0885)	0.3242	(0.0305)	0.4688	(0.0672)
Observations	5,181		10,276		5,181	
R-squared	0.0767		0.0715		0.0759	



Table A9: 24-month survival of cohorts 1916–45  
assuming firms with no survival information survived for 24 months

VARIABLES	(1) Sub-sample	(2) se	(3) Firms w/ k	(4) se	(5) Firms w/ k	(6) se
ln(capital)	0.0162	(0.0039)				
Corporation	0.2061	(0.0209)	0.2548	(0.0149)	0.2391	(0.0194)
Limited partnership	-0.0054	(0.0160)	-0.0142	(0.0120)	0.0030	(0.0159)
Share partnership	0.0703	(0.0274)	0.0983	(0.0241)	0.1003	(0.0264)
One general partner	0.0407	(0.0179)	0.0656	(0.0139)	0.0401	(0.0179)
3+ plus general partners	-0.0204	(0.0162)	-0.0172	(0.0112)	-0.0157	(0.0161)
Family firm	0.1233	(0.0145)	0.1546	(0.0099)	0.1322	(0.0144)
2+ experienced partners	-0.0558	(0.0197)	-0.0274	(0.0146)	-0.0450	(0.0196)
Pair with prior joint firm	0.0424	(0.0262)	0.0276	(0.0218)	0.0438	(0.0262)
Prior joint firm×Family firm	-0.0238	(0.0359)	-0.0293	(0.0285)	-0.0241	(0.0358)
Muslims + others	-0.0095	(0.0298)	-0.0134	(0.0257)	-0.0083	(0.0298)
Only Muslims	0.0420	(0.0198)	0.0600	(0.0138)	0.0476	(0.0197)
Heterogenous non-Muslims	-0.0304	(0.0166)	-0.0293	(0.0120)	-0.0293	(0.0166)
Cairo	0.0096	(0.0114)	0.0251	(0.0082)	0.0088	(0.0114)
Mansoura	0.0602	(0.0258)	0.1020	(0.0183)	0.0543	(0.0259)
Construction	0.1061	(0.0700)	0.2073	(0.0368)	0.1167	(0.0698)
Cotton trade	0.0654	(0.0672)	0.1936	(0.0330)	0.0809	(0.0669)
Cotton manufacturing	0.0523	(0.0822)	0.2168	(0.0470)	0.0669	(0.0822)
Finance	0.1339	(0.0671)	0.2218	(0.0354)	0.1461	(0.0668)
Land	0.1282	(0.0713)	0.2584	(0.0409)	0.1398	(0.0714)
Manufacturing	0.0903	(0.0631)	0.1668	(0.0300)	0.0918	(0.0629)
Mining	0.1267	(0.0812)	0.2172	(0.0553)	0.1311	(0.0810)
Services	0.1010	(0.0633)	0.1699	(0.0299)	0.0991	(0.0631)
Transportation	0.0695	(0.0693)	0.1554	(0.0384)	0.0732	(0.0691)
Wholesale and retail	0.0901	(0.0622)	0.1769	(0.0285)	0.0901	(0.0620)
Founded1921	-0.0007	(0.0437)	0.0272	(0.0269)	0.0005	(0.0437)
Founded1922	0.0801	(0.0327)	0.0138	(0.0236)	0.0765	(0.0327)
Founded1923	0.0226	(0.0387)	-0.0188	(0.0256)	0.0172	(0.0384)
Founded1924	0.0185	(0.0391)	-0.0435	(0.0260)	0.0200	(0.0392)
Founded1925	0.0353	(0.0354)	-0.0057	(0.0238)	0.0350	(0.0357)
Founded1926	-0.0255	(0.0428)	-0.0186	(0.0252)	-0.0251	(0.0426)
Founded1927	-0.0168	(0.0356)	-0.0389	(0.0247)	-0.0175	(0.0358)
Founded1928	0.0065	(0.0370)	0.0233	(0.0243)	0.0061	(0.0370)
Founded1929	-0.0074	(0.0368)	-0.0519	(0.0257)	-0.0066	(0.0370)
Founded1930	0.0347	(0.0327)	0.0300	(0.0238)	0.0361	(0.0327)
Founded1931	0.0171	(0.0369)	-0.0051	(0.0261)	0.0177	(0.0370)
Founded1932	-0.0119	(0.0384)	-0.0063	(0.0257)	-0.0172	(0.0385)
Founded1933	0.0375	(0.0371)	0.0096	(0.0262)	0.0326	(0.0370)
Founded1934	-0.0146	(0.0351)	-0.0133	(0.0254)	-0.0185	(0.0353)

Table A9: 24-month survival of cohorts 1916–45  
assuming firms with no survival information survived for 24 months

Founded1935	0.0465	(0.0296)	0.0169	(0.0224)	0.0395	(0.0295)
Founded1936	0.0533	(0.0326)	0.0321	(0.0246)	0.0524	(0.0326)
Founded1937	0.0394	(0.0294)	0.0027	(0.0248)	0.0346	(0.0295)
Founded1938	0.0489	(0.0309)	-0.0156	(0.0257)	0.0432	(0.0309)
Founded1939	0.0084	(0.0331)	-0.0143	(0.0247)	-0.0024	(0.0330)
Founded1940	0.0391	(0.0311)	0.0363	(0.0224)	0.0305	(0.0311)
Founded1941	0.0177	(0.0283)	-0.0181	(0.0220)	0.0074	(0.0284)
Founded1942	-0.0401	(0.0304)	-0.0431	(0.0234)	-0.0447	(0.0304)
Founded1943	-0.0064	(0.0271)	0.0005	(0.0210)	-0.0088	(0.0271)
Founded1944	0.0045	(0.0271)	0.0075	(0.0212)	0.0030	(0.0272)
Founded1945	0.0609	(0.0230)	0.0571	(0.0189)	0.0587	(0.0231)
Constant	0.4704	(0.0769)	0.5537	(0.0299)	0.6524	(0.0630)
Observations	5,181		10,276		5,181	
R-squared	0.0489		0.0519		0.0463	

Table A10: 60-month survival of cohorts 1916–45  
assuming firms with no survival information dissolve within 12 months

