

Economic Harbingers of Political Modernization: Peaceful Explosion of Rights in Ottoman Istanbul

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Abstract

The modernization drive of the late Ottoman Empire is typically attributed to visionary officials and pressures they faced from foreign powers. This paper ascribes a fundamental role to prior shifts in wealth toward non-Muslims and away from conservative groups, including Muslim clerics. These shifts, all under way in the 1700s, motivated Ottoman political leaders to begin, with the Gülhane Edict of 1839, to dismantle traditional institutions grounded in Islamic law and sultanic customs of governance. Despite its momentous provisions, the edict generated only minor resistance, because it addressed widespread and chronic grievances, legitimated trends unfolding for generations, and offered Muslim political elites, who had been losing ground, opportunities to catch up with rapidly advancing local Christians. The data, which come from Istanbul's Islamic courts, allow the tracking of changes in the distribution of wealth, as measured by the founding of waqfs (Islamic trusts) and ownership of equities known as gediks.

JEL codes: N2, G10, P50, O1, K40

Keywords: financial innovation, legal reform, discrimination, property rights, religion, Islam, Ottoman Empire

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1. Introduction

In the 1700s, the Ottoman Empire embarked on a campaign to catch up with Western Europe militarily, and initiatives to modernize economic and political institutions began a century later. For example, in the early 1800s merchants trading with the West were given legal privileges to overcome their handicaps rooted in Islamic law (Masters 1992). The period's most fundamental initiative was the Gülhane Edict of 1839.¹ It granted legal equality to the empire's non-Muslims (*zimmî*) and, more generally, to its commoners (*reâyâ*, literally "flock of farm animals"). The edict also removed the tax exemptions of Ottoman administrative and military officials (*askerî*). Moreover, it abrogated the sultan's right to confiscate private property at will (*müsadere*). The era that the Gülhane Edict initiated is known as the Tanzimat (literally, "restructuring"). The Tanzimat era saw the establishment of Western-inspired institutions, including European-style ministries, new forms of taxation, municipalities, secular commercial and appeals courts, and a centralized stock market. It culminated in the first Ottoman constitution in 1876.

The huge literature on Ottoman modernization invokes several basic drivers: Western egalitarian ideas, the goading of Western powers, and the wisdom of Europhilic Ottoman statesmen. Such factors convinced Sultan Abdülmecit I (r. 1839-61), so goes the conventional interpretation, his empire's survival required momentous reforms.² The broader Ottoman population is absent from this narrative, except as secondary players who resisted top-down reforms.³

The foregoing explanation raises huge puzzles; it also collides with critical facts. Although the edict rescinded privileges of powerful groups, reactions were largely peaceful. Post-Gülhane disturbances are notable not because of their intensity or breadth but, rather, for their confinement to a few secondary towns. Major cities, including Istanbul, the Ottoman capital and commercial center of the Eastern Mediterranean, saw massive celebrations. Tellingly, the festivities united Muslims and non-Muslims, as well as elites and commoners.⁴ One might have

¹ For an English translation, see Liebesny (1975, pp. 46-49).

² Influential variants of the conventional interpretation include Karal (1964), Shaw and Shaw (1977), Hanioglu (2008), and İnalçık (2016).

³ Berkes (1964/1999) provides the canonical account of how Ottoman masses delayed modernization. İnalçık (1964) offers complementary views. The biases of conventional explanations reflect heavy reliance on official reports and correspondence.

⁴ Istanbul remained quiet following the edict. Reactions were most pronounced in two Balkan towns, Niš and Vidin, and, in Anatolia, Yozgat, Denizli, and Tokat. In these locations, elite landowners and their allies among clerics rebelled against losses of tax privileges (İnalçık 1964; Uzun 2002).

expected pushback from the empire's numerically, politically, and militarily dominant Muslims. On the face of it, it is amazing, too, that official elites calmly accepted the withdrawal of their fiscal, legal, and social privileges that dated back to the Ottoman founding in 1299 and characterized Islamic modes of governance since at least 661. By and large, Ottoman officials welcomed the Gülhane Edict. Timing poses another enigma. Although no predecessor of Abdülmecit I had attempted anything as ambitious, earlier sultans had pursued reforms that curtailed certain privileges. One reformist sultan was executed, four others were deposed, and several others managed to keep their throne only by shelving initiatives and executing aides targeted by mutineers.⁵

If in 1839 the Ottoman sultan could promise to overturn his empire's social order with broad approval, one reason is that he gave the losers of privileges relatively more valuable new rights; another is that the reforms legitimated prior shifts of wealth and political power that had created constituencies exasperated by the old legal order's inequities. Over the prior century, Christian Ottomans had prospered through stronger property rights rooted in foreign treaties; and they had used these rights to dominate a very profitable equity (*gedik*) market that exploded from around 1750. On account of their growing economic clout, Christians were already exercising broader social freedoms and gaining ground in the empire's administration. They wanted de jure recognition for their de facto advances in economic, political, and social status. Meanwhile, the empire's Muslims, and especially their elites, could see that Christian advances rested partly on stronger general property rights. The tax-exempt investment instrument that accounted for most of their wealth, the Islamic trust known as the waqf, was now relatively unprofitable; it was also becoming less secure. Hoping to emulate the enrichment of Christians, Muslim elites came to sense by 1839 that stronger general property rights would benefit them more than special privileges to establish waqfs.

Challenging the conventional interpretation of the Gülhane Edict, this paper attributes its expansion of rights as well as its warm reception to internal developments spanning many decades. Foreigners played a role, too, but most critically through the protections they gave to Eastern Christian minorities. Specifically, cumulatively huge changes in investment patterns and associated shifts in the sectarian distribution of wealth and political power created domestic

⁵ Executed: Osman II (1622). Deposed: Mehmet IV (1687), Mustafa II (1703), Ahmet III (1730), Selim III (1807).

constituencies for the edict's institutional reforms. The edict's "promised" distributional changes in favor of non-Muslims were already well under way; and the positional losers in Ottoman society—Muslim political elites, military officers, and commoners—could see what was fueling the advances of Christians.

Abdülmeçit I had complementary motivations for broadening basic rights and scrapping age-old privileges, including his own right to expropriate. Sensing existential threats to his empire, he considered stronger general property rights essential to boosting the state's chronically low fiscal capacity (Karaman and Pamuk 2010; Ma and Rubin 2019). In enabling his Muslim subjects to emulate Christians, he hoped to expand his tax base. In pleasing his empire's heavily Christian new cadre of commercial elites, he hoped, likewise, to expand his fiscal capacity by encouraging them to invest even more confidently. Mindful of the Greek secession of 1821-32, he expected also to undercut various Christian secessionist movements (McCarthy 2001, chaps. 2-4; Augustinos 1992, chaps. 3-4).

This interpretation of the Gülhane Edict is consistent with an observation that Douglass North, John Wallis, and Barry Weingast (2009, pp. 148-58) make concerning the expansion of rights within the elites of nondemocratic societies. Formal laws at odds with the actual distribution of power get replaced with more realistic alternatives, they observe. Laws are adjusted to meet the dominant coalition's evolving needs. They add that legal reforms are designed to reduce intra-elite tensions by replacing idiosyncratic privileges with uniform rights, giving all elites a common interest in defending the political status quo. Reforms may also lessen tensions between elites and the ruler. The Gülhane Edict fulfilled all the North, Weingast, and Wallis conditions. The new Ottoman order eliminated a source of constant friction between the Sultan and officials weary of expropriation. In promising to eliminate sectarian discrimination, it recognized already achieved realignments in inter-faith power relations. The edict also gave the Sultan and elites of all faiths a common interest in improving economic institutions. Indeed, subsequent decades saw massive reforms that benefited diverse groups as well as the state.

To the foregoing observations by North, Wallis, and Weingast, we add here an insight concerning resistance to institutional reforms. If an expansion of rights is expected to redistribute wealth and power substantially, it will trigger violent reactions. Cases in point include the French Revolution of 1789, China's Cultural Revolution of 1966-76, and the Syrian attempt to overthrow the Assad dictatorship from 2011 onward. By contrast, a transformation that merely

reflects prior distributional changes is likely to be greeted peacefully. Plausible as this claim sounds, it is difficult to substantiate empirically. Here, we take on the challenge in a context conducive to quantitative testing.⁶

The Gülhane Edict was not expected to overhaul social relations, legal procedures, and political hierarchies instantly. The practical implications of religious equality were to be worked out, and the edict set no timetable. Unavoidable conflicts over interpretation led Abdülmecit I to follow up with more specific commitments. In 1856, through a “Reform Edict” (*Islâhat Fermanı*) he promised that, regardless of creed, all his subjects would be treated equally in government appointments and judicial procedures.⁷ Further clarifications followed. Nothing is unusual here. A half-century after the Civil Rights Act of 1964, Americans remain divided over what racial equality means (Hutchings and Valentino 2004; Bobo 2011; Dattel 2018, chap. 5). Yet, like the American Civil Rights Act, the Gülhane Edict set a precedent for broad reforms. It triggered assorted movements that, despite setbacks, gradually overturned the Ottoman Empire’s classical order. It fueled dynamics that continued with the Reform Edict, the Constitutions of 1876 and 1908, and the abolition of the monarchy in 1922 (Shaw and Shaw 1977, chaps. 2-6; Kasaba, ed. 2008, chaps. 2-6). It also laid the groundwork for reforms in successor states, including Turkey’s Kemalist Reforms and sundry liberal and republican reforms in the Arab world (Brown, ed. 1996). Critical is that the Gülhane Edict represents a milestone of modernization in Western Muslim world, not its initiation through a sudden, top-down decision.

There is a large literature on how religion interacts with evolving economic and political realities (McCleary and Barro 2019, Iyer 2016). Among its general findings is that religions adjust to changing circumstances, but generally in ways meant to keep distinct particularities. Although Islam is often viewed as an especially rigid religion, in fact it has been reinterpreted repeatedly. Key economic institutions of pre-modern Islam were mostly adaptations to emerging needs of elites. As in the case of other religions, they also reflected path dependence; no institutional innovation started from a blank slate (Kuran 2011, chaps. 3, 7, 8, 10). With respect to this broader literature, the paper uncovers a particularly striking and massively consequential

⁶ One analogous case consists of South Africa’s abrogation of *apartheid*, whose management costs became prohibitive as the politically dominant white minority shifted investments from agriculture to industry (Acemoglu and Robinson 2006, pp. 10-14). Another is the Protestant Reformation, which spread most rapidly and relatively peacefully in areas where merchants stood to gain from a weakening of the Roman Church (Dickens 1966, chaps. 4-5; Rubin 2017, pp. 126-37).

⁷ For the English translation, see Liebesny (1975, pp. 49-52).

economic innovation that got incorporated in the practice of Islamic law, though not its doctrine. For all the advantages it created for particular groups, it also suffered from problems rooted in pre-existing institutions.

Our empirical analysis of distributional shifts in Istanbul spans 1600 to 1839—a period running from the end of the Ottoman Empire’s “golden age” to the start of its momentous reforms. We track the shares of key constituencies in old and new forms of investment. The former investment instruments included two types of waqfs (Islamic trusts): classic waqfs, whose assets consisted of real estate, and cash waqfs, which were relatively more liquid. The new investment instruments were gediks, which were shares in productive assets tradable in a rudimentary and decentralized equity market. An example of a gedik might be two shares of a grocery store whose ownership is divided into nine shares. Enterprises securitized as gediks typically enjoyed protection from competition; this raised their expected returns. Unlike the waqf, the gedik was a late addition to the pre-modern Ottoman economy, and it had no basis in Islamic law. The latter feature limited the rents it provided to clerics. The pertinent information comes from several original data sets drawn from the records of Istanbul’s major Islamic courts. They pertain to transactions within and among social groups differentiated by religion-based legal rights and also by honorific titles.

In addition to correcting misperceptions regarding the motives behind the late-Ottoman structural reforms, the paper provides fresh evidence that Middle Eastern social systems based on Islamic law delayed both economic development and political liberalization by concentrating capital among groups tied closely to the state. This concentration contributed to the European-Middle Eastern economic divergence and eventually also to the sectarian economic divergence within the Middle East itself. In altering the Middle East’s inter-religious balance of power, the latter divergence spurred broad reforms.

2. Historical and Institutional Background

Prior to 1839, tax status was the main distinction between state officials and commoners. The philosophical basis of the division between tax-exempt elites and tax-paying commoners was articulated by the fifteenth-century chronicler Mustafa Naima (1655-1716) as the “cycle of equity.” Subjects prosper only through a strong state, Naima suggested, and the state stays strong

only insofar subjects supply resources.⁸ By this logic, tax exemptions compensated for services that enabled commoners to produce securely.

Every Istanbul resident belonged to one of three organized religions: Islam, Christianity, or Judaism. In the period under consideration, the population was around 58.8% Muslim, 34.8% Christian, and 6.4% Jewish.⁹ Except a few agencies, the state administration was entirely in Muslim hands. Along with tax exemptions, top Muslim officials enjoyed privileges that enabled wealth accumulation far beyond what was achievable on salary alone. Some officials received land grants. Many used their influence to create or exploit private monopolies, and higher-ups looked the other way as they prospered through bribes and rents. Whatever they amassed, their descendants did not necessarily benefit. The sultan regularly confiscated the estates of dead officials on the ground that they could not have grown rich without using state power for personal ends. Other pretexts for confiscating an estate were that the deceased had committed crimes or left unpaid debts.¹⁰ The estates of rich commoners, regardless of faith, could also get confiscated, but the probability was much lower.¹¹ For them, expropriation usually took the form of non-customary taxation (*avârız*, literally “whatever can be extorted”). Non-customary taxation was a major, if not the leading source of state revenue in the period analyzed here (Darling 1996, chaps. 1, 3).¹² For economically advancing groups, it was also a major source of material insecurity.