VARIABLES	(1) Sub-sample	(2) se	(3) Firms w/ k	(4) se	(5) Firms w/ k	(6) se
ln(capital)	0.0391	(0.0053)				
Corporation	0.4088	(0.0297)	0.5087	(0.0227)	0.4883	(0.0275)
Limited partnership	-0.0321	(0.0189)	-0.0108	(0.0137)	-0.0117	(0.0188)
Share partnership	0.1102	(0.0395)	0.1924	(0.0352)	0.1826	(0.0382)
One general partner	0.0712	(0.0217)	0.0602	(0.0163)	0.0699	(0.0218)
3+ plus general partners	-0.0238	(0.0195)	-0.0064	(0.0131)	-0.0123	(0.0195)
Family firm	0.2289	(0.0197)	0.2673	(0.0133)	0.2505	(0.0196)
2+ experienced partners	-0.0216	(0.0229)	0.0230	(0.0167)	0.0044	(0.0227)
Pair with prior joint firm	0.0813	(0.0309)	0.0419	(0.0250)	0.0846	(0.0310)
Prior joint firm*Family firm	-0.0757	(0.0493)	-0.0792	(0.0377)	-0.0764	(0.0492)
Muslims + others	-0.0540	(0.0349)	-0.0513	(0.0284)	-0.0512	(0.0350)
Only Muslims	-0.0515	(0.0275)	-0.0379	(0.0196)	-0.0381	(0.0278)
Heterogenous non-Muslims	-0.0402	(0.0185)	-0.0520	(0.0130)	-0.0375	(0.0186)
Cairo	-0.0100	(0.0140)	0.0136	(0.0098)	-0.0119	(0.0141)
Mansoura	0.1143	(0.0348)	0.1042	(0.0253)	0.1002	(0.0349)
Construction	0.0666	(0.0685)	0.1348	(0.0392)	0.0923	(0.0694)
Cotton trade	0.1442	(0.0646)	0.1988	(0.0335)	0.1814	(0.0655)
Cotton manufacturing	0.0447	(0.0898)	0.1806	(0.0603)	0.0800	(0.0903)
Finance	0.1420	(0.0683)	0.2204	(0.0394)	0.1715	(0.0692)
Land	0.1702	(0.0828)	0.1847	(0.0618)	0.1979	(0.0840)
Manufacturing	0.1523	(0.0576)	0.1570	(0.0279)	0.1560	(0.0586)
Mining	0.0781	(0.0885)	0.0798	(0.0594)	0.0887	(0.0896)
Services	0.1182	(0.0578)	0.1239	(0.0278)	0.1137	(0.0589)
Transportation	0.1416	(0.0679)	0.1634	(0.0395)	0.1503	(0.0686)
Wholesale and retail	0.1462	(0.0561)	0.1630	(0.0259)	0.1461	(0.0571)
Founded1921	-0.0483	(0.0537)	0.0078	(0.0329)	-0.0455	(0.0540)
Founded1922	0.0383	(0.0456)	-0.0139	(0.0281)	0.0297	(0.0462)
Founded1923	-0.1041	(0.0467)	-0.0430	(0.0293)	-0.1170	(0.0464)
Founded1924	0.0662	(0.0493)	0.0466	(0.0287)	0.0698	(0.0496)
Founded1925	-0.0403	(0.0439)	0.0043	(0.0274)	-0.0412	(0.0444)
Founded1926	0.0086	(0.0488)	-0.0100	(0.0293)	0.0095	(0.0490)
Founded1927	0.0049	(0.0419)	0.0214	(0.0282)	0.0033	(0.0423)
Founded1928	0.0312	(0.0456)	0.0973	(0.0301)	0.0301	(0.0457)
Founded1929	0.0673	(0.0438)	0.0330	(0.0290)	0.0693	(0.0447)
Founded1930	0.0426	(0.0429)	0.0362	(0.0296)	0.0462	(0.0429)
Founded1931	0.0460	(0.0453)	-0.0095	(0.0306)	0.0475	(0.0462)
Founded1932	0.0468	(0.0448)	-0.0037	(0.0305)	0.0338	(0.0454)
Founded1933	0.0877	(0.0477)	0.0454	(0.0318)	0.0760	(0.0479)
Founded1934	-0.0013	(0.0390)	0.0391	(0.0296)	-0.0107	(0.0397)

Table A10: 60-month survival of cohorts 1916–45  
assuming firms with no survival information dissolve within 12 months

Founded1935	0.1027	(0.0398)	0.1025	(0.0280)	0.0857	(0.0398)
Founded1936	0.0116	(0.0433)	0.0647	(0.0310)	0.0094	(0.0434)
Founded1937	0.0977	(0.0382)	0.0637	(0.0300)	0.0860	(0.0384)
Founded1938	0.1456	(0.0393)	0.1355	(0.0297)	0.1320	(0.0390)
Founded1939	0.1184	(0.0409)	0.1078	(0.0291)	0.0925	(0.0406)
Founded1940	0.1009	(0.0383)	0.1018	(0.0279)	0.0801	(0.0384)
Founded1941	0.1223	(0.0350)	0.0877	(0.0259)	0.0974	(0.0351)
Founded1942	0.0844	(0.0347)	0.0842	(0.0266)	0.0733	(0.0348)
Founded1943	0.0733	(0.0318)	0.0869	(0.0247)	0.0676	(0.0319)
Founded1944	0.0533	(0.0320)	0.0588	(0.0251)	0.0495	(0.0321)
Founded1945	0.1595	(0.0292)	0.1174	(0.0240)	0.1542	(0.0295)
Constant	-0.2197	(0.0820)	0.1826	(0.0281)	0.2190	(0.0588)
Observations	5,181		10,276		5,181	
R-squared	0.1219		0.0981		0.1126	

Table A11: 24-month survival of cohorts 1916–45  
assuming firms with no survival information dissolved within 12 months

VARIABLES	(1) Sub-sample	(2) se	(3) Firms w/ k	(4) se	(5) Firms w/ k	(6) se
s24_1						
ln(capital)	0.0664	(0.0048)				
Corporation	0.2296	(0.0263)	0.3856	(0.0193)	0.3646	(0.0242)
Limited partnership	0.0013	(0.0181)	0.0201	(0.0133)	0.0360	(0.0182)
Share partnership	0.0722	(0.0349)	0.2064	(0.0308)	0.1951	(0.0340)
One general partner	0.0293	(0.0205)	0.0384	(0.0159)	0.0271	(0.0209)
3+ plus general partners	-0.0479	(0.0186)	-0.0131	(0.0127)	-0.0284	(0.0187)
Family firm	0.1780	(0.0175)	0.2281	(0.0120)	0.2147	(0.0175)
2+ experienced partners	-0.0027	(0.0216)	0.0527	(0.0159)	0.0413	(0.0215)
Pair with prior joint firm	0.0643	(0.0285)	0.0415	(0.0237)	0.0701	(0.0287)
Prior joint firm*Family firm	-0.0706	(0.0414)	-0.0637	(0.0323)	-0.0718	(0.0412)
Muslims + others	-0.1007	(0.0359)	-0.0943	(0.0297)	-0.0960	(0.0357)
Only Muslims	-0.1383	(0.0269)	-0.1042	(0.0195)	-0.1156	(0.0275)
Heterogenous non-Muslims	-0.0488	(0.0184)	-0.0505	(0.0132)	-0.0442	(0.0186)
Cairo	-0.0299	(0.0132)	-0.0024	(0.0096)	-0.0331	(0.0135)
Mansoura	0.0634	(0.0331)	0.1062	(0.0235)	0.0395	(0.0336)
Construction	0.0533	(0.0762)	0.0999	(0.0411)	0.0970	(0.0765)
Cotton trade	0.0848	(0.0708)	0.1567	(0.0351)	0.1479	(0.0712)
Cotton manufacturing	0.0144	(0.0883)	0.1548	(0.0555)	0.0744	(0.0913)
Finance	0.0928	(0.0737)	0.1688	(0.0391)	0.1428	(0.0740)
Land	0.0829	(0.0809)	0.0760	(0.0598)	0.1300	(0.0829)
Manufacturing	0.1393	(0.0661)	0.1154	(0.0309)	0.1456	(0.0662)
Mining	0.0009	(0.0948)	-0.0244	(0.0631)	0.0189	(0.0952)
Services	0.1410	(0.0663)	0.0944	(0.0309)	0.1333	(0.0665)
Transportation	0.0989	(0.0744)	0.0987	(0.0411)	0.1139	(0.0743)
Wholesale and retail	0.1495	(0.0649)	0.1261	(0.0291)	0.1494	(0.0650)
Founded1921	-0.0190	(0.0525)	0.0135	(0.0324)	-0.0143	(0.0532)
Founded1922	-0.0014	(0.0448)	-0.0592	(0.0290)	-0.0161	(0.0459)
Founded1923	-0.0612	(0.0488)	-0.0613	(0.0299)	-0.0830	(0.0487)
Founded1924	0.1053	(0.0440)	0.0400	(0.0286)	0.1114	(0.0446)
Founded1925	0.0563	(0.0425)	0.0407	(0.0272)	0.0548	(0.0440)
Founded1926	0.0524	(0.0475)	0.0153	(0.0290)	0.0539	(0.0478)
Founded1927	0.0173	(0.0398)	0.0109	(0.0276)	0.0146	(0.0411)
Founded1928	0.0572	(0.0421)	0.0938	(0.0280)	0.0554	(0.0432)
Founded1929	0.0557	(0.0408)	-0.0121	(0.0287)	0.0591	(0.0427)
Founded1930	0.0284	(0.0406)	0.0110	(0.0292)	0.0345	(0.0409)
Founded1931	0.0664	(0.0425)	-0.0354	(0.0308)	0.0689	(0.0438)
Founded1932	0.0719	(0.0427)	0.0317	(0.0303)	0.0500	(0.0444)
Founded1933	0.0980	(0.0441)	0.0438	(0.0307)	0.0781	(0.0447)

Table A11: 24-month survival of cohorts 1916–45  
assuming firms with no survival information dissolved within 12 months

Founded1934	0.0227	(0.0382)	0.0355	(0.0288)	0.0068	(0.0395)
Founded1935	0.1293	(0.0356)	0.0981	(0.0259)	0.1004	(0.0361)
Founded1936	0.0731	(0.0413)	0.0823	(0.0294)	0.0693	(0.0420)
Founded1937	0.1029	(0.0356)	0.0454	(0.0288)	0.0830	(0.0362)
Founded1938	0.1535	(0.0359)	0.0893	(0.0280)	0.1304	(0.0359)
Founded1939	0.1240	(0.0384)	0.0744	(0.0279)	0.0800	(0.0382)
Founded1940	0.1339	(0.0363)	0.0975	(0.0267)	0.0985	(0.0367)
Founded1941	0.1742	(0.0321)	0.0985	(0.0246)	0.1318	(0.0325)
Founded1942	0.0839	(0.0329)	0.0514	(0.0258)	0.0650	(0.0334)
Founded1943	0.0710	(0.0307)	0.0610	(0.0242)	0.0615	(0.0310)
Founded1944	0.0342	(0.0314)	0.0221	(0.0249)	0.0278	(0.0317)
Founded1945	0.0587	(0.0282)	0.0010	(0.0238)	0.0497	(0.0287)
Constant	-0.3423	(0.0858)	0.4121	(0.0310)	0.4026	(0.0663)
Observations	5,181		10,276		5,181	
R-squared	0.1174		0.0793		0.0874	

Table A12: 60-month survival of cohorts 1916–45  
Only general and limited partnerships

VARIABLES	(1) Sub-sample	(2) se	(3) Firms w/ k	(4) se	(5) Firms w/ k	(6) se
ln(capital)	0.0142	(0.0063)				
Limited partnership	-0.0472	(0.0209)	-0.0387	(0.0149)	-0.0398	(0.0207)
One general partner	0.0937	(0.0246)	0.0916	(0.0182)	0.0936	(0.0246)
3+ plus general partners	-0.0053	(0.0215)	-0.0085	(0.0142)	-0.0012	(0.0215)
Family firm	0.2201	(0.0215)	0.2567	(0.0140)	0.2278	(0.0212)
2+ experienced partners	-0.0594	(0.0264)	-0.0215	(0.0184)	-0.0507	(0.0261)
Pair with prior joint firm	0.0734	(0.0431)	0.0278	(0.0311)	0.0739	(0.0432)
Prior joint firm*Family firm	-0.0488	(0.0593)	-0.0651	(0.0426)	-0.0475	(0.0593)
Muslims + others	-0.0334	(0.0526)	-0.0256	(0.0387)	-0.0327	(0.0527)
Only Muslims	0.0847	(0.0325)	0.0853	(0.0223)	0.0922	(0.0324)
Heterogenous non-Muslims	-0.0476	(0.0219)	-0.0551	(0.0150)	-0.0463	(0.0219)
Cairo	0.0074	(0.0166)	0.0303	(0.0111)	0.0065	(0.0166)
Mansoura	0.1303	(0.0370)	0.1142	(0.0266)	0.1239	(0.0369)
Construction	0.1173	(0.0891)	0.2120	(0.0457)	0.1257	(0.0895)
Cotton trade	0.2117	(0.0811)	0.2650	(0.0370)	0.2265	(0.0813)
Cotton manufacturing	0.1011	(0.1266)	0.2539	(0.0728)	0.1169	(0.1261)
Finance	0.2433	(0.0912)	0.2850	(0.0462)	0.2524	(0.0916)
Land	0.3297	(0.1622)	0.4089	(0.0973)	0.3430	(0.1630)
Manufacturing	0.1850	(0.0733)	0.2138	(0.0312)	0.1869	(0.0737)
Mining	0.1333	(0.1584)	0.1759	(0.0977)	0.1394	(0.1589)
Services	0.1382	(0.0735)	0.1812	(0.0310)	0.1368	(0.0739)
Transportation	0.1783	(0.0881)	0.2185	(0.0473)	0.1796	(0.0884)
Wholesale and retail	0.1653	(0.0715)	0.2156	(0.0287)	0.1654	(0.0720)
Founded1921	-0.0376	(0.0636)	0.0251	(0.0376)	-0.0362	(0.0637)
Founded1922	0.0922	(0.0621)	0.0254	(0.0343)	0.0892	(0.0622)
Founded1923	-0.0772	(0.0621)	-0.0207	(0.0347)	-0.0826	(0.0616)
Founded1924	0.0283	(0.0567)	0.0059	(0.0316)	0.0282	(0.0568)
Founded1925	-0.0864	(0.0541)	-0.0287	(0.0312)	-0.0863	(0.0543)
Founded1926	-0.0220	(0.0633)	-0.0158	(0.0342)	-0.0192	(0.0633)
Founded1927	-0.0038	(0.0518)	0.0036	(0.0323)	-0.0040	(0.0519)
Founded1928	0.0173	(0.0536)	0.0791	(0.0327)	0.0174	(0.0535)
Founded1929	0.0344	(0.0520)	0.0125	(0.0331)	0.0355	(0.0523)
Founded1930	0.0652	(0.0528)	0.0584	(0.0349)	0.0652	(0.0529)
Founded1931	0.0068	(0.0549)	-0.0042	(0.0369)	0.0089	(0.0553)
Founded1932	-0.0128	(0.0520)	-0.0333	(0.0345)	-0.0177	(0.0520)
Founded1933	0.0589	(0.0548)	0.0321	(0.0358)	0.0553	(0.0548)
Founded1934	-0.0529	(0.0513)	0.0056	(0.0347)	-0.0565	(0.0515)
Founded1935	0.0783	(0.0457)	0.0742	(0.0306)	0.0711	(0.0455)
Founded1936	-0.0153	(0.0546)	0.0426	(0.0353)	-0.0160	(0.0545)