During the 1700s and 1800s, the property of Christian subjects became increasingly secure as European powers acquired rights to protect Ottoman religious minorities, primarily through treaties concluding wars that Ottomans lost. A milestone in this process is the Russo-

⁸ Thomas (1972). On origins of the concept, known also as the “circle of justice,” see Darling (2012, chaps. 4-5). Naima drew on the philosophy of Persian bureaucrats who served Arab empires.

⁹ The estimates belong to Mantran (1962, p. 46). Other estimates suggest that during the period covered here no major changes occurred in Istanbul’s religious composition (Behar 1996, tables 4.1, 4.2).

¹⁰ Full confiscation was the exception, not the norm. Typically, the deceased official’s descendants would be left enough to prevent their slip into destitution. See Arslantaş (2017, especially pp. 93-109).

¹¹ State officials had less material security than commoners partly because the sultan used expropriation as a vehicle for balancing factions within his administration and removing threats to his authority (El-Haj 2005, pp. 48-49). Ordinarily, an official with many high-level connections posed a greater threat to the sultan than an equally rich commoner. In any case, the sultan found it easier to expropriate his own officials, because he was better informed of their assets. Commoner wealth, typically derived from commerce, was more costly to appropriate, both because it was harder to identify and because officials carrying out the expropriations commonly underreported their takings. In this respect, as with low state capacity, the Ottoman Empire was no different from other absolutist regimes (Scott 1998, chaps. 1, 9-10; Ma and Rubin 2019).

¹² Demirci (2009) observes that taxes that emerged as non-customary and could become customary in practice even as it retained non-customary legal status and even retained that designation.

Ottoman Küçük Kaynarca Treaty of 1774. Through this treaty, Russia obtained custodianship over the Sultan's Eastern Orthodox subjects. These included Ottomans belonging to Istanbul's two largest Christian denominations: the Greek Orthodox Church and the Armenian Apostolic Church.¹³ A huge significance of the 1774 treaty is that Russian tsars treated it as an instrument for expanding their empire southward.¹⁴

Dazzled by Russia's sweeping rights to protect Eastern Christians, other foreign powers claimed protection over Ottoman Catholics and Protestants. The scope of all these sectarian rights were hotly contested until the Ottoman state abolished them at the start of World War I (Davison 1990, chap. 2). In the interim, though, they deterred the expropriation of Christian Ottoman subjects. Except for brief periods, Ottoman Jews lacked foreign protection. From an analytical standpoint, this provides useful variation. The Christian-Jewish contrast in property rights will help to validate the economic advantages that foreign protection furnished to Ottoman Christians.

It was never a Russian goal to protect either the lives or assets of individual Greeks or Armenians. Russian leaders saw Christian Ottomans as pawns in an extended strategic game. Because Ottoman officials pushed back against Russian interference in their internal affairs, the Russian officials picked battles carefully. Sometimes they deliberately held back, saving their diplomatic capital for other contexts.¹⁵ Their overarching goal was to turn Christian Ottoman subjects into Russophiles and potential allies in future Russo-Ottoman wars. To these ends, Russian agents repeatedly conveyed to Orthodox Ottomans that Russia had both a sacred

¹³ This treaty was documented in three languages: Turkish, Russian, and Italian. In case of differences of interpretation, the Italian version was to be definitive. The versions differed massively in regard to rights the treaty gave to Russia vis-à-vis the Ottoman sultan's treatment of his subjects. According to the Russian version, Russia obtained the right to interfere in Ottoman affairs on behalf of any Christian. Although the Turkish and Italian texts gave Russia the right to protect only members of the Russian Orthodox Church—a tiny share of Ottoman Christians—Russian diplomats managed to make statesmen across Europe that Russia accepts its broader interpretation. They did so by translating their version into French, which then became the working text in European diplomatic circles, where the common language was French rather than Italian. To this day, even most Turkish historians treat the treaty's Russian version—not the Italian or Turkish—as defining Russia's negotiated privileges. Davison (1976) documents the differences between the treaty's three versions; the clauses relevant here are 7 and 14. See Sonyel (1991) on the denominational composition of Ottoman Christians.

¹⁴ It was the greatest single step before Russia formed alliances with Egypt and Syria in the 1950s, of Russia's drive to obtain Mediterranean beachheads (Davison 1976, pp. 464-68; Vego 2000, pp. 167-72).

¹⁵ Dmitrii Dashkov (1784-1839), a diplomat based in Istanbul and later Russia's foreign minister explains how his country exercised their custodianship (Prousis 2002, pp. ix-x). He was Russia's chief tactician with regard to capturing Ottoman territories.

obligation and a treaty-codified right to protect them from oppression.¹⁶ Most important for our purposes here, they set up consulates in heavily Christian localities to facilitate Russian custodianship. Orthodox priests and other dignitaries were encouraged to report Ottoman misrule. Orthodox Christians facing reprisals from Ottoman officials would receive relief from Russia, possibly also asylum. The Russian-protected Christians would have included investors—wealthy Christians who, by investing in lucrative *gediks*, accounted for tilting the Ottoman sectarian distribution of wealth in favor of Christians (Prousis 2002, pp. 5-7, 18-29). None of the foregoing patterns made the property of Ottoman Christians inviolable. But they would have made Ottoman officials think twice before expropriating Christians even partially, through arbitrary taxation.

While Christian property was becoming increasingly secure, assets long-favored by Muslim investors were becoming less so. From 1453 onward, Istanbul's entire population had benefited from *waqf*-supplied social services. Under Islamic law, the law of the land, a *waqf* was founded by a property owner, ordinarily a Muslim individual.¹⁷ A Christian or Jew became eligible only through special permission, rarely granted before the 1800s. Unincorporated, a *waqf* was required to deliver in perpetuity a service designated by the founder through a deed filed in court. Considered sacred, a *waqf*'s assets and earnings were in principle inviolable. Typically, a major portion of the earnings accrued to the founder and his or her descendants (Yediyıldız 1990; Kuran 2001). In practice, though, this immunity was widely respected only in the early part of the quarter-millennium under analysis. In the 1700s, and even more strikingly in the 1800s, *waqf* immunity weakened, contributing to the process that shifted wealth to Christians. Between 1600 and 1839, the share of *waqf*-held assets in Istanbul's total real estate was at least 25 percent, and possibly much higher.¹⁸

In sum, in the decades preceding the *Gülhane Edict*, Istanbul's Muslims owned an overwhelming share of the assets immune to confiscation under Islamic law. But this immunity was weakening just as Christians acquired stronger general property rights. The asymmetry here is critical. Inviolable property rights stemmed in one case from a characteristic of the asset and in the other from a right of the owner. A *waqf*-held asset was traditionally immune to confiscation,

¹⁶ They promised them financial, diplomatic, and military aid to deliver them homelands of their own. Moreover, to strengthen religious and cultural bonds, they provided aid to Orthodox churches and schools.

¹⁷ The founder could not be an organization or even a group of individuals.

¹⁸ Though no estimate exists for Istanbul, there are estimates for other places. See Kuran (2016, pp. 422-26).

not any generally Muslim-owned asset. But, after 1774, any asset gained inviolability when its ownership passed to a Christian subject.

3. Investment Options and Investor Categories

Thus far, we have given several reasons why, prior to 1839, the sectarian distribution of wealth would have shifted in favor of Christians. Once quite secure, the main investment instrument of Muslims became increasingly vulnerable to expropriation. A new investment instrument, the *gedik*, became available to all. Finally, Christian private property became more secure even as Muslim and Jewish private assets remained vulnerable. One would expect the resulting distributional effects to have generated responses. In particular, the losers might have demanded rights matching those that galvanized the ascent of the winners. Over and beyond the distributional effects, all groups would have welcomed the edict's abrogation of the Sultan's right to expropriate at will. Muslim elites, who suffered disproportionately from expropriations, would have been especially pleased. This is because the abrogation extended to them an evidently fruitful right that Christians already enjoyed through foreign protection.

To substantiate these interpretations, we must identify the available investment options in finer detail, with attention to variations across time and religious groups. To start with the *waqf*, historians of the Ottoman Empire generally hold that Muslims poured resources into it to fulfil the Islamic dictum to be charitable (Yediyıldız 1990; Singer 2002; Boyar and Fleet 2010, chaps. 4-5). But other motives were usually far more important, including securing property against confiscation, circumventing Islamic inheritance rules, supporting strategic imperial goals, and self-consumption (Kuran 2001, 2016; Cansunar 2018). Here, we add that state-connected elites (civilian, military, and Islamic officials) a highly disproportionate share of Istanbul's *waqfs* and a huge majority of the largest ones by assets.¹⁹ This pattern stems from the financial incentives of high officials. Because they faced the highest expropriation risk, they would have had the greatest motivation to secure wealth by turning assets into a sacred, and thus protected, trust.

Under classical Islamic law, developed centuries before the Ottomans, a *waqf*'s endowment had to consist of real estate. A *waqf* that satisfies this requirement may be called a

¹⁹ State-connected elites, whose share of the population was at most 10%, formed 22.8% of all *waqfs* whose deeds have survived (based on data in Aydın et al. 2015). The figure excludes *waqfs* founded by their wives and daughters. Of the 3265 *waqfs* registered by 1600, the 14 largest consisted of charitable complexes (*külliyes*). These were formed exclusively by sultans and their families, or high-ranked elites (Canatar 2004).

classic waqf.²⁰ In non-Arab provinces of the Ottoman Empire (area comprising modern Turkey and the Balkans), cash-endowed waqfs gained popularity and legal acceptance by the 1550s. “Cash waqfs” earned returns by supplying credit at interest.²¹ Like classic waqfs, they enjoyed tax-exempt status.

Investment instrument	Period of availability	Eligibility	Security	Regulation	Taxation	Liquidity	Tradability	Divisibility
Classic waqf	Always	Unrestricted for Muslims. Open to non-Muslims by special permission.	Initially secure. Increasingly subject to expropriation after 1700.	Mandatory Islamic registration. Monitored by judge of nearby Islamic court.	Exempt	None	None	No
Cash waqf	From 1570	Unrestricted for Muslims. Open to non-Muslims by special permission.	Immune to official expropriation but subject to theft.	Mandatory Islamic registration. Monitored by judge of nearby Islamic court.	Exempt	High	None	No
Gedik	From 1600	Unrestricted.	For Muslims and Jews, risky. For Christians, increasingly secure by 1700, and fully secure post-1774.	Optional registration in Islamic court. Unregulated.	Dividends taxed	High	Full	Yes

Table 1. Long-term investment options and their properties, with changes over time and variations by religious group, pre-1839.

In the 1750s, a new financial instrument gained popularity as yet another investment vehicle: the gedik (Ağır 2018). A gedik provided ownership of the production factors used in some commercial or artisanal activity. It was both divisible and tradable. The trading of gedik shares, whose owners generally carried no liability, took place in a decentralized and unregulated market without any regulation. Unlike the period’s leading European stock exchanges, those of Amsterdam and London, transactions were not registered at a single location.²² The creation of gediks and subsequent transactions could be registered at courts of the concerned parties’ choice;

²⁰ A more precise term would be classic Islamic waqf, to distinguish it from the modern waqf, which is a charitable corporation.

²¹ On the ensuing controversy, see sect. 5.

²² On the histories of the Amsterdam and London exchanges, see Gelderblom (2013, chap. 3) and Michie (1999), respectively.

the court could change at each transaction, and unregistered transactions were also possible.²³ A court's role was limited to registration on demand and public access to the resulting document, each for a fee. Unlike both classic and cash waqfs, clerics did not supervise gediks. Transactions and dividend distributions by gedik owners followed unstandardized rules chosen by the transactors.²⁴

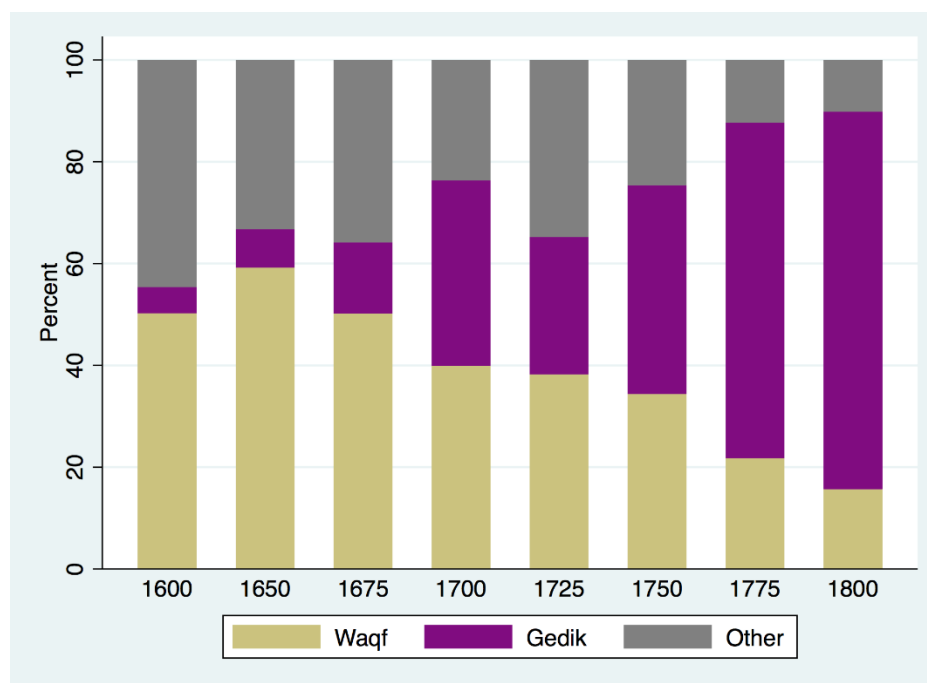


Fig. 1. Shares of cases involving long-run investments in Istanbul's court registers, 1600-1824. The "other" category includes two short-run investments: partnerships and credit transactions. Each bar represents a 25-year time span beginning with the started year, except 50 years for the first. For the list of 42 registers in the sample, see notes 32-34. (For a variant of this graph that includes investments contained in estates, see Appendix A; it shows the same trends concerning the incidence of gediks and waqfs.)