Table A12: 60-month survival of cohorts 1916–45  
Only general and limited partnerships

Founded1937	0.0539	(0.0471)	0.0354	(0.0353)	0.0488	(0.0472)
Founded1938	0.0967	(0.0470)	0.0860	(0.0335)	0.0902	(0.0467)
Founded1939	0.0493	(0.0475)	0.0600	(0.0323)	0.0388	(0.0471)
Founded1940	0.0374	(0.0445)	0.0698	(0.0311)	0.0297	(0.0444)
Founded1941	0.0414	(0.0380)	0.0307	(0.0277)	0.0312	(0.0379)
Founded1942	0.0018	(0.0391)	0.0320	(0.0292)	-0.0030	(0.0390)
Founded1943	0.0275	(0.0362)	0.0593	(0.0273)	0.0245	(0.0361)
Founded1944	0.0316	(0.0374)	0.0548	(0.0287)	0.0292	(0.0374)
Founded1945	0.2096	(0.0338)	0.1963	(0.0279)	0.2064	(0.0339)
Constant	0.1408	(0.1011)	0.2202	(0.0311)	0.3014	(0.0733)
Observations	3,917		8,198		3,917	
R-squared	0.0686		0.0757		0.0674	



Table A13: 60-month survival of cohorts 1916–45  
Only general partnerships

VARIABLES	(1) Sub-sample	(2) se	(3) Firms w/ k	(4) se	(5) Firms w/ k	(6) se
s60						
ln(capital)	0.0072	(0.0088)				
One general partner	0.3092	(0.0892)	0.4657	(0.0535)	0.3128	(0.0892)
3+ plus general partners	-0.0016	(0.0259)	-0.0112	(0.0161)	0.0003	(0.0258)
Family firm	0.2687	(0.0273)	0.2905	(0.0166)	0.2726	(0.0269)
2+ experienced partners	-0.0375	(0.0364)	0.0085	(0.0230)	-0.0324	(0.0359)
Pair with prior joint firm	0.0846	(0.0564)	0.0199	(0.0383)	0.0853	(0.0564)
Prior joint firm×Family firm	-0.0825	(0.0733)	-0.0996	(0.0510)	-0.0834	(0.0732)
Muslims + others	-0.0376	(0.0641)	0.0113	(0.0460)	-0.0374	(0.0642)
Only Muslims	0.0993	(0.0456)	0.0890	(0.0282)	0.1029	(0.0454)
Heterogenous non-Muslims	-0.0489	(0.0286)	-0.0632	(0.0180)	-0.0486	(0.0285)
Cairo	0.0132	(0.0242)	0.0272	(0.0146)	0.0133	(0.0242)
Mansoura	0.1216	(0.0481)	0.1045	(0.0326)	0.1205	(0.0481)
Construction	0.0310	(0.1413)	0.2258	(0.0557)	0.0331	(0.1410)
Cotton trade	0.3056	(0.1394)	0.3243	(0.0494)	0.3114	(0.1390)
Cotton manufacturing	0.1635	(0.2197)	0.3547	(0.0951)	0.1691	(0.2193)
Finance	0.0518	(0.1571)	0.2840	(0.0600)	0.0534	(0.1568)
Land	0.2060	(0.2379)	0.3907	(0.1192)	0.2127	(0.2370)
Manufacturing	0.0976	(0.1251)	0.2206	(0.0378)	0.0965	(0.1248)
Mining	0.0299	(0.2295)	0.1850	(0.1253)	0.0302	(0.2299)
Services	0.0734	(0.1260)	0.2041	(0.0376)	0.0703	(0.1257)
Transportation	0.0727	(0.1490)	0.2330	(0.0656)	0.0735	(0.1488)
Wholesale and retail	0.0645	(0.1234)	0.2170	(0.0342)	0.0630	(0.1231)
Founded1921	-0.0634	(0.0947)	0.0576	(0.0491)	-0.0615	(0.0946)
Founded1922	0.0148	(0.1203)	0.0247	(0.0440)	0.0154	(0.1207)
Founded1923	-0.0295	(0.1162)	-0.0052	(0.0468)	-0.0343	(0.1161)
Founded1924	-0.0210	(0.1127)	-0.0163	(0.0400)	-0.0167	(0.1121)
Founded1925	-0.0458	(0.0849)	-0.0207	(0.0401)	-0.0469	(0.0849)
Founded1926	0.0242	(0.0907)	-0.0501	(0.0427)	0.0261	(0.0903)
Founded1927	0.0139	(0.0723)	0.0077	(0.0425)	0.0121	(0.0723)
Founded1928	0.0734	(0.0831)	0.0803	(0.0445)	0.0735	(0.0825)
Founded1929	-0.0248	(0.0838)	-0.0464	(0.0455)	-0.0245	(0.0837)
Founded1930	-0.0582	(0.0749)	-0.0445	(0.0460)	-0.0595	(0.0751)
Founded1931	0.0098	(0.0908)	-0.0338	(0.0509)	0.0093	(0.0909)
Founded1932	0.0525	(0.0750)	-0.0097	(0.0487)	0.0484	(0.0750)
Founded1933	0.0291	(0.0817)	0.0081	(0.0496)	0.0265	(0.0817)
Founded1934	-0.0640	(0.0763)	-0.0038	(0.0501)	-0.0679	(0.0761)
Founded1935	0.0413	(0.0646)	0.0894	(0.0407)	0.0371	(0.0641)
Founded1936	0.0098	(0.0762)	0.0616	(0.0462)	0.0089	(0.0761)

Table A13: 60-month survival of cohorts 1916–45  
Only general partnerships

Founded1937	-0.0135	(0.0638)	-0.0030	(0.0455)	-0.0180	(0.0636)
Founded1938	0.0826	(0.0668)	0.0995	(0.0458)	0.0781	(0.0666)
Founded1939	0.0477	(0.0667)	0.0705	(0.0419)	0.0417	(0.0664)
Founded1940	0.0671	(0.0572)	0.0879	(0.0378)	0.0619	(0.0568)
Founded1941	0.1021	(0.0540)	0.0535	(0.0355)	0.0951	(0.0535)
Founded1942	0.0051	(0.0562)	0.0316	(0.0387)	-0.0002	(0.0557)
Founded1943	0.0486	(0.0501)	0.0801	(0.0349)	0.0458	(0.0499)
Founded1944	0.0352	(0.0545)	0.0695	(0.0385)	0.0330	(0.0545)
Founded1945	0.2116	(0.0505)	0.1728	(0.0385)	0.2083	(0.0506)
Constant	0.2800	(0.1617)	0.2023	(0.0379)	0.3637	(0.1238)
Observations	1,843		4,548		1,843	
R-squared	0.1044		0.1117		0.1040	

Table A14: 60-month survival of cohorts 1916–45  
Firms with less than median capital

VARIABLES	(1) Sub-sample	(2) se	(3) Firms w/ k	(4) se	(5) Firms w/ k	(6) se
s60						
ln(capital)	-0.0010	(0.0132)				
Corporation	0.4268	(0.1093)	0.4272	(0.1091)	0.4272	(0.1091)
Limited partnership	-0.0837	(0.0305)	-0.0840	(0.0303)	-0.0840	(0.0303)
Share partnership	0.1198	(0.1451)	0.1190	(0.1447)	0.1190	(0.1447)
One general partner	0.1308	(0.0344)	0.1309	(0.0344)	0.1309	(0.0344)
3+ plus general partners	-0.0044	(0.0304)	-0.0045	(0.0303)	-0.0045	(0.0303)
Family firm	0.2274	(0.0294)	0.2273	(0.0292)	0.2273	(0.0292)
2+ experienced partners	-0.0779	(0.0398)	-0.0782	(0.0397)	-0.0782	(0.0397)
Pair with prior joint firm	0.1157	(0.0682)	0.1158	(0.0682)	0.1158	(0.0682)
Prior joint firm×Family firm	0.0145	(0.0920)	0.0145	(0.0920)	0.0145	(0.0920)
Muslims + others	-0.0834	(0.0653)	-0.0835	(0.0653)	-0.0835	(0.0653)
Only Muslims	0.0768	(0.0499)	0.0767	(0.0499)	0.0767	(0.0499)
Heterogenous non-Muslims	-0.0777	(0.0290)	-0.0777	(0.0290)	-0.0777	(0.0290)
Cairo	0.0226	(0.0228)	0.0225	(0.0227)	0.0225	(0.0227)
Mansoura	0.1064	(0.0478)	0.1064	(0.0478)	0.1064	(0.0478)
Construction	0.0255	(0.1333)	0.0255	(0.1333)	0.0255	(0.1333)
Cotton trade	0.3091	(0.1231)	0.3086	(0.1228)	0.3086	(0.1228)
Cotton manufacturing	0.1490	(0.2280)	0.1487	(0.2277)	0.1487	(0.2277)
Finance	0.2339	(0.1356)	0.2337	(0.1355)	0.2337	(0.1355)
Land	0.2309	(0.2239)	0.2310	(0.2239)	0.2310	(0.2239)
Manufacturing	0.1957	(0.1012)	0.1956	(0.1011)	0.1956	(0.1011)
Mining	0.1073	(0.2000)	0.1067	(0.1998)	0.1067	(0.1998)
Services	0.1371	(0.1013)	0.1372	(0.1012)	0.1372	(0.1012)
Transportation	0.2403	(0.1205)	0.2402	(0.1204)	0.2402	(0.1204)
Wholesale and retail	0.1587	(0.0990)	0.1587	(0.0989)	0.1587	(0.0989)
Founded1921	-0.0779	(0.0932)	-0.0777	(0.0932)	-0.0777	(0.0932)
Founded1922	0.1498	(0.0792)	0.1499	(0.0792)	0.1499	(0.0792)
Founded1923	0.0162	(0.0816)	0.0166	(0.0815)	0.0166	(0.0815)
Founded1924	-0.0053	(0.0869)	-0.0052	(0.0869)	-0.0052	(0.0869)
Founded1925	-0.0422	(0.0761)	-0.0421	(0.0760)	-0.0421	(0.0760)
Founded1926	0.0181	(0.0937)	0.0179	(0.0936)	0.0179	(0.0936)
Founded1927	0.0413	(0.0749)	0.0413	(0.0749)	0.0413	(0.0749)
Founded1928	0.0721	(0.0745)	0.0722	(0.0745)	0.0722	(0.0745)
Founded1929	0.0222	(0.0753)	0.0222	(0.0752)	0.0222	(0.0752)
Founded1930	0.0211	(0.0816)	0.0213	(0.0815)	0.0213	(0.0815)
Founded1931	-0.0330	(0.0813)	-0.0329	(0.0812)	-0.0329	(0.0812)
Founded1932	-0.0049	(0.0692)	-0.0046	(0.0691)	-0.0046	(0.0691)
Founded1933	0.1015	(0.0744)	0.1016	(0.0743)	0.1016	(0.0743)

Table A14: 60-month survival of cohorts 1916–45  
Firms with less than median capital

Founded1934	-0.0898	(0.0708)	-0.0896	(0.0707)	-0.0896	(0.0707)
Founded1935	0.0455	(0.0600)	0.0457	(0.0599)	0.0457	(0.0599)
Founded1936	0.0252	(0.0772)	0.0254	(0.0772)	0.0254	(0.0772)
Founded1937	0.0195	(0.0647)	0.0198	(0.0645)	0.0198	(0.0645)
Founded1938	0.1148	(0.0605)	0.1150	(0.0603)	0.1150	(0.0603)
Founded1939	0.0992	(0.0585)	0.0997	(0.0582)	0.0997	(0.0582)
Founded1940	0.0392	(0.0552)	0.0394	(0.0551)	0.0394	(0.0551)
Founded1941	0.0120	(0.0478)	0.0124	(0.0476)	0.0124	(0.0476)
Founded1942	0.0374	(0.0516)	0.0376	(0.0515)	0.0376	(0.0515)
Founded1943	0.0504	(0.0478)	0.0505	(0.0477)	0.0505	(0.0477)
Founded1944	0.0259	(0.0513)	0.0260	(0.0512)	0.0260	(0.0512)
Founded1945	0.1984	(0.0463)	0.1985	(0.0463)	0.1985	(0.0463)
Constant	0.3057	(0.1719)	0.2946	(0.1015)	0.2946	(0.1015)
Observations	2,204		2,204		2,204	
R-squared	0.0799		0.0799		0.0799	