So in the 1600-1839 period, an Ottoman subject with resources to invest for the long-term had three options.²⁵ The alternatives, compared in Table 1, all involved some form of cooperation with others, under established institutions. By law, both forms of the waqf were supposed to exist in perpetuity. Though gedik shares could be resold quickly, they were often

²³ Unregistered transactions would take place before witnesses presumably prepared to testify in court in case of some disagreement among the parties.

²⁴ All along, an investment instrument that provided no tax advantages was the Islamic commercial partnership, which involved the pooling of labor and capital by two or more individuals to earn a return through production or trade. Capital holders could also supply personal loans in Istanbul's credit market, competing for borrowers with cash waqfs.

²⁵ The investor could also hold the surplus (for instance, by wearing gold bracelets) or engage in commerce as a sole proprietor. Short-term options were the Islamic commercial partnership and supplying credit as an individual.

held for periods much longer than even the longest-lasting commercial partnerships.²⁶ If court records indicate that these three long-term investments came to play a more important role in Istanbul's economic life than short-term investments. Fig. 1 shows how relative shares of cases involving waqfs, gediks, and solely other matters changed over time.²⁷ The explosive growth of the gedik market after around 1750 is remarkable. Explaining the burst depicted in Fig. 1 is part of our challenge ahead. As we shall see, it is intertwined with the inter-communal shifts in power that preceded the Gülhane Edict.

After Istanbul became the Ottoman capital in 1453, for a century the classic waqf was the only long-term investment instrument available to Muslim elites. Other options then emerged, the cash waqf around 1550 and eventually the gedik. Depending on relative returns and risks, certain beneficiaries of classic waqfs would have wanted to shift assets into alternative instruments. Alas, the law banned such reallocations; in principle, a waqf was established in perpetuity to serve whatever function its founder had chosen. Nevertheless, with the connivance of cooperative judges (*kadis*), waqf caretakers (*mütevellis*) found ways to circumvent the restrictions. Hence, as cash waqfs and then gediks gained significance, caretakers started to convert assets of existing classic waqfs into private property through a legal, yet brazenly corrupt procedure known as the “double sale” (*icâreteyn*).²⁸ Functionally, this procedure resembles the privatization of Russian state enterprises after the fall of the Soviet Union in 1991; although Russian privatizers ostensibly aimed to maximize returns to the public, in fact they transferred the most valuable assets to themselves (Black, Kraakman, and Tarassova 2000). With the Ottoman double sale, the transfer was achieved through long-term leases that left the assets in the lessee's hands when, as anticipated, the waqf went bankrupt (Barnes 1987, chap. 3).²⁹

4. Investment Decisions

In deciding how to deploy their assets, Istanbul's investors would have taken account of relative returns. They would have allowed also for differences in investment costs, confiscation

²⁶ Commercial partnerships lasting longer than a few months were rare. For evidence and the underlying reasons, see Kuran (2011, chaps. 3-5).

²⁷ On data sources, see sect. 5 below.

²⁸ The “double sale” enabled cash-strapped waqfs to fund repairs through a large downpayment from a renter in return for a long-term rental contract. Pantik (2017) considers it an innovation-promoting efficiency. According to his own account (pp. 96-98), after the 1750s the procedure generally fostered privatization of the rented assets.

²⁹ Along with inflation, purposefully low lease fees also played major roles.

probabilities, and expected taxes. These variables all depended on the investor's religion and/or the investment instrument. They could vary over time, and not necessarily identically across religious groups. To develop insights into the tradeoffs that investors faced, we shall conceptualize their choice process as a game that each plays against the state. A formal representation and proofs of the generated theoretical claims are in Appendix B.

Imagine that an investor with a given wealth and pre-determined private property rights plays a one-shot game against the state. Let β_i , a parameter between 0 and 1, represent the level of these rights for investor i . If $\beta_i = 0$, the investor has no material security at all; at the other extreme, if $\beta_i = 1$, the investor's private property is fully secure. The tax that the state imposes on taxable wealth depends on its ability to locate wealth, in other words, on its fiscal capacity; since this capacity cannot be improved quickly (Scott 1998), it is exogenous to this analysis. As a practical matter, the Ottoman state was neither fiscally powerless nor fiscally unconstrained. Hence, the tax rate it imposed on tax-paying subjects was positive, yet well under 100 percent because of fiscal capacity alone.

In investing for the long-term, Ottoman subjects had a trinary choice. For reasons completed below, in the gedik market returns were high but taxable; classic waqfs had relatively low but untaxed returns; and cash waqfs provided moderate returns, also untaxed. Remember that whereas Muslims were free to establish waqfs, non-Muslims needed special permission. The permission required a quid pro quo. Thus, the registration cost depended on the founder's faith. Another relevant cost was that of the state for expropriating a waqf; this reflected the risk of alienating the clerics on whom the state depended for legitimation. Clerics earned returns from monitoring waqfs; and they were capable of fomenting unrest. Anything that discouraged the founding of waqfs threatened their livelihood. Our investor had to consider also the relative probabilities of expropriation. For waqfs, this was close to nil at the start of our period; then it became significant for classic waqfs while remaining negligible for cash waqfs, largely because of their relatively much lower value. For the latter, though, theft or loss was a steady danger; cash could be stolen more easily than real estate. Investors also had to consider the asset composition of their portfolio before making investment decisions. An investor's exogenous asset portfolio, z_i , is divided between real estate and liquid assets, in shares α_i and $1-\alpha_i$, respectively. Turning real estate into cash, or vice versa, entails a small cost, $k > 0$.

The investor and the state both observe all the identified costs, returns, and probabilities. Suppose that the investor moves first, deciding whether to endow a classic waqf, found a cash waqf, or invest in gediks. The state moves next. If the investor has endowed a waqf of either kind, in the next stage the state can either acquiesce or expropriate. If the investor opts instead for a gedik, the government can either tax the investment or confiscate it. The government incurs the cost c_i if it expropriates investor i 's gedik. This cost increases with the individual's property rights, β_i .

This conceptualization captures all the key differences in the tradeoffs facing, on the one hand, Muslims and non-Muslims, and, on the other hand, Christians and non-Christians. In allowing parameters to change over time, it also accommodates the disadvantages Muslim investors faced as waqfs became less secure and the foreign protections of Christians strengthened their property rights.

A subgame perfect Nash equilibrium of this game is one where gedik returns and gedik expropriation costs are both sufficiently high that the government prefers to tax gedik investments to bearing the cost of expropriation, and at least some investors prefer to invest in gediks rather than a waqf. Three testable implications of this game, formalized in Appendix B, are of particular interest:

Hypothesis 1. Holding all else constant, the higher is the state's cost of expropriating the gedik of individual i (the larger is c_i), the more likely i is to invest in gediks.

Hypothesis 2. Holding all else constant, the stronger are individual i 's private property rights (the higher is β_i), the more likely i is to invest in gediks.

Hypothesis 3. Holding all else constant, the more an investor's portfolio is weighted in favor of real estate (the higher is α_i), the less likely i is to invest in gediks over a classic waqf.

Fig. 2 illustrates the logic underlying these three hypotheses. It shows that from the standpoint of individual investors, material security, portfolio liquidity, and obstacles to state expropriation of gediks presented tradeoffs. Each of these could compensate for the other; and jointly they determined which of the three choices was optimal. For Muslim political elites, α_i was high and both β_i and c_i were low; in terms of Fig. 2, they were located near $i1$. We thus expect them to invest disproportionately in classic waqfs. For Christians, β_i and c_i were both high; and α_i could be anywhere within the 0 to 1 range. Like the individual $i2$, they had strong

incentives to invest in gediks. A Muslim with weak property rights (low β_i) and high liquidity (low α_i) might be situated at $i3$ and find it optimal to invest in a cash waqf.

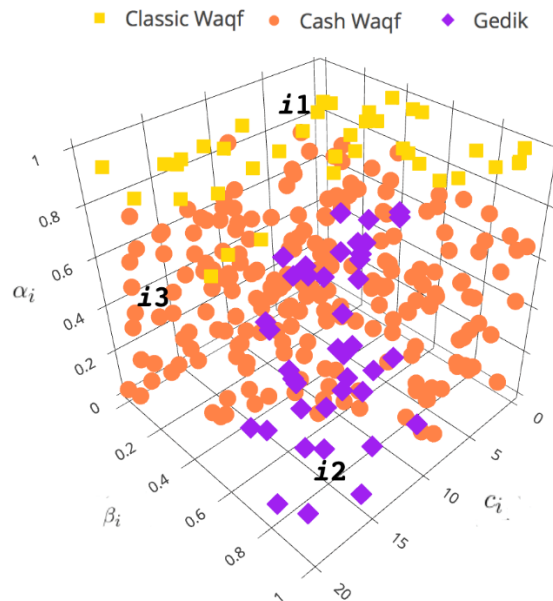


Fig. 2. Optimal investment choices in equilibrium, as a function of private property rights (β_i), the state's cost of gedik expropriation (c_i), and the weight a real estate in the investor's portfolio (α_i). Parameters used in the illustrations of 300 hypothetical investors: $f = 0.3$, $r_w = 0.3$, $r_m = 0.4$, $r_g = 0.8$, $z_i = 20$, $c_w = 10$, $k = 0.1$.

These hypotheses will guide the historical narrative on successive institutional transformations that reshaped the incentives of the state and various social groups. But first we shall review our data sources. The foregoing hypotheses will be tested in sect. 9.

5. Data

The paper required the construction of several original data sets, largely on the basis of primary documents. For waqfs founded in Istanbul between 1600 and 1839, we started from a catalog of 9867 waqf deeds filed after 1600 (Aydın et al. 2015). This catalog was produced by browsing the 9872 surviving registers of the 27 Islamic courts in operation during the period, some of them intermittently. Under the law, every waqf deed had to be approved and recorded by one of these courts. The team browsing the registers found about 65% of the waqf deeds from the period in question. This massive sample appears representative.³⁰

³⁰ The estimate is derived from two sub-estimates, one of the Aydın et al. (2015) catalog's comprehensiveness and the other of the non-surviving registers. Of the deeds recorded in 42 registers that we ourselves have digitized and 40 others that have been transliterated in full, the team surveying the 9872 surviving Istanbul registers missed about 10% of the waqf deeds; the omissions appear random. And the catalog itself suggests (p. 14) that 3,000 to

For each entry, the deed catalog gives the waqf's founding date as well as the name, religion, and title (if any) of the founder. It also states whether the endowment consisted of real estate or cash. Beyond that, the information is fragmentary. For our needs here, the most critical omission is the returns from endowed real estate. Fortunately, our 42 court registers include abundant cases involving real estate sales. From these, we infer that in the housing market capital gains were low.

Along with waqf deeds, records of transactions involving credit, partnerships, gediks, and waqfs provide information on economic activities. Such information comes from 42 registers belonging to three specific courts, each in a neighborhood pivotal to Istanbul's financial life: Central Istanbul, Galata, and Bab.³¹ The registers, which we have digitized, are spread across a quarter-millennium, 1600-1839. Fifteen are from the 1600s,³² 21 from the 1700s,³³ and 6 from 1800-39.³⁴

These 42 registers contain three types of cases: contracts and settlements recorded before a judge (collectively, registrations), records of adjudicated disputes, and communications from the Palace. Of interest here are the registrations and adjudications.³⁵ Every such case provides demographic information on the parties involved. For monetary transactions, ordinarily amounts are given. Gedik transactions record the prevailing value of the underlying assets and the distribution of shares among co-owners.

4,000 registers belonging to the 27 courts perished in natural disasters or otherwise disappeared before the formation of a centralized archive. Jointly, these sub-estimates yield a comprehensiveness measure of around 65%.

³¹ The Central Istanbul court (known also as the "Istanbul" court) was located near the Grand Bazaar. Galata was Istanbul's main port, and, in time, also its financial center. Located near Topkapı Palace, the Bab court handled many prominent cases involving price controls. The sampling aimed to obtain uniform coverage between 1600 and 1839. Gaps exist in the Central Istanbul series, due to fires that consumed most Central Istanbul registers of the 1600s. The gaps are covered through Bab registers. Bab and Central Istanbul were both located in the heart of the walled city, where the Sultan and other high officials lived.

³² Galata 24 (1602-3), Galata 25 (1604), Galata 27 (1604-5), Istanbul 1 (1611-13), Istanbul 2 (1615-16), Galata 41 (1616-17), Galata 42 (1617), Istanbul 3 (1617-18), Istanbul 4 (1619), Istanbul 9 (1661-62), Istanbul 16 (1664-65), Galata 130 (1683), Galata 145 (1689-90), Istanbul 22 (1694-96), and Istanbul 23 (1696-97). Transcripts of these registers are reproduced in the modern Turkish script in Kuran (2010-13).

³³ Galata 197 (1704-5), Bab 89 (1708), Galata 224 (1713-16), Bab 122 (1718-19), Galata 266 (1726-27), Bab 154 (1730-31), Galata 279 (1731-33), Bab 173 (1740), Galata 308 (1745-46), Bab 204 (1751-53), Galata 353 (1759), Galata 360 (1760-61), Galata 379 (1765), Bab 240 (1767-68), Galata 410 (1770-71), Bab 269 (1778), Galata 515 (1792-93), Galata 526 (1794-95), Istanbul 68 (1796-97), Galata 541 (1797-98), and Istanbul 70 (1797-99).

³⁴ Galata 567 (1803), Galata 587 (1808-9), Istanbul 105 (1811-12), Istanbul 122 (1817-18), Galata 636 (1820-21), and Istanbul 142 (1824).

³⁵ Because the courts in question favored certain groups, adjudications were subject to selection effects, which could bias the distribution of subjects in our records (Kuran and Lustig 2012). Fortunately, the vast majority of the court data would have come from registrations. Appendix D shows that results involving adjudications hold when the data set is restricted to registrations.

Multiple currencies saw use during this period, and exchange rates fluctuated. We converted all nominal monetary magnitudes to real values in silver, relying on the currency conversions and price indices used in Kuran and Rubin (2018).

6. The Declining Appeal of Waqfs

At the start of our period, around 1600, waqfs claimed the lion's share of Istanbul's private capital. A substantial share of rental real estate, including much of the best housing and most of the Grand Bazaar's 4,000 shops, belonged to classic waqfs. About 30% of all waqfs were cash waqfs (Fig. 3). At the time, the Ottoman religious establishment (*ulemâ*) had just settled a controversy over whether endowments could include cash. Under waqf rules instituted in the 700s, endowable assets were limited to real estate. Nevertheless, by the 1600s judges in Turkey and the Balkans were registering endowments that included cash. Before long, waqfs with an endowment limited to cash gained legality. These new financial entities earned a return by lending at (thinly disguised) interest.³⁶

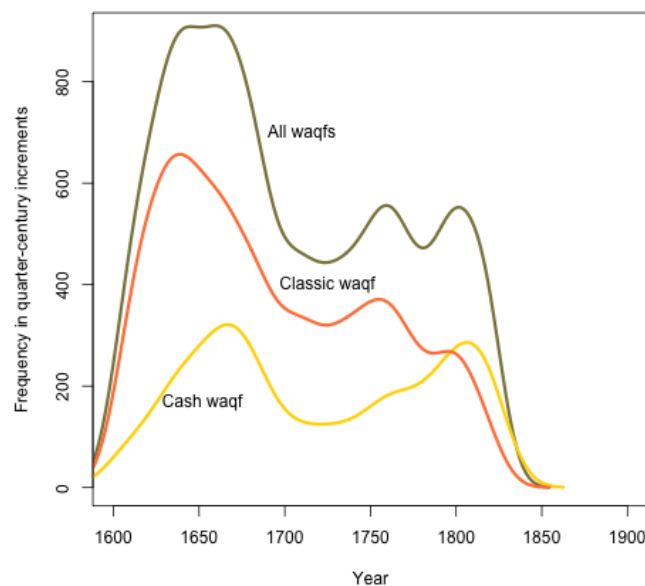


Fig. 3. Number of new classic and cash waqfs registered in Istanbul courts, 1600-1900. Computed from Aydın et al. (2015). The vertical axis measures the numbers founded in each quarter-century within the time period. Each time-series, including that for all waqfs, is overlaid with a kernel density estimate that smoothes the data.

³⁶ The earliest record of a cash waqf is from the early 1400s. Conservative clerics found it un-Islamic, both because it charged interest, considered sinful under a common reading of the Quran, and because its liquidity violated longstanding waqf rules. A pragmatic argument settled the issue by 1570. It held that an already popular and “obviously beneficial” practice could not be un-Islamic (Mandaville 1979; Kuran 2001, pp. 873-75).

Most narratives on this institutional innovation leave unaddressed why it spread so widely in the face of strident opposition. The key factor is that the Eastern Mediterranean was starved for credit. This is evident in Istanbul's sky-high interest rates. Between 1602 and 1799, despite the prevalence of cash waqfs, the average real interest rate was 19%—at least double the Western European average (Kuran and Rubin 2018). In the absence of cash waqfs, which made 58% of all registered loans, credit costs would have been even higher. By 1800, the share of cash waqfs among all new waqfs had reached 60% (Fig. 3).

Both waqf types exempted the founder from wealth and income taxes. Otherwise, they differed in the benefits to their founders (Table 1). The real estate of a classic waqf provided rental income and security against expropriation. A cash waqf provided interest income, without as much material security; unlike land or a building, cash could be extorted or stolen. Variations between the relative popularities of the two waqf types should have been driven not only by relative expected returns but also by relative risks of asset loss. All else constant, the less secure the classic waqf became, the lower its attractiveness to investors.

As we already know, under Islamic law waqfs were immune to expropriation. Nevertheless, in the 1700s this immunity weakened for classic waqfs; and the trend accelerated in 1826 with the formation of a Waqf Ministry (*Evkâf-ı Hümâyûn Nezâreti*). The impetus was the Ottoman state's chronically low fiscal capacity. At a time of escalating expenses due to advances in military technology, sultans saw old classic waqfs, especially those that had become dysfunctional, as potential sources of additional income. The ongoing privatizations of classic waqf assets through legally dubious "double sales" may well have inspired them to start cannibalizing waqfs for their own needs. Initially, expropriations were achieved through state-organized neighborhood associations ostensibly meant to rejuvenate moribund local waqfs. Their actual function was to redirect resources to the state treasury, enrich state officials, and also weaken clerics opposed to reforms. The Waqf Ministry brought transparency to the shift of control over waqf assets from clerics to the Sultan; it became common knowledge that growing numbers of aging classic waqfs were falling under state management (Öztürk 1995, pp. 69-77).

Cash waqfs were spared the mounting risks of classic waqfs. The main reason is that they tended to be much less valuable than the typical classic waqf. Their significance shrank further as inflation eroded their capital. Over a quarter-millennium, both classic and cash waqfs declined

in importance as investment vehicles. By 1800, the number of new waqf foundings was 38% lower than 160 years earlier. Shortly, we shall see that the size of the average waqf fell as well.

Forming a waqf was a privilege ordinarily reserved for Muslims. Indeed, only 51 of the 9867 Istanbul waqfs with surviving deeds were founded by a Christian or Jew. At least up to 1839, then, the decline in the waqf sector's economic importance could have reflected, in addition to the cannibalization and nationalization of classic waqfs, the shift in financial capital toward religious minorities.

As suppliers of short-term loans, cash waqfs fulfilled one function of a bank. But because Islamic waqf law barred them from accepting deposits, and from pooling resources with one another, they did not evolve into full-fledged financial intermediaries.³⁷ They were bound to become anachronisms when modern banking reached Istanbul. Indeed, they disappeared as local banks emerged, starting in the 1850s.³⁸

6. Rise of the Gedik Market

About a century before banking wiped it out, the cash waqf faced competition in capital markets from the *gedik*. Though the *gedik*'s origins are murky, the term started appearing in documents around 1500, as Istanbul's artisans acquired oligopolistic rights within the guild (*lonca*) system. Initially, a *gedik* referred to a guildsman's right to practice his craft without outside competition. The earliest *gedik* transactions involved the transfer of guild membership, along with associated rights and equipment, from a retiring guildsman to an apprentice, often a son. The *gedik* thus closed guild membership to strangers. At first with the guild's collective permission, then increasingly at will, *gedik* holders started selling shares of their privileges. The motivation was usually to raise cash to buy equipment, smooth consumption, or pay debts (Ağır 2018, pp. 139-40). These sales spawned a secondary market for divisible *gediks*.

By the 1750s, people unconnected to a guild were exchanging guild-regulated assets. Through this evolution, artisanal labor and capital got separated.³⁹ Whereas under Istanbul's classical guild system the owners of its oligopolistic rights were limited to commodity-producing

³⁷ In principle, the caretakers of cash waqfs could have done battle with conservative clerics. The absence of institutional vehicles for forming private political organizations made this unlikely (Kuran 2016).

³⁸ Istanbul's first major bank was the Ottoman Bank, founded in 1856. The preceding years witnessed the founding of a few smaller banks (Clay 1994).

³⁹ For further insights, see Yi (2003, pp. 148-56).

or service-supplying guildsmen, in the mature gedik market of the 1750s these rights were shared very widely. In fact, the traded assets now included productive assets unrelated to guilds. Rights once reserved for guilds thus got extended to a much broader population.

The gedik was unknown as an investment instrument until the 1650s. Rarely does the word appear in court records before 1700, and initially only to describe transactions limited to guild members and their relatives. Its explosive growth as an investment vehicle is visible in court records of the 1700s. Around 1750, 16.9% of all investment cases recorded in Istanbul's court registers involved a gedik; between 1800 and 1824, the share was 67.8% (Fig. 1). The latter figure points to the centrality the gedik achieved in Istanbul's economic life. Indeed, by this time most inheritance cases involved gediks, because of their presence in most investment portfolios. As gediks achieved such prominence, waqfs lost relative significance. The time trend of all new waqfs was essentially flat (Fig. 3).

Sultans had an ambivalent attitude toward gediks. On the one hand, gediks promoted economic decentralization, making it harder to track taxable resources. On the other hand, they created new sources of revenue. Through repeated decrees that attempted to centralize gedik records at the Central Istanbul court, sultans sought to preserve the gedik market while increasing its transparency to tax collectors (Kaya 2013b).⁴⁰

The gedik market constituted a rudimentary stock market. As already noted, what it lacked was a centralized registry for information on ownership and assets. Unsurprisingly, the market's informality exposed gedik buyers to fraud. A gedik could be sold to one buyer, then to another who could not easily verify the seller's ownership.⁴¹ Under the prevailing law, gedik trades did not have to be registered; gediks could change hands merely through a verbal agreement, before witnesses. But even a registered gedik subjected the buyer to risk. Any one of Istanbul's Islamic courts could harbor evidence of third-party claims on the assets involved. Istanbul's first formal securities market opened in 1873, at the start of Ottoman industrialization (Fertekligil 1993, pp. 18-34). Artisans whose shops and equipment had been securitized as

⁴⁰ The repeated reissuing of decrees testifies to the Ottoman state's limited administrative capacity. Even in their own capital, sultans could not control the caseloads of their own judicial appointees. Our own data set contains references to stipulations that the Central Istanbul court had exclusive jurisdiction over certain gedik cases. See, for example, Istanbul 105 (1811), 27a/2 and 28b/1.

⁴¹ For examples, see cases Galata 587 (1808), 6b/3, 12b/2, and 18a/1.

gediks were losing market share to modern firms. No gediks were listed on the Istanbul stock exchange. Like guilds, they faded away.⁴²

Between 1600 and 1839, then, Istanbul's financial markets witnessed two indigenous innovations with potential consequences for the composition of investors and thus the distribution of political power. One was the cash waqf's emergence as a liquid alternative to the classic waqf. The other was the gedik's emergence as a vehicle for securitization. Each innovation broadened investment opportunities, then became obsolete through institutional transplants from abroad.

What made gediks so popular? As we shall see, factors other than liquidity played key roles. Identifying them requires exploring the distributional effects of the innovations just discussed. To this end, Section 7 focuses on the gains of Istanbul's large Christian minority, and Section 8 on the weakening of constituencies poised to lose from the Gülhane Edict. These two sections will thus establish that well before 1839, the start of the reforms that restructured Ottoman governance, alliances of the classical Ottoman order were already fraying. New coalitions spearheaded the Westernizing reforms, not those traditionally in control of government, key economic sectors, and social rights. The rising elite corps contained far more non-Muslims than the one it supplanted.

7. Redistribution toward Christians

Regardless of the nature of its endowment—real estate or cash—the waqf was an investment vehicle available freely only to Muslims. Before the Gülhane Edict, only 0.5 percent of Istanbul's waqfs had a non-Muslim founder, who had to obtain permission from clerics, if not also from the Sultan himself.

Further evidence lies in gedik trends. In spite of decrees restricting gedik purchases to Muslims in one sector or another (Kal'a 1997, p. 147), sales to Christians (and occasionally to Jews) continued across the board. In fact, even officially banned transactions were registered routinely in Islamic courts staffed by Palace-appointed clerics. Fig. 4 suggests, in fact, that the gedik trade enabled Christians to capture a *growing* share of Istanbul's physical capital. By 1775, almost half of all gedik transactions were among Christians; and it exceeded half in the first quarter of the 1800s. Of the 1646 gedik cases in our data set up to 1824, 1497 feature identifiable

⁴² Economic histories of the Turkish Republic do not even mention the concept. See, for instance, Tezel (2015).

individuals; Muslims were involved as a buyer, seller, or both in 740; Christians in 1009; and Jews in just 38. The Christians' vastly disproportionate participation in the gedik market is illustrated in Fig. 5. The same figure shows that, like the participation of Muslims, that of Jews was disproportionately low.