Table A15: 60-month survival of cohorts 1916–45  
Firms with more than median capital

VARIABLES	(1) Sub-sample	(2) se	(3) Firms w/ k	(4) se	(5) Firms w/ k	(6) se
s60						
ln(capital)	0.0328	(0.0107)				
Corporation	0.3805	(0.0364)	0.4149	(0.0348)	0.4149	(0.0348)
Limited partnership	-0.0110	(0.0284)	-0.0070	(0.0284)	-0.0070	(0.0284)
Share partnership	0.1349	(0.0447)	0.1551	(0.0441)	0.1551	(0.0441)
One general partner	0.0570	(0.0332)	0.0580	(0.0332)	0.0580	(0.0332)
3+ plus general partners	-0.0121	(0.0295)	-0.0078	(0.0295)	-0.0078	(0.0295)
Family firm	0.2012	(0.0287)	0.2105	(0.0285)	0.2105	(0.0285)
2+ experienced partners	-0.0540	(0.0294)	-0.0468	(0.0293)	-0.0468	(0.0293)
Pair with prior joint firm	0.0440	(0.0355)	0.0475	(0.0354)	0.0475	(0.0354)
Prior joint firm×Family firm	-0.0753	(0.0584)	-0.0763	(0.0585)	-0.0763	(0.0585)
Muslims + others	0.0594	(0.0474)	0.0570	(0.0470)	0.0570	(0.0470)
Only Muslims	0.0665	(0.0407)	0.0779	(0.0405)	0.0779	(0.0405)
Heterogenous non-Muslims	0.0101	(0.0286)	0.0103	(0.0286)	0.0103	(0.0286)
Cairo	-0.0046	(0.0204)	-0.0050	(0.0204)	-0.0050	(0.0204)
Mansoura	0.1769	(0.0519)	0.1675	(0.0517)	0.1675	(0.0517)
Construction	0.1535	(0.1138)	0.1689	(0.1152)	0.1689	(0.1152)
Cotton trade	0.1218	(0.1077)	0.1413	(0.1091)	0.1413	(0.1091)
Cotton manufacturing	0.0805	(0.1295)	0.1040	(0.1295)	0.1040	(0.1295)
Finance	0.1814	(0.1113)	0.2062	(0.1123)	0.2062	(0.1123)
Land	0.2355	(0.1179)	0.2608	(0.1183)	0.2608	(0.1183)
Manufacturing	0.1301	(0.1035)	0.1349	(0.1050)	0.1349	(0.1050)
Mining	0.2540	(0.1226)	0.2580	(0.1245)	0.2580	(0.1245)
Services	0.1318	(0.1045)	0.1355	(0.1059)	0.1355	(0.1059)
Transportation	0.1251	(0.1114)	0.1282	(0.1126)	0.1282	(0.1126)
Wholesale and retail	0.1553	(0.1016)	0.1588	(0.1031)	0.1588	(0.1031)
Founded1921	-0.0114	(0.0826)	-0.0070	(0.0828)	-0.0070	(0.0828)
Founded1922	0.0583	(0.0688)	0.0599	(0.0697)	0.0599	(0.0697)
Founded1923	-0.1935	(0.0766)	-0.1905	(0.0779)	-0.1905	(0.0779)
Founded1924	0.0232	(0.0674)	0.0235	(0.0671)	0.0235	(0.0671)
Founded1925	-0.0679	(0.0633)	-0.0651	(0.0636)	-0.0651	(0.0636)
Founded1926	-0.0578	(0.0656)	-0.0623	(0.0654)	-0.0623	(0.0654)
Founded1927	-0.0416	(0.0596)	-0.0442	(0.0602)	-0.0442	(0.0602)
Founded1928	-0.0528	(0.0639)	-0.0482	(0.0638)	-0.0482	(0.0638)
Founded1929	0.0515	(0.0605)	0.0585	(0.0603)	0.0585	(0.0603)
Founded1930	0.0540	(0.0589)	0.0562	(0.0587)	0.0562	(0.0587)
Founded1931	0.0492	(0.0613)	0.0523	(0.0622)	0.0523	(0.0622)
Founded1932	0.0213	(0.0644)	0.0170	(0.0643)	0.0170	(0.0643)
Founded1933	0.0232	(0.0711)	0.0205	(0.0714)	0.0205	(0.0714)

Table A15: 60-month survival of cohorts 1916–45  
Firms with more than median capital

Founded1934	0.0331	(0.0552)	0.0315	(0.0555)	0.0315	(0.0555)
Founded1935	0.1054	(0.0595)	0.0987	(0.0595)	0.0987	(0.0595)
Founded1936	-0.0142	(0.0619)	-0.0148	(0.0617)	-0.0148	(0.0617)
Founded1937	0.1133	(0.0520)	0.1096	(0.0520)	0.1096	(0.0520)
Founded1938	0.0665	(0.0562)	0.0681	(0.0562)	0.0681	(0.0562)
Founded1939	0.0161	(0.0629)	0.0075	(0.0625)	0.0075	(0.0625)
Founded1940	0.0758	(0.0643)	0.0679	(0.0643)	0.0679	(0.0643)
Founded1941	0.1120	(0.0595)	0.1038	(0.0598)	0.1038	(0.0598)
Founded1942	0.0144	(0.0545)	0.0133	(0.0545)	0.0133	(0.0545)
Founded1943	0.0085	(0.0510)	0.0083	(0.0511)	0.0083	(0.0511)
Founded1944	0.0678	(0.0492)	0.0682	(0.0493)	0.0682	(0.0493)
Founded1945	0.1950	(0.0423)	0.1967	(0.0424)	0.1967	(0.0424)
Constant	-0.0920	(0.1700)	0.3203	(0.1047)	0.3203	(0.1047)
Observations	2,203		2,203		2,203	
R-squared	0.1374		0.1342		0.1342	

Table A16: 60-month survival of cohorts 1916–45  
Wholesale and retail firms only