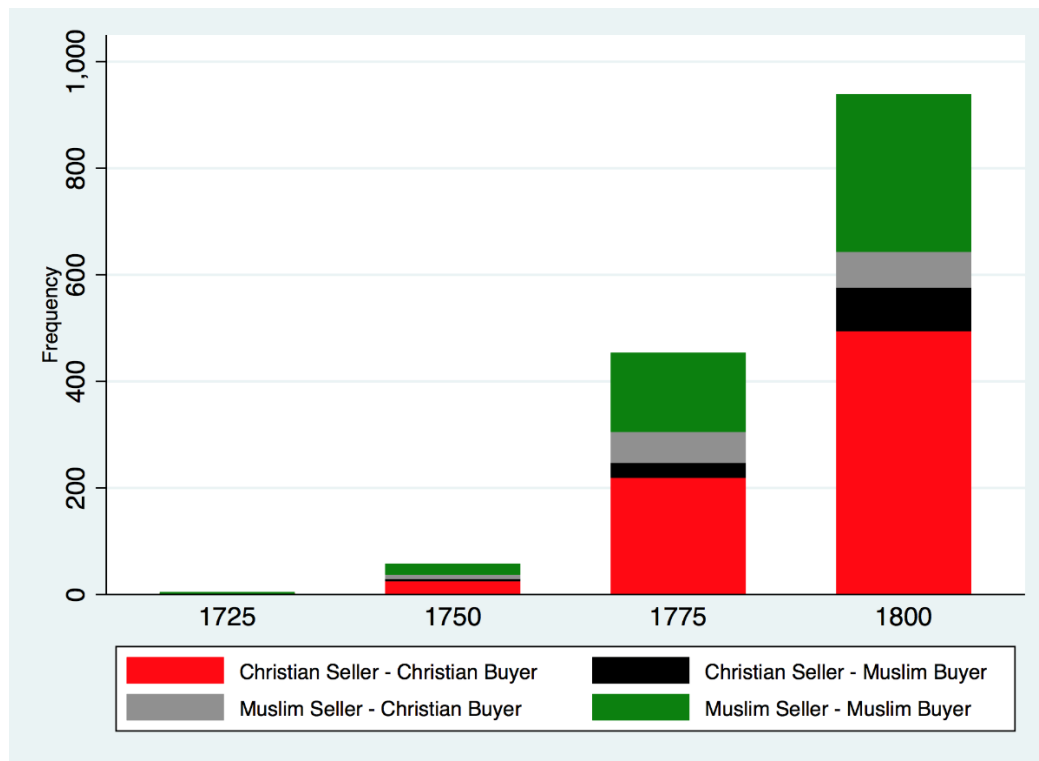


Fig. 4. Gedik transactions up to 1800s, broken down by religion of buyers and sellers. Computed from information in the 42 registers listed in notes 32-34. Muslim participation is disproportionately low for 1750-74 at the 90% significance level ($t=-1.34$), for 1775-99 at the 95% level ($t=-1.73$), and for 1800-24 at the 99.9% level ($t=-5.18$), Christian participation is disproportionately high for 1750-74 at the 95% significance level ($t=2.3$), and at the 99% level for the next two quarter-centuries ($t=11.02, 16.78$).

The growing prominence of Istanbul's Christians in the gedik market reflects inter-communal differences in investment opportunities. Whereas Muslims of means could found a waqf at will, Christians needed a costly special permission. This non-Muslim handicap would have diminished as Christians became more powerful as they prospered. But they remained more likely to channel capital to gediks. A key factor was their acquisition of more secure private property rights. Even before the formalization of these rights in 1774, European ambassadors routinely pressured Ottoman officials to leave Christian properties alone.

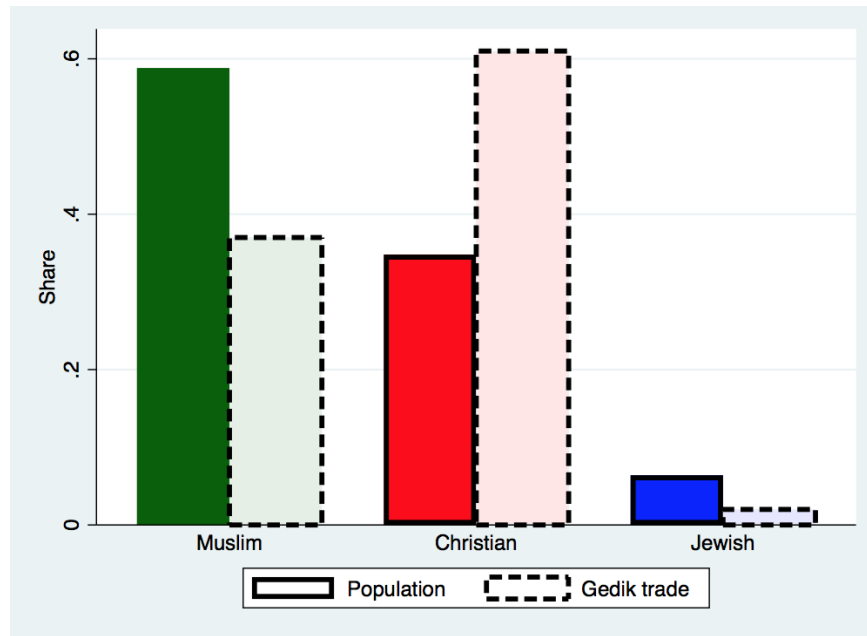


Fig. 5. Population shares of Istanbul's three religious groups and their participation shares in the gedik market, 1725-1824. Inter-communal transactions were split between the two sides. Hence, the gedik trade shares add up 100%. All three pairings differ statistically from random pairings at the 99% level of significance ($t=11.3$, 22.0 , and 11.1 , respectively).

A striking aspect of Fig. 5 is the contrast between Christians and Jews. Nothing in Islamic law accounts for the observed asymmetry. The explanation lies in European protection. As Ottoman Christians achieved material security, no European power sought to protect Ottoman Jews as a community, except transiently. In the period of interest here, then, Jews were more exposed than Christians to expropriation.⁴³

Studies of the rise of Ottoman non-Muslims have tended to focus on the protégé (*berathli*) status that Christian and Jewish merchants obtained from European consulates. Attaining a form of “dual citizenship,” these protégés gained the right to do business under the law of their protector—French law in the case of a French protégé (Kuran 2011, chap. 10; Artunç 2015).⁴⁴ Whatever the benefits protégés received from foreign business procedures, another benefit of their dual status was immunity to expropriation. Although Ottoman subjects formally had to obey Ottoman laws in Ottoman realms, in practice they were treated differently from otherwise

⁴³ Expropriation could be partial, in the form of opportunistic taxation.

⁴⁴ Jews were well represented among the dragomans (translators) hired by European embassies and given expatriate rights for commercial purposes. But the numbers of dragomans was no more than a few hundreds across the empire (Artunç 2015, pp. 727-29). So the institution of the dragoman could not have outstripped the Christian advantage based in treaty-based foreign protection.

identical non-protégés. That is because, as the empire lost global standing, sultans became increasingly reluctant to cross the European powers on which they depended diplomatically, militarily, and financially. Critical here is that in buying European legal rights, protégés also obtained material security.⁴⁵

We know already that as the gedik market exploded classic waqfs were being stripped of their assets through “double sales.” Since almost all waqfs were Muslim-controlled, privatized waqf assets accrued initially mostly to them. But some found their way into the gedik market, where they were transferred disproportionately to non-Muslims. Öztürk (1995, p. 75) observes that in the early 1800s the assets of hundreds of ailing waqfs were “bought by non-Muslims at low prices.” Jointly, then, the “double sale” and the gedik market contributed to the flow of Istanbul’s productive assets to Christians. Our own data confirm this sectarian wealth transfer.

Implicit in our account of redistribution toward Christians has been that gediks were profitable. In fact, they tended to deliver super-normal profits. Only fragmentary data on gedik returns are available, but they point to rates much higher than those of either waqf type.⁴⁶ The reason is that securitized sectors tended to be ones with high entry barriers. Legal protections were provided sometimes through Sultanic decrees but ordinarily through court verdicts on lawsuits brought by parties seeking to institute, preserve, or extend oligopolistic privileges.⁴⁷ As for enforcing the privileges that boosted gedik values, the key actors were soldiers, and specifically janissaries up to the last 15 years of our period.

Janissaries were slave soldiers recruited as boys from Christian families and raised as Muslim Turks. Their main role was to obviate the Sultan’s need to negotiate with regional strongmen for military manpower. Also, as foreign-born soldiers lacking local roots, they were expected to be particularly loyal to their master.⁴⁸ Charged with protecting the Sultan, they also participated in military campaigns. But their military value waned, and their real wages fell progressively, as they failed to adopt new military technologies. Increasingly, the 20,000 to 30,000 janissaries stationed in Istanbul took to supplementing their pay through side occupations.

⁴⁵ The privileges of protégés included the right to have one’s estate handled by a European consul rather than Ottoman officials. This further strengthened their material security.

⁴⁶ Ağır and Yıldırım (2015, pp. 230-31) document that in the silk weaving sector gedik prices were inflated through court-ratified entry barriers. In 1817, the average price of permitted looms was 150% higher than in 1802.

⁴⁷ For examples of relevant Sultanic decrees, see cases Bab 122 (1719) 7b/1, Galata 567 (1803) 92b/2, Galata 587 (1809) 96a/1, and Galata 636 (1821) 97b/2. And for pertinent court adjudications, see Galata 197 (1704) 22b/1 and Bab 173 (1740) 80b/3.

⁴⁸ See Crone (1980, especially chap. 10) and Blaydes (2017, pp. 493-95).

These included the protection of enterprises securitized as gediks, often in return for shares of the very enterprises they were serving. Janissaries guarded physical assets, such as stores and merchandise. They also blocked entry by competitors. The Palace tolerated their racketeering as part of a bargain with the leading shareholders (and often also operators) of securitized businesses (Ağır 2018, pp. 136-39). Businesses would obey price controls on their output to keep Istanbul's consumers content; in return, the Palace let shopkeepers earn supra-normal profits through entry restrictions and price ceilings on their inputs. As enforcers of anti-competitive rules, the janissaries formed a link in this bargain that contributed to the gedik's popularity. Sectors of Istanbul's economy differed, of course, in vulnerability to oligopolization. It was easier to shut down a new bakery than to drive a peddler out of business.⁴⁹

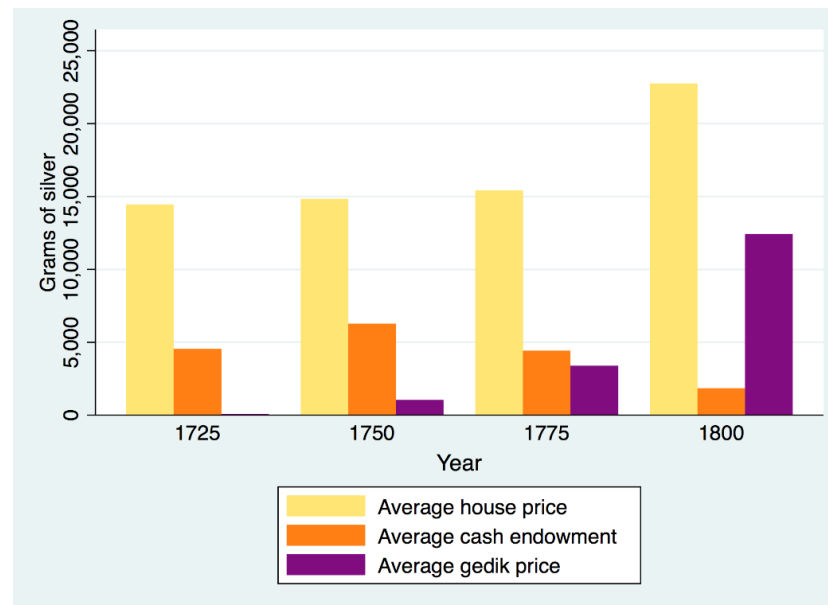


Fig. 6. Average house price, average cash waqf investment, and average gedik transaction, 1725-1824, measured in grams of silver. Computed from information in Aydın et al. (2015) and the 42 court registers listed in notes 32-34. A variant of this graph, using inflation-adjusted silver rather than silver itself as its measure of value, is in Appendix C. It displays the same trends, except that the drop in the average cash endowment is even steeper.

As gediks earned supra-normal profits, the real interest rates of cash waqfs were essentially stable.⁵⁰ Meanwhile, the expected returns on classic waqfs were almost certainly

⁴⁹ Reopening a closed bakery at another location involved renting and furnishing a new store. A peddler simply moved to another street, and he might eventually return.

⁵⁰ Between 1725 and 1824, the trend is positive but negligible in size. In an OLS regression involving a 25-year time coefficient, the period effect on the interest rate is 0.0002 ($t=9.84$).

falling because of rising expropriations. By themselves, the growing Christian domination of the gedik trade, the fall in the number of new waqfs, and the relatively high returns of gediks do not prove the redistribution of wealth toward Christians. In principle, average waqf size could have grown enough to outstrip the fall in waqf numbers. In fact, new cash waqfs were diminishing in size even as the average gedik investment was growing (Fig. 6). Houses, which formed the most common asset within a classic waqf endowment, gained value in the 1800s, after a century of remaining flat. But the confiscation risk would have swamped the capital gains involved.

8. Declining Economic Fortunes of Conservatives

The Gülhane Edict was a reaction partly to the economic advances of its Christians relative to its Muslim majority. On the one hand, it legitimized the political power that Christians had started to exert on the basis of their growing economic clout.⁵¹ On the other hand, it extended to Muslims property rights that Christians had acquired through foreigners, thus pleasing reformist Muslim elites who wanted to follow the “Christian path” to enrichment. In themselves, though, the benefits to Christian and Muslim elites explain neither why the Sultan proclaimed the edict nor the edict’s peaceful acceptance. After all, conservative constituencies might have blocked it or forced the annulment of its revolutionary provisions. Over the previous two centuries, they had obstructed various reforms, spearheading 12 major mutinies in Istanbul alone from 1622 to 1839 (Kafadar 1981, chap. 5). If on this occasion resistance was limited, it is because the empire’s most conservative military units, the infantry known as janissaries, had been annihilated, and clerics, most of whom favored the traditional Ottoman order, had weakened economically. Both developments were connected to processes already reviewed: the declining appeal of waqfs and the explosion of the gedik trade.