VARIABLES	(1) Sub-sample	(2) se	(3) Firms w/ k	(4) se	(5) Firms w/ k	(6) se
s60						
ln(capital)	0.0109	(0.0084)				
Corporation	0.5100	(0.0492)	0.5209	(0.0363)	0.5312	(0.0460)
Limited partnership	-0.0141	(0.0291)	-0.0177	(0.0207)	-0.0095	(0.0289)
Share partnership	0.1594	(0.0616)	0.1797	(0.0553)	0.1784	(0.0596)
One general partner	0.1101	(0.0333)	0.0851	(0.0248)	0.1103	(0.0334)
3+ plus general partners	0.0433	(0.0300)	0.0102	(0.0195)	0.0475	(0.0299)
Family firm	0.2494	(0.0283)	0.2600	(0.0184)	0.2557	(0.0277)
2+ experienced partners	-0.0934	(0.0357)	-0.0388	(0.0253)	-0.0874	(0.0355)
Pair with prior joint firm	0.0620	(0.0583)	0.0145	(0.0435)	0.0645	(0.0583)
Prior joint firm*Family firm	-0.0830	(0.0776)	-0.0570	(0.0576)	-0.0843	(0.0774)
Muslims + others	0.0415	(0.0616)	0.0156	(0.0483)	0.0424	(0.0614)
Only Muslims	0.0580	(0.0416)	0.0814	(0.0284)	0.0629	(0.0416)
Heterogenous non-Muslims	-0.0719	(0.0301)	-0.0652	(0.0207)	-0.0715	(0.0301)
Cairo	0.0066	(0.0219)	0.0217	(0.0147)	0.0061	(0.0219)
Mansoura	0.2028	(0.0481)	0.1507	(0.0371)	0.1987	(0.0478)
Founded1921	-0.0786	(0.0772)	-0.0265	(0.0481)	-0.0779	(0.0774)
Founded1922	0.0598	(0.0679)	0.0172	(0.0422)	0.0582	(0.0681)
Founded1923	-0.1848	(0.0754)	-0.0551	(0.0441)	-0.1875	(0.0749)
Founded1924	0.0150	(0.0713)	0.0264	(0.0419)	0.0166	(0.0712)
Founded1925	0.0253	(0.0660)	0.0192	(0.0403)	0.0269	(0.0662)
Founded1926	-0.0635	(0.0829)	-0.0601	(0.0468)	-0.0618	(0.0828)
Founded1927	-0.0829	(0.0658)	-0.0349	(0.0417)	-0.0834	(0.0661)
Founded1928	0.0430	(0.0639)	0.1060	(0.0422)	0.0431	(0.0637)
Founded1929	0.0527	(0.0685)	0.0166	(0.0460)	0.0510	(0.0685)
Founded1930	0.0390	(0.0653)	0.0740	(0.0449)	0.0389	(0.0652)
Founded1931	0.0060	(0.0694)	0.0236	(0.0472)	0.0066	(0.0693)
Founded1932	0.0132	(0.0668)	-0.0154	(0.0468)	0.0099	(0.0670)
Founded1933	0.0775	(0.0737)	0.0625	(0.0465)	0.0749	(0.0740)
Founded1934	-0.0282	(0.0661)	0.0222	(0.0441)	-0.0310	(0.0664)
Founded1935	0.1631	(0.0586)	0.0800	(0.0403)	0.1571	(0.0584)
Founded1936	0.0335	(0.0729)	0.0792	(0.0493)	0.0336	(0.0726)
Founded1937	0.1056	(0.0579)	0.0645	(0.0468)	0.1010	(0.0578)
Founded1938	0.1102	(0.0629)	0.0662	(0.0454)	0.1053	(0.0625)
Founded1939	0.0648	(0.0585)	0.0728	(0.0422)	0.0547	(0.0578)
Founded1940	0.0644	(0.0574)	0.0753	(0.0404)	0.0571	(0.0570)
Founded1941	0.0529	(0.0505)	0.0710	(0.0376)	0.0454	(0.0502)
Founded1942	0.0314	(0.0553)	0.0496	(0.0412)	0.0250	(0.0550)
Founded1943	0.0693	(0.0513)	0.1104	(0.0380)	0.0673	(0.0512)

Table A16: 60-month survival of cohorts 1916–45  
Wholesale and retail firms only

Founded1944	0.0787	(0.0568)	0.0823	(0.0431)	0.0755	(0.0568)
Founded1945	0.2157	(0.0450)	0.2102	(0.0373)	0.2136	(0.0451)
Constant	0.3015	(0.1031)	0.4222	(0.0221)	0.4254	(0.0338)
Observations	2,140		4,480		2,140	
R-squared	0.1081		0.0881		0.1074	



Table A17: 60-month survival of cohorts 1916–45  
Wholesale/retail and services only

VARIABLES	(1) Sub-sample	(2) se	(3) Firms w/ k	(4) se	(5) Firms w/ k	(6) se
s60						
ln(capital)	0.0139	(0.0073)				
Corporation	0.4752	(0.0395)	0.5136	(0.0293)	0.5022	(0.0369)
Limited partnership	-0.0319	(0.0255)	-0.0299	(0.0184)	-0.0247	(0.0253)
Share partnership	0.1891	(0.0540)	0.2183	(0.0487)	0.2147	(0.0524)
One general partner	0.0839	(0.0291)	0.0815	(0.0219)	0.0837	(0.0291)
3+ plus general partners	0.0179	(0.0261)	-0.0010	(0.0173)	0.0221	(0.0261)
Family firm	0.2211	(0.0250)	0.2534	(0.0166)	0.2288	(0.0246)
2+ experienced partners	-0.0773	(0.0314)	-0.0189	(0.0223)	-0.0696	(0.0313)
Pair with prior joint firm	0.0690	(0.0477)	0.0240	(0.0362)	0.0729	(0.0476)
Prior joint firm*Family firm	-0.0767	(0.0677)	-0.1028	(0.0509)	-0.0763	(0.0675)
Muslims + others	0.0205	(0.0554)	-0.0081	(0.0439)	0.0219	(0.0553)
Only Muslims	0.0616	(0.0395)	0.0676	(0.0271)	0.0678	(0.0394)
Heterogenous non-Muslims	-0.0791	(0.0256)	-0.0811	(0.0178)	-0.0786	(0.0256)
Cairo	-0.0041	(0.0190)	0.0227	(0.0130)	-0.0050	(0.0190)
Mansoura	0.1373	(0.0434)	0.1075	(0.0328)	0.1327	(0.0433)
Services	-0.0203	(0.0215)	-0.0319	(0.0153)	-0.0216	(0.0215)
Founded1921	-0.0838	(0.0727)	-0.0191	(0.0432)	-0.0824	(0.0728)
Founded1922	0.1108	(0.0640)	0.0250	(0.0386)	0.1073	(0.0642)
Founded1923	-0.1359	(0.0696)	-0.0368	(0.0408)	-0.1410	(0.0689)
Founded1924	-0.0087	(0.0638)	0.0006	(0.0368)	-0.0094	(0.0638)
Founded1925	-0.0144	(0.0589)	0.0119	(0.0356)	-0.0128	(0.0591)
Founded1926	0.0066	(0.0684)	-0.0107	(0.0397)	0.0083	(0.0685)
Founded1927	-0.0493	(0.0590)	-0.0016	(0.0377)	-0.0494	(0.0593)
Founded1928	0.0445	(0.0575)	0.1104	(0.0380)	0.0447	(0.0572)
Founded1929	0.0332	(0.0620)	0.0370	(0.0416)	0.0321	(0.0619)
Founded1930	0.0275	(0.0611)	0.0612	(0.0413)	0.0279	(0.0609)
Founded1931	0.0407	(0.0626)	0.0408	(0.0430)	0.0425	(0.0627)
Founded1932	0.0052	(0.0613)	-0.0130	(0.0423)	0.0009	(0.0617)
Founded1933	0.0475	(0.0638)	0.0530	(0.0414)	0.0455	(0.0639)
Founded1934	-0.0221	(0.0582)	0.0234	(0.0400)	-0.0264	(0.0586)
Founded1935	0.1016	(0.0528)	0.0658	(0.0363)	0.0934	(0.0525)
Founded1936	0.0410	(0.0623)	0.0708	(0.0424)	0.0388	(0.0620)
Founded1937	0.1090	(0.0523)	0.0816	(0.0415)	0.1030	(0.0523)
Founded1938	0.1089	(0.0570)	0.0722	(0.0404)	0.1022	(0.0565)
Founded1939	0.0993	(0.0523)	0.0986	(0.0379)	0.0859	(0.0516)
Founded1940	0.0885	(0.0511)	0.0922	(0.0363)	0.0794	(0.0510)
Founded1941	0.0493	(0.0432)	0.0541	(0.0323)	0.0393	(0.0430)
Founded1942	0.0346	(0.0451)	0.0419	(0.0340)	0.0276	(0.0449)