Starting in the early 1600s, the janissaries had become a source of chronic discontent. Angered by their falling pay, they revolted about once every two decades during our period of analysis, sometimes in alliance with other disaffected constituencies and often exploiting Palace rivalries. They became especially menacing as the Palace formed complementary military units

⁵¹ Although it was illegal to pipe water into one’s home, wealthy Christians had started to defy the imperial ban. For evidence, see the following cases in Kılıç, Aşık, and Pakırdağ, eds. (2002): 8/363/4 (1802), 8/363/5 (1802), 8/365/1 (1804), and 8/365/2 (1804). In three of these four cases, the Christian beneficiary of piped water carries an honorific title traditionally reserved for Muslims. Decades before the Gülhane Edict, Christians were also acquiring clout in agencies that turned into the Foreign Ministry (Findley 1980, pp. 126-40, 203-9).

based on foreign templates. Military modernization devalued the skills of janissaries, incentivizing them to obstruct military reforms. Ultimately, though, they failed.⁵² With the formation of a new and technologically modern infantry in 1797, they became a relic. They survived for another quarter-century essentially as a detested and feared crime syndicate. When they revolted in 1826, they were annihilated with the help of the modern military units they had tried to obstruct.

Artisans, merchants, and shopkeepers helped the Sultan suppress the 1826 revolt. Helping to capture mutineers, they also participated in destroying the Janissary Corps. They had come to despise janissaries, who preyed on them regularly. Even guildsmen resented the janissaries, in spite of the protections against competition that they received through them. They felt that the janissaries charged too much for their services, which often took the form of *gediks*. Moreover, in blocking entry by others, janissaries sometimes set up competing businesses themselves. By 1826, then, the janissaries had made bitter enemies even of *gedik* holders, to whose prosperity their racketeering had contributed (Kafadar 1981, chaps. 3-4). Finding the janissaries too costly and too unreliable, they were looking for alternative ways to preserve the profitability of the assets underlying their *gediks*.

The year 1826 also saw the founding of the Ottoman Waqf Ministry. This is no coincidence. The ministry's function was already being served, albeit in a decentralized manner, through Palace-directed neighborhood committees. Through this ministry, the Sultan formed a single pool of capital to fund empire-wide modernization projects. This consolidation could not have been attempted before 1826, lest the janissaries use it as a pretext to revolt. The janissaries had been sharing in rents by converting waqf assets into *gediks*. They had been competing with the state for control of assets stripped from waqfs. Centralized nationalization mortally threatened their livelihood.

If the janissaries suffered from transformations preceding the *Gülhane* Edict, they were not alone. On the whole, Muslim clerics also lost ground. They had played huge roles in the city's economy, overseeing all waqfs and earning rents from the administrative and financial decisions of their waqf caretakers. In our quarter-millennium, the "double sale" yielded clerics short-term gains, as they could veto any rental agreement. But the stripping of waqf assets

⁵² Their last successful rebellion was in 1807. It deposed the reformist sultan Selim III (r. 1789-1807) and placed on the throne an arch-conservative, Mustafa IV. But another reformist, Mahmud II, was soon in charge.

diminished the economic importance of the waqf sector as a whole. Government nationalization of waqfs, surreptitiously up to 1826 and then openly, further eroded the clerics' economic base. It shrinking the assets they supervised, it reduced their income. Loss of economic power implied loss of political power, too. Clerics could have compensated for the erosion of their traditional economic base in waqfs through heavy participation in gediks. Yet, in the half-century to 1825, as gediks proliferated, only a modest 2.5 percent of all participants were clerics. Whereas they were central to the waqf-based traditional economy, they were strikingly inconspicuous in the new economic sectors.

9. Statistical Analysis

Sections 5-7 documented that the groups welcoming the Gülhane Edict had either advanced already during the century preceding 1839 or stood to benefit from a new economic order. Section 8 then showed that groups with a stake in old Ottoman institutions had either weakened or vanished. Along the way, we encountered trends consistent with the hypotheses of Section 4. Recall that they were responses to changes in the returns and safety of alternative investment options. The reweighting of investment portfolios differed across groups, in ways that varied over time.

Now we present statistical tests with various controls. Our first test, a multinomial logistic regression, compares, across five investor groups, the probability of investing in a classic waqf (columns 1, 3, 5, 7) or gedik (columns 2, 4, 6, 8) relative to the cash waqf, over the 1750-1824 period, when gediks were common. The investor groups consist of Muslim commoners, Muslim political elites, Muslim economic elites, Muslim military, and non-Muslims. Political elites consist of people with honorific titles indicating that they were high officials connected to the Palace⁵³ or belonged to the religious establishment⁵⁴ Muslim economic elites were dignitaries carrying mainly civilian-conferred titles.⁵⁵ In the regression, Muslim commoners serve as the reference group. Time dummies, τ_t , capture period-specific fixed effects, and court dummies, κ_t , account for court-specific fixed effects. The data come from the three courts to which our 42 fully coded registers belong and the waqf deed catalog of Aydın et al. (2015). The regression

⁵³ Mainly Pashas.

⁵⁴ Mainly *efendi*, sometimes *molla*, *hafiz*, *hoca*, or *şeyh*.

⁵⁵ *Bey* or *çelebi*.

tests whether the probabilities of using given investment instruments follow the logic offered in Section 4. The estimated equation is:

$$investment\ probability_i = \alpha_0 + \alpha_1 investor_i + \tau_t + \kappa_t + \varepsilon_i.$$

**Table 2. Probabilities of investing in a classic waqf or gedik over a cash waqf:
Istanbul's investor groups, 1750-1824**

VARIABLES	(1) Classic waqf	(1) Gedik	(2) Classic waqf	(2) Gedik	(3) Classic waqf	(3) Gedik	(4) Classic waqf	(4) Gedik
Muslim political elite	0.45*** (0.10)	-0.94*** (0.56)	0.42*** (0.06)	-1.00* (0.57)	0.52*** (0.09)	1.43*** (0.34)	0.39*** (0.10)	-1.45*** (0.32)
Muslim economic elite	0.09 (0.33)	0.02 (0.54)	0.06 (0.38)	0.07 (0.53)	0.11 (0.33)	-0.07 (0.65)	0.08 (0.35)	-0.03 (0.61)
Muslim military	-1.21*** (0.11)	0.25*** (0.09)	-1.09*** (0.15)	0.08*** (0.01)	-1.19*** (0.11)	0.19 (0.15)	-1.08*** (0.17)	0.13 (0.09)
Non-Muslim	-2.16*** (1.06)	2.68*** (0.78)	-2.04** (1.04)	2.56*** (0.83)	-2.13** (1.04)	2.66*** (0.96)	-2.12** (1.06)	2.66*** (0.96)
1775-99			-0.71*** (0.25)	1.64* (0.99)			-0.74*** (0.24)	0.85 (0.81)
1800-24			-1.11*** (0.09)	2.30*** (0.52)			-1.24*** (0.21)	1.03 (1.11)
Bab court					0.56*** (0.03)	-3.32*** (0.11)	-0.09 (0.12)	-2.92*** (0.43)
Galata court					0.57*** (0.03)	-1.15*** (0.01)	0.18*** (0.02)	-1.01*** (0.14)
Constant	0.07*** (0.01)	1.38* (0.83)	0.57*** (0.06)	-0.32 (0.21)	-0.41*** (0.13)	2.50*** (0.18)	0.60*** (0.13)	1.56* (0.87)
Observations	1,989	1,989	1,989	1,989	1989	1989	1989	1989
Pseudo R-squared	0.18	0.18	0.28	0.28	0.32	0.32	0.35	0.35

Reference category for dependent variable: investing in classical waqfs.

Omitted investor group: Muslim commoner.

Omitted date range: 1750-74.

Omitted court: Central Istanbul.

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Data: Waqfs of the Bab, Central Istanbul, and Galata courts recorded in Aydın et al. (2015) and gedik transactions drawn from our court registers spanning 1750-1824

Four pairs of specifications are reported in Table 2. One result is that the probability of investing in a classic waqf fell during the century preceding the Gülhane Edict (specifications 3 and 7). This is consistent with the diminishing security of classic waqfs. Another result is that, relative to Muslim commoners, the reference group, non-Muslims were consistently less likely to found classic waqfs, and consistently more likely to found gediks. These findings accord with hypotheses 1 and 2. The vast majority of the non-Muslims in our sample were Christians, who had distinctly stronger property rights. They were more likely to form gediks because, on account of stronger property rights, they had relatively high expected net returns; and stronger

property rights also gave them less need to shelter protect wealth from expropriation. Muslim military show similar tendencies, though the coefficients are smaller and not always significant. They had greater reason than Muslim commoners to fear expropriation; by the same token, their involvement in protecting securitized enterprises would have involved payoffs in the form of gediks. Among Muslims, the group exhibiting the clearest tendency is the one that carried the highest risk of expropriation: political elites. They were consistently more likely to endow classic waqfs and, in three of the four specifications, less likely to invest in gediks. These findings are also in line with hypotheses 1 and 2.

Table 2 also provides support for hypothesis 3, which concerns the share of real estate in the investor's portfolio. Political elites were often granted land and buildings in return for their services, or they were allowed to acquire immovable properties through shady means. What matters here is that their portfolios were weighted heavily in favor of real estate. Regardless of controls, they were very significantly more likely to invest in classic waqfs, whose corpus had to consist of real estate, over cash waqfs (specifications 1, 3, 5, 7). Twelve additional specifications are given in Appendix D. Specifications 5-8 repeat the exercise with data limited to registrations. Specifications 9-12 aggregate all Muslim investors, regardless of social status, into a single group. Finally, specifications 13-16 disaggregate Muslim investors even further than Table 2, making additional distinctions according to title. These robustness checks all show that our results are invariant to how investors are grouped.

Our second test uses waqf-deed data drawn from Aydın et al. (2015) to examine the determinants of wealth invested in cash waqfs (Table 3). The trends discussed in sections 5-7, and in particular the emergence of a very lucrative, gedik market, make one expect a decline during the century preceding the Gülhane Edict. The reason for limiting this particular test to cash waqfs is that the deed of a classic waqf listed the endowed real estate without appraisals, hindering comparability. We run the following regression using ordinary least-squares:

$$\text{endowment size}_i = \alpha_0 + \alpha_1 \text{investor}_i + \tau_t + \kappa_t + \varepsilon_i,$$

where the dependent variable, *endowment size_i*, measures the investment in cash waqfs by investor group *i*. Endowment sizes were recorded in multiple monetary units; for comparability, we standardize them in logarithms of inflation-adjusted silver.

Table 3. Wealth invested in cash waqfs by Istanbul's investor groups, 1600-1850

VARIABLES	(1) log real endowment	(2) log real endowment	(3) log real endowment	(4) log real endowment
Muslim political elite	0.43** (0.18)	0.63*** (0.15)	0.47*** (0.10)	0.48*** (0.12)
Muslim economic elite	0.02 (0.14)	0.14 (0.10)	0.03 (0.05)	0.01 (0.07)
Muslim military	0.20 (0.12)	0.27*** (0.09)	0.18** (0.08)	0.17** (0.08)
Non-Muslim	0.57 (0.39)	1.08*** (0.29)	0.68** (0.30)	1.15*** (0.13)
1625-49		-0.83*** (0.23)		-0.54** (0.25)
1650-74		-0.87*** (0.25)		-0.56** (0.27)
1675-99		-0.62* (0.35)		-0.40 (0.33)
1700-1724		-0.16 (0.30)		0.06 (0.30)
1725-49		-0.28 (0.21)		-0.05 (0.22)
1750-74		-0.29 (0.28)		-0.06 (0.28)
1775-99		-0.58* (0.33)		-0.43* (0.25)
1800-1824		-1.34*** (0.25)		-1.03*** (0.19)
1825-1849		-1.77*** (0.27)		-1.66*** (0.24)
Court fixed effects	No	No	Yes	Yes
Constant	8.29*** (0.18)	9.17*** (0.29)	8.48*** (0.06)	9.38*** (0.22)
Observations	2236	2236	2236	2236
R ²	0.01	0.16	0.13	0.26

Omitted investor group: Muslim commoner.

Omitted date range: 1600-24.

Omitted court: Central Istanbul

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Data: Cash waqfs recorded in Aydin et al. (2015).

Three findings stand out. First, the specifications with time controls (2 and 4) indicate that investments in cash waqfs fell dramatically in the late 1700s and early 1800s, suggesting that capital was being diverted elsewhere, almost certainly to gediks. A complementary factor may have been that Istanbul's wealth was shifting in favor of groups for whom the risk was low anyway, namely, Christians. Second, in all specifications with controls (2-4), the non-Muslim coefficient is positive. Remember that non-Muslims formed few waqfs, because they could not

do so without a costly permit. Most of the waqfs that they did establish were cash waqfs, and they were founded in the century preceding the Gülhane Edict. These cash waqfs must have been large enough to justify the high cost of obtaining permission from Muslim clerics and the Sultan. Finally, regardless of specification, the Muslim political elite coefficient is positive. This is intriguing in the light of the tests reported in Table 2, which showed that they were more likely to invest in classic waqfs than in cash waqfs. Insofar as they made liquid investments, they would have opted for cash waqfs over gediks, because they especially likely to face expropriation, and, unlike classic waqfs, cash waqfs never became major targets of expropriation. Sultans left cash waqfs alone because of the smallness of these investments and also because of the relative difficulty of locating the capital of a cash waqf; the caretaker could claim that it was trapped in unperforming loans. Sultans seeking wealth to appropriate prioritized larger investments. Appendix E contains eight robustness checks. Specifications 5-8 repeat the exercise with more disaggregated Muslim investor groups; and specifications 9-12 do so with more aggregated ones. The reported conclusions are unaffected.

In the foregoing regressions, a crude periodization is used to control for intemporal effects. It involves dividing time into quarter-century periods. Although this method suffices to show broad trends, it makes it difficult to identify finer interactions between time and investor groups. How, say, might the inclination of Muslim political elites to invest in gediks have varied over time? And how might this variation have compared with that of Christians? The conventional way to answer this question would be to add into the regression time \times investor_{*i*} interaction terms. But every such addition would come at the expense of analytic power. Fortunately, General Additive Models (GAMs) can be used to capture fine intertemporal variations.⁵⁶ This technique allows the examination of intertemporal effects free of any functional assumptions, in other words, nonparametrically. In particular, it enables the effects of years on investment decisions to be estimated without the restriction of predefined periods. A major difference between Generalized Additive Models and conventional regressions of the types shown in Tables 2 and 3 is the lack of numerical output. Since the coefficients are not

⁵⁶ GAMs provide an advantage where theoretical claims warrant non-linear effects that cannot easily be captured by polynomials. In such cases, it is helpful to refrain from imposing linear functional forms in empirical tests. For descriptions of the method, see Beck and Jackman (1998), Neundorff (2010), and Grasso, Farrall, Gray, Hay, and Jennings (2017).

fixed, there is no single point estimate to represent the relationships of interest. Instead, the non-parametric relationships are visualized using graphs.

To test the effects of year and investor type on investment decisions using GAMs, we estimate the following equation:

$$\gamma_i = \alpha_i + s_1(\text{Year}_i) + s_2(\text{Investor}_i) + s_3(\text{Year}_i, \text{Investor}_i) + s_4(\text{Court}_i) + \epsilon_i$$

where γ_i is the binary variable that takes the value 1 if the investment is a gedik and 0 if it is a waqf. α_i is the intercept. The interactions between each investor type and years are smoothed by the function s_n with $n \in \{1, 2, 3\}$. $s_4(\text{Court}_i)$ is the court random effect to account for differences induced by applying to different courts. ϵ_i is the error term, where $E(\epsilon_i) = 0$ and $\text{var}(\epsilon_i) = \sigma^2$.⁵⁷

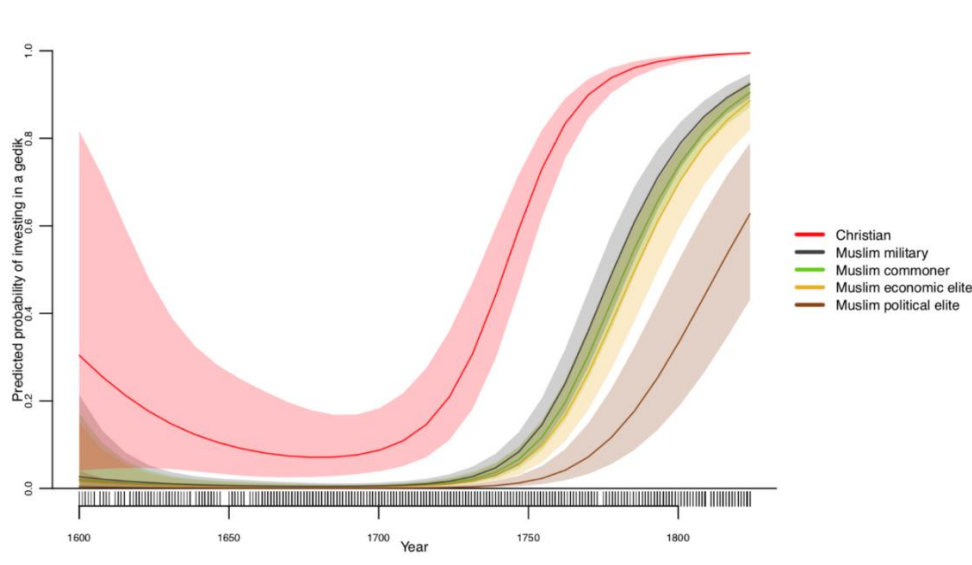


Fig. 7. Variations over time in the probability of investing in gediks, by investor group, 1600-1824. The bands of the curves represent confidence intervals. The data come from the 42 court registers listed in notes 32-34. The estimation uses GAMs.

Fig. 7 shows how the predicted probabilities vary over time. Most striking is the Christian lead in investing in gediks. The tendency of Christians to invest in gediks starts rising in the early 1700s, a half-century before Muslims join in. Also, the Christian probability remains higher than that of Muslims thereafter. This is consistent with the regressions presented in Tables 2 and 3; and it reflects the stronger property rights that Christians attained by virtue of foreign

⁵⁷ Following Keele (2008), the preferred parameter selection criterion is generalized cross-validation that automatically selects smoothing parameters.

protections. The intra-Muslim variations are also instructive. In line with Tables 2 and 3, they show military elites were quickest to enter the gedik market and that political elites were the last to join in. Officers supervised the janissaries who boosted gedik values through racketeering; they would have shared in the rents that janissaries earned in return for the protection they gave to securitized businesses. Political elites were laggards because, as the most vulnerable group to outright confiscation, they were most in need of the security afforded by waqfs. But as the security afforded by waqfs diminished, they, too, became increasingly likely to invest in gediks.

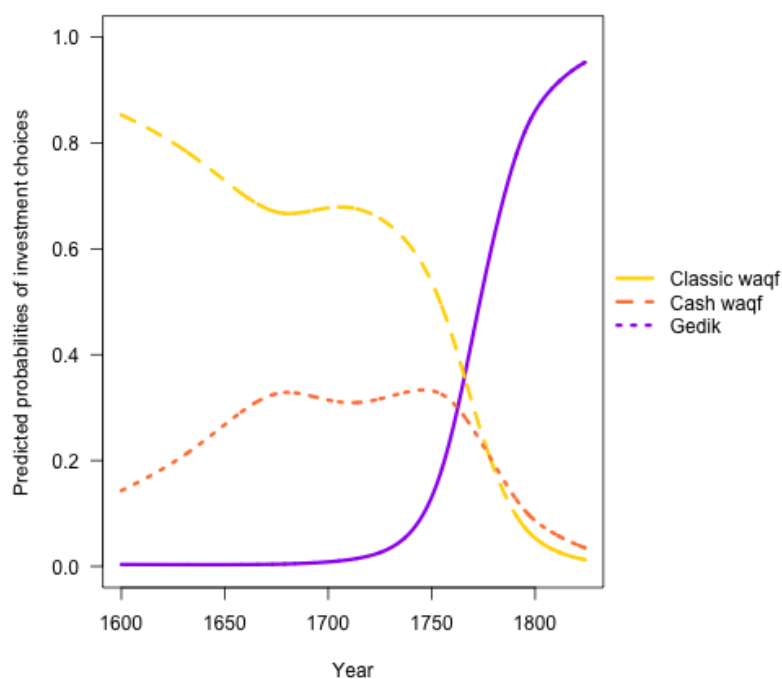


Fig. 8. Variations over time, from 1600 to 1824, in investment probabilities by type of investment for the Bab, Central Istanbul, and Galata courts: classic waqf, cash waqf, and gedik. The gedik data come from the 42 court registers listed in notes 32-34 and the new waqf data from the entries in Aydın et al. (2015) for the Bab, Galata, and Central Istanbul courts. The estimation uses GAMs.

GAMs can be used also to compare the time trends of all three of our long-term investment instruments in a standardized way, using the same controls. To test the effects of year on investment decisions, we use the following model:

$$m_i = \alpha_i + s_1(\text{year}_i) + s_2(\text{court}_i) + \epsilon_i,$$

where m_i is the factor variable that takes the value 0 if the investment is classic waqf, 1 if the investment is cash waqf, and 2 if the investment is gedik. α_i is the intercept. The effect of year is

smoothed by the smoothing function s_1 . $s_2(court_i)$ is the court random effect to account for differences in induced by applying to different courts. ϵ_i is the error term, where $E(\epsilon_i) = 0$ and $var(\epsilon_i) = \sigma^2$.⁵⁸

Fig. 8 depicts the results. It shows that the explosion of the gedik market coincided with the shrinkage of new investments in classic waqfs. The two time trends are practically mirror images of one another. Cash waqfs followed classic waqfs with a lag of about a half-century. This is consistent with the shift of investment resources from classic waqfs to both cash waqfs and gediks. Evidently, at least for a while, the loss of new cash waqfs because of investors opting for gediks was counterbalanced by gains from investors switching from increasingly less secure classic waqfs to cash waqfs.

10. Transformation of a Natural State

In their sweeping categorization of social orders, North, Wallis, and Weingast (2009, chap. 1) distinguish between “open access orders” and “natural states”. In the former, enforceable laws grant extensive social, economic, and political freedoms to an entire population. In the latter, freedoms are reserved through violence for narrow factions. Laws justified through an ideology, typically a religion, are used to delineate, on the one hand, hierarchies, privileges, and tax obligations, and on the other, meritorious and punishable acts. The governing coalition of a natural state perpetually seeks to improve its position, and its members monitor their intra-coalition bargain. Palace coups, executions, and uprisings are among the manifestations of power struggles that may upset the political status quo. The coalition must also deal with efforts to broaden the opportunities of outsiders. So a natural state is never static. The bargain that sustains its ruling coalition gets renegotiated, often tacitly, with changing circumstances.

From its founding in 1299 to its demise in 1922, the Ottoman state was a natural state with fluid institutions. The composition of the Sultan’s ruling coalition changed substantially at certain junctures, with some groups gaining at the expense of others.⁵⁹ The quarter-millennium studied here offers major cases in points. Once the backbone of the Ottoman military, the

⁵⁸ Again, the preferred parameter selection criterion is generalized cross-validation, which selects the smoothing parameters automatically.

⁵⁹ One transformation came in the 14th century, when the Ottoman state, until then a small power neighboring a hegemon became an ambitious empire (Kafadar 1995, pp. 138-50). The 16th century saw another renegotiation among elites as the empire’s main administrative unit changed from district to province (Kunt 1983).

janissaries became dispensable as technological advances devalued semi-professional soldiers; and their resistance to reorganization, due to vested interests in their ranks, sealed their fate (Aksan 2007, chap. 5). Because of their criminality, they had become a social menace anyway. Their replacements were more open to technological change, more comfortable with Western transplants, and generally more distant to clerics. After 1839, the Ottoman military increasingly supported Westernizing reforms; and, as Ottoman rule collapsed, active and former military officials headed the new coalition that spearheaded Turkey's Kemalist reforms and then its transition to multi-party democracy (Ahmad 1993, chaps. 1-6).

Another key development of 1600-1839 was the meteoric advancement of Ottoman Christians—mostly Greeks and Armenians. In the empire's heyday, its Christians were not more prosperous than its Muslims. Although within any given city or region they might have excelled in certain sectors, they were excluded from high government and only in rare circumstances could they shelter wealth through waqfs (Kuran 2011, chap. 9). The emergence of gediks in the mid-1600s, initially at the initiative of capital-starved guilds, provided lucrative investment opportunities unavailable to Christians earlier. Meanwhile, growing foreign protections for Christians made their gedik investments increasingly secure. Achieved through entry barriers in securitized sectors, they achieved economic prominence. Grudgingly, but also to raise its tax base, the ruling coalition allowed Christians to leap ahead of Muslims. This transformation occurred peacefully and over several generations. Ultimately, the Gülhane Edict legitimized it.

The gedik market developed without clerical supervision, even as waqfs, traditionally regulated by clerics, lost their inviolability. Clerical rents from waqfs shrank. More consequentially, the waqf's loss of economic centrality facilitated secularization on multiple fronts. In the empire's heyday, Islamic courts treated non-Muslim testimony as inferior to that of Muslims (Kuran and Lustig 2012); and in daily life non-Muslims endured numerous indignities, such as restrictions on dress and modes of transport (Braude and Lewis 1982, especially chaps. 1, 6). The Gülhane Edict made all such discrimination illegal. Subsequent reforms transferred various clerical duties to secular professionals. Thus, in 1850 the opening of commercial courts narrowed the judicial roles of Muslim clerics; and in 1868 the first secular school for training top government servants transferred to secular teachers, including foreigners, educational duties that had been their preserve of *medrese* graduates—professionals with formal Islamic training.

Scholarship on the Gülhane Edict has vastly underappreciated the role of internal motivations. The edict was greeted with broad approval precisely because of prior internal transformations. If its function was to withdraw from Muslims rights they still exercised profitably, the prodding of European ambassadors would probably have fallen on deaf ears. Likewise, if Ottoman administrators had promulgated policies distressing to large Muslim constituencies, massive reactions would have followed. European advice was welcomed and Europhilic officials launched revolutionary initiatives precisely because they mirrored already unfolding developments.

11. Institutional Roots of the Unfolding Sectarian Redistribution

The above findings provide new insights into the remarkable advances that the Middle East's religious minorities registered in the late 1700s and early 1800s, with Christians in the lead. They indicate that both the Ottoman sultan's right to expropriate and the sheltering of wealth in waqfs contributed to inter-communal inequalities disfavoring Muslims. As Muslims of means, especially officials, converted assets into waqfs, they locked assets into inefficient pursuits. This became a growing handicap as Christian investors bought higher-yielding gediks disproportionately (Fig. 5). Because of the liquidity of gediks, a much higher share of non-Muslim capital than Muslim capital flowed into the evolving economy's most lucrative sectors. It is as if, in multireligious Nigeria, Muslims locked capital in coal-fired utilities while Christians channeled resources freely into high technology. As Istanbul's gedik market exploded, new technologies and business techniques were filtering in from the West, and the Industrial Revolution was just decades away. Insofar as Western innovations diffused to Istanbul's economy, enterprises securitized as gediks would have benefited disproportionately; real estate locked up in waqfs would hardly have been touched.