Table A17: 60-month survival of cohorts 1916–45  
Wholesale/retail and services only

Founded1943	0.0264	(0.0432)	0.0704	(0.0329)	0.0240	(0.0432)
Founded1944	0.0321	(0.0445)	0.0608	(0.0349)	0.0290	(0.0445)
Founded1945	0.2087	(0.0385)	0.1974	(0.0321)	0.2056	(0.0387)
Constant	0.3035	(0.0897)	0.4337	(0.0201)	0.4619	(0.0306)
Observations	2,850		5,817		2,850	
R-squared	0.0953		0.0831		0.0942	

## Tribunal d'Alexandrie.

### CONSTITUTIONS.

**Par acte sous seing privé** du 1er Novembre 1924, visé pour date certaine le 3 Novembre 1925, sub No. 8245, transcrit au Greffe du Tribunal Mixte de Commerce d'Alexandrie le 12 Novembre 1925, sub. No. 43, Vol. 40, Fol. 108.

**Entre** les Sieurs Hrant Kaprielian, Agop Deragopian et un commanditaire, dénommé au contrat.

Il a été formé:

**Sous la Raison Sociale** H. Kaprielian, A. Deragopian & Co. et sous la dénomination «Compagnie Egyptienne».

**Une Société en commandite simple.**

Avec siège à Alexandrie.

Ayant pour objet le commerce des matériaux de construction.

La durée de la Société est de deux ans à partir du 1er Novembre 1924.

Le capital social est de L.E. 1100.

La gestion et la signature sociale appartiennent aux Sieurs Hrant Kaprielian & Agop Deragopian.

Alexandrie, le 17 Novembre 1925.

Pour la Société:

642-A-240.

N. Saidenberg, avocat.

### Registration

### DISSOLUTION.

D'un acte sous seing privé en date du 7 Juillet 1927, visé pour date certaine au Greffe du Tribunal Mixte d'Alexandrie le 11 Juillet 1927 sub No. 6968.

Il appert:

Que la Société formée par acte sous-seing privé du 1er Novembre 1924 entre les Sieurs H. Kaprielian, A. Deragopian et un commanditaire y nommé, sous la Raison Sociale «H. Kaprielian A. Deragopian & Cie», compagnie égyptienne et ayant son siège à Alexandrie, a été de commun accord des parties dissoute avant terme à partir du 4 Juin 1927;

Que la Société H. Jigamian & Cie., a pris à sa charge tout l'actif et le passif de la Société dissoute.

Alexandrie, le 18 Août 1927.

Pour H. Kaprielian et A. Deragopian,

T. Tutundjian,

756-A-978.

Avocat à la Cour.

### Dissolution

## Tribunal d'Alexandrie.

### MODIFICATION.

**A la Société en commandite simple**  
**Sous la Raison Sociale:** H. Kaprielian, A. Deragopian & Co., dénommée «Compagnie Egyptienne».

Avec siège à Alexandrie.

Constituée par acte sous seing privé visé pour date certaine le 3 Novembre 1925 sous No. 8245.

Et publiée le 19 Novembre 1925.

Il a été apporté,

**Aux termes d'un nouvel acte sous seing privé** visé pour date certaine le 13 Avril 1927, sous No. 3017.

**La modification suivante:**

Retrait du commanditaire, lequel a été remplacé par un nouveau.

Toutes autres clauses et conditions du contrat entre parties relatives à la dite Société restent intégralement maintenues.

Alexandrie, le 5 Mai 1927.

Pour la Société

H. Kaprielian, A. Deragopian & Co.

(s.) N. Saidenberg,

950-A-722

Avocat à la Cour.

### Modification

### ALEXANDRIE —451— ALEXANDRIE

io-89.	Compagnie d'Assurances Générales (vie, incendie et accidents), P. Gredy & Co., directeurs particuliers pour l'Egypte et le Soudan, 4, r. Nébi Daniel, [732]	C
la-ue m).	Compagnie Centrale d'Eclairage et de Chauffage par le Gaz Lebon & Cie., r. Sidi el-Metwalli, [6201], [EP] 241, (voir partie officielle).	C
47.	Compagnie Egyptienne, matériaux de construction, 20, r. Abou Dardar, [5737]	C
ort. [EP]	Compagnie d'Entreprises Commerciales en Egypte, S.A. engrais chimiques, fers, matériaux de construction, 4, r. Bolonachi, [750 & 4804] (voir partie officielle).	C
urs 'Aa-	Compagnie Française de Navigation à vapeur, Cyp, Fabre & Co., Diab & Zehil agents, 6, r. Chérif pacha, [78], [EP] 334.	C
Co.,	Compagnie Française pour l'approvisionnement des navires en Orient, 17, r. Port-Est, [2914], [EP] 1667.	C
Ir-ork-cci-	Compagnie Frigorifique d'Egypte, r. Can- niel,	C

### Directory listing

Figure A1: Company notices

Source: *Journal des Tribunaux Mixtes d'Égypte* No. 416 18/19 Novembre 1925 p.15, No. 647 Mercredi 11/12 Mai 1927 p.33, No. 691 22/23 Août 1927 p.19; the *Egyptian Directory* 1926 p. 451