If gediks were so lucrative, why did wealthy Muslims underinvest in them so decisively? As the "gedik era" unfolded, much Muslim wealth was locked in waqfs providing rental income. Through two means, each under the guise of rescuing troubled waqfs, Muslims tried to release wealth for use in higher-yielding investments: nationalization and privatization. So massive was the classic waqf sector that it took generations to complete the desired resource reallocation. Meanwhile, Muslims fell substantially behind their non-Muslim compatriots.

The Muslim propensity to invest in waqfs varied directly with risk of expropriation. The risk of having private property confiscated was highest for top political officials and relatively low for Muslim artisans, merchants, and shopkeepers. In fact, and as our regressions show, the latter group, consisting mostly of commoner with low risk of expropriation, were more likely than political elites to invest in gediks than in classic waqfs. This finding deals another blow to the common belief that the popularity of waqfs reflected charitable motives.

The first two reformist Ottoman sultans of the early 1800s undoubtedly saw how imperial confiscations distorted the investment choices of their high officials. They tried to alleviate the insecurity of officials by promising to respect their property rights. But their promises lacked credibility. Indeed, both broke their promises in financial emergencies.⁶⁰ It took a momentous occasion like the Gülhane Edict to make the promise credible. The edict was announced as inaugurating a new era at a ceremony attended by Ottoman and foreign dignitaries. All top statesmen, from the Sultan on down, took an oath committing them to the edict's principles—an event without Ottoman precedent (Akyıldız 2011, pp. 2-3).

The formation of new classic waqfs fell massively before 1839; insofar as people were investing in waqfs, they were founding cash waqfs. Not only were cash waqfs more liquid, but they became relatively more secure after the Palace started to nationalize classic waqfs (Fig. 3). These trends confirm that Istanbul's residents were sensitive to property rights. They suggest also that elite Muslims—those with the most assets—stood to gain from a repeal of the Sultan's confiscation privilege. The Gülhane Edict is often viewed as a victory for the empire's non-Muslims and commoners. In fact, it benefited Muslim elites, too.

Insofar as the waqf harmed Muslim interests, Muslim elites would have wanted the relaxation of waqf law, because it is they who founded most new waqfs and controlled most existing waqfs. But implementing such a goal would have been difficult. For one thing, the prevailing rules prohibited inter-waqf cooperation; they also barred the use of waqf resources for political purposes (Kuran 2016). For another, any move to alter waqf law would have irked the beneficiaries of traditional rules. Such constituencies included elites who founded waqfs to secure largely private goods on the pretext of delivering charity (Cansunar 2018). In any case,

⁶⁰ Several Ottoman chroniclers of the 1700s and early 1800s had advised the Palace to limit confiscations for economic gains. Defterdar Sarı Mehmet Paşa (1717/1971) offers an example. In the decades preceding 1839, Ottoman sultans promised explicitly to end expropriations in 1812 and 1826 (Arslantaş 2017, pp. 231-34). For theoretical insights, see Veitch (1983).

the waqf was not widely recognized as a source of Muslim disadvantage until late, after the explosion of gediks generated relatively more lucrative opportunities. Before then, it was viewed as a Muslim privilege. As the new investment options achieved wide recognition, the privatization and nationalization of waqfs gained momentum.

At its emergence in the 700s, the waqf provided an ingenious solution to problems that threatened the economic viability of early Islamic states. Specifically, it spurred wealthy officials to accumulate and also to invest in public goods. If eventually it contributed to economic underdevelopment, this was an unanticipated by-product of an initially beneficial innovation. The waqf kept civil society anemic. This, too, was an unintended effect of rules meant to solve problems, in this case, misalignments between the incentives of waqf founders and caretakers. This paper adds that, a millennium after its emergence, the waqf had yet another unintended effect. It held Muslims back economically vis-à-vis the non-Muslims living in their midst.

Whereas the waqf was absorbed into Islamic law, Sultanlic expropriation never secured Islamic approval as a governance tool. Under Islamic law, legitimate private wealth had to be respected. Although illegitimate wealth could be confiscated, it was not supposed to accumulate in the first place. For this reason alone, the clerics overseeing state policies could have charged their masters with abuse of authority. But that would have entailed huge personal risks, precisely because civil society was impoverished. Had civil society developed healthily, sultans could have been forced to stop expropriating much earlier than 1839. Muslim incentives to form waqfs would have faded sooner, spurring more Muslim investment in gediks.

With observed transitions between “stages” of the natural state, the analytical challenge is to reconcile them with the incentives of key players. As North, Wallis, and Weingast put it, one needs to explain why elites alter rights. In this vein, we have illuminated why a momentous institutional rupture of the late Ottoman Empire occurred quite peacefully. The rupture generated minimal resistance because it was aligned with the interests of major powerful constituencies.

12. Conclusions and Further Implications

Bold reforms are commonly attributed to foreign-based existential threats, which prompt local leaders to institute institutional changes in an effort to maintain power and independence. In fact, the trigger need not come from abroad. Fundamental reforms may be instigated by elites responding to shifts in domestic distributions of wealth and power. This is the message of North,

Wallis, and Weingast (2009). The Gülhane Edict, which put the Ottoman state on a reform path involving broader rights and Westernization, offers a case in point. The existential threat that led the Ottoman Empire's Muslim political elites to concoct and support a massive expansion of rights came primarily from steadily prospering local Christians. They gave up longstanding privileges based on their religion and social status in order to start benefiting from the opportunities that accounted for the economic advances of their Christian compatriots. For his part, the Sultan voided his right to expropriate at will in a bid to raise his fiscal capacity in the face of massive resource needs.

In broadening rights, the Gülhane Edict also withdrew privileges from huge groups. Most critically, it formally ended the legal superiority of Muslims over Christians and Jews. Nevertheless, the edict was generally welcomed and protests were limited to a few secondary towns. In view of the far less ambitious earlier reforms that were quashed, these reactions demand an explanation. Of the two groups that had spearheaded the resistance to earlier reforms, one was gone and the other had weakened enormously. Indeed, the conservative infantry units that served as the shock troops of earlier revolts had been annihilated in 1826, and the clerics who opposed reforms in the name of Islam had lost economic strength and, in tandem, their legitimization power that Rubin (2017) has characterized as a source of Ottoman conservatism. The clerics' power had depended on the rents that they earned through supervision of the vast waqf sector. These rents, and thus the prosperity of clerics started to decline in the mid-1700s, as waqfs became less safe and lost popularity, reducing the available rents. As clerics lost economic ground, their ability to block Palace initiatives fell in tandem. In 1839, the vast majority of the clerics serving the sultan, including his chief mufti (*şeyhülislam*), endorsed the edict's contents.

A huge literature on the global consequences of the West's economic ascent focuses on the choices of colonizers. Thus, a seminal article by Acemoglu, Johnson, and Robinson (2001) attributes differences in non-Western development trajectories to variations in institutions imposed by European colonizers. This paper shows that in economically lagging countries major structural reforms could be driven by internal economic transformations. Why such internally driven reforms took place in some parts of the world and not others is a question that merits systematic investigation. The answer could yield insights into why some economic laggards, including not only Turkey but also Iran and Japan, escaped colonization altogether.

That the Gülhane Edict and the transformations that preceded it involved domestic constituencies and choices does not mean that foreign actors played no roles. By strengthening the property rights of Christian minorities, treaty-based protections extended by European powers contributed to the explosion of Istanbul's indigenous securities market. It was instrumental in altering the sectarian wealth distribution and, ultimately, in inducing a broad demand for general property rights. The paper's general lesson is not, then, that the trajectories of the laggards can be studied without reference to the West. Rather, it is that the West's effects took forms dramatically different from the narrative that dominates the analytic literature on colonization. Certain huge transformations were among the unintended consequences of measures that outside powers took solely to promote their own political agendas.

The broad analytic literature on the trajectories of laggards has started to appreciate the roles that religion played in holding back certain regions and in the reforms triggered by their deficiencies. We have broadened the discussion here by identifying additional harms that the Islamic waqf caused in places governed under Islamic law, particularly to Muslims. Low fiscal capacity is among the characteristics attributed to early modern Middle Eastern states. As Karaman and Pamuk (2010) observe, it compromised the Ottoman ability to conduct reforms. Islamic law contributed to this handicap by exempting from taxation waqfs, which wealthy Ottomans were incentivized to found because of the Sultan's proclivity to expropriate. This paper shows, further, that the emergence of a profitable investment instrument outside Islamic law, the *gedik*, is what ended the waqf's self-sustaining centrality in the Ottoman economy. It led the sultan to commit credibly to respecting private property rights. Two basic changes made the difference: wealth redistribution in favor of Christians, and the demonstration of how general property rights, as opposed to special economic rights for elites, could raise fiscal capacity. The waqf's loss of economic weight boosted also the ability to pursue reforms. Unlike waqf founders and caretakers, *gedik* owners were not barred from campaigning for institutional reforms.

If religious institutions were fixed, their analytic roles would be limited. Through the works of McCleary and Barro (2019), Johnson and Koyama (2019), Cantoni, Dittmar, and Yuchtman (2018), and others, we know, though, that they do get reinterpreted. The conditions under which interpretations of the sacred change merit much more investigation. This paper suggests that massive evidence of harm to the religion's adherents may be among the pre-conditions of reinterpretation. Another pre-condition may be economic losses on the part of the

religious authorities in charge of explicating scripture and its derivatives. Their ability to resist change is related directly to their own economic power.

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Appendix A: Long-run investment shares in a sample that includes estate cases

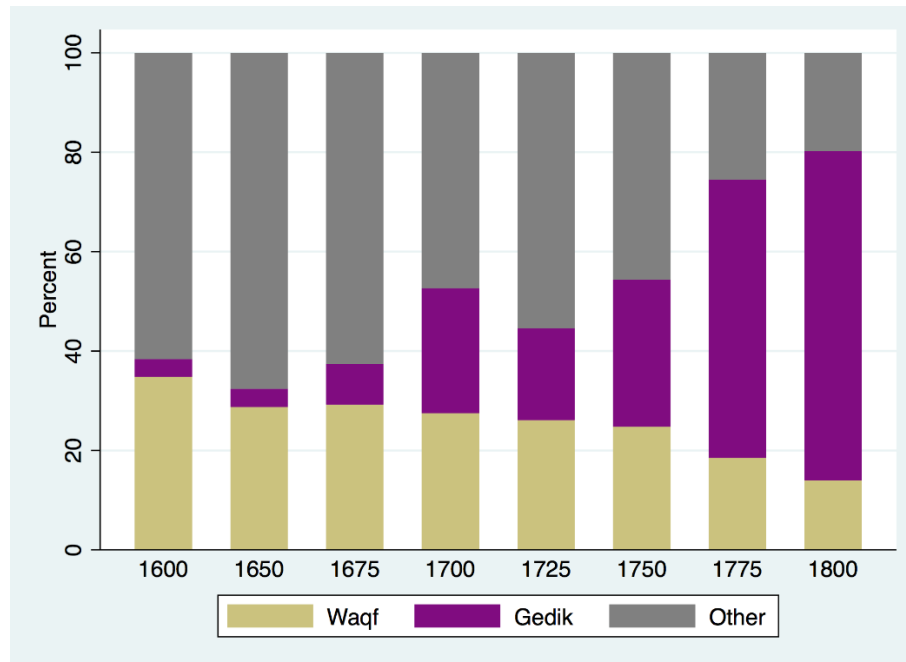


Fig. A1. Shares of cases involving long-run investments in Istanbul's court registers, including those found in estates, 1600-1824. The "other" category includes partnerships and credit transactions. Each bar represents a 25-year time span beginning with the started year, except 50 years for the first. For the list of 42 registers in the sample, see notes 32-34.

Appendix B: Model of investment choice

Imagine that each of N investors, indexed by i , plays a one-shot game against the state. Each investor has three characteristics: wealth $z_i > 0$, the apportionment of this wealth between immovable and liquid assets $\alpha_i \in [0, 1]$, and private property rights $\beta_i \in [0, 1]$. When $\beta_i = 0$, the investor has no material security at all; at the other extreme, when $\beta_i = 1$, the investor's private property is fully secure. When $\alpha_i = 0$, the investor's wealth is entirely in immovables; at the other extreme, when $\alpha_i = 1$, the investor's wealth is fully liquid. The tax that the state imposes on taxable wealth depends on its fiscal capacity $f \in [0, 1]$, which we treat as exogenous. This parameter captures the state's ability to locate wealth; this ability cannot be improved quickly (Scott 1998). The state's tax revenue is given by the function $t(f) = 1 - (1 - f)^2$. According to this function, tax revenue increases with fiscal capacity. As a practical matter, the f values of empirical interest are ones away from the extremes. The Ottoman state was neither powerless, nor unconstrained. Hence, the tax rate will be positive, yet under 100 percent.

Suppose that our investor has a choice between investing in the gedik market (g), where the return is r_g , in a classic waqf (w), which delivers r_w , or in a cash waqf, which returns r_m . Remember that whereas Muslims were free to establish waqfs, non-Muslims needed special permission. The permission must have required a quid pro quo. This sectarian asymmetry may be captured by positing a cost of registering a waqf, c_i . This cost is zero if i is Muslim, positive otherwise. Another relevant cost is the state's cost of expropriating a waqf, c_w . This cost reflects the risk of alienating the clerics on whom the state depended for legitimation; as we shall see, clerics were capable of fomenting unrest.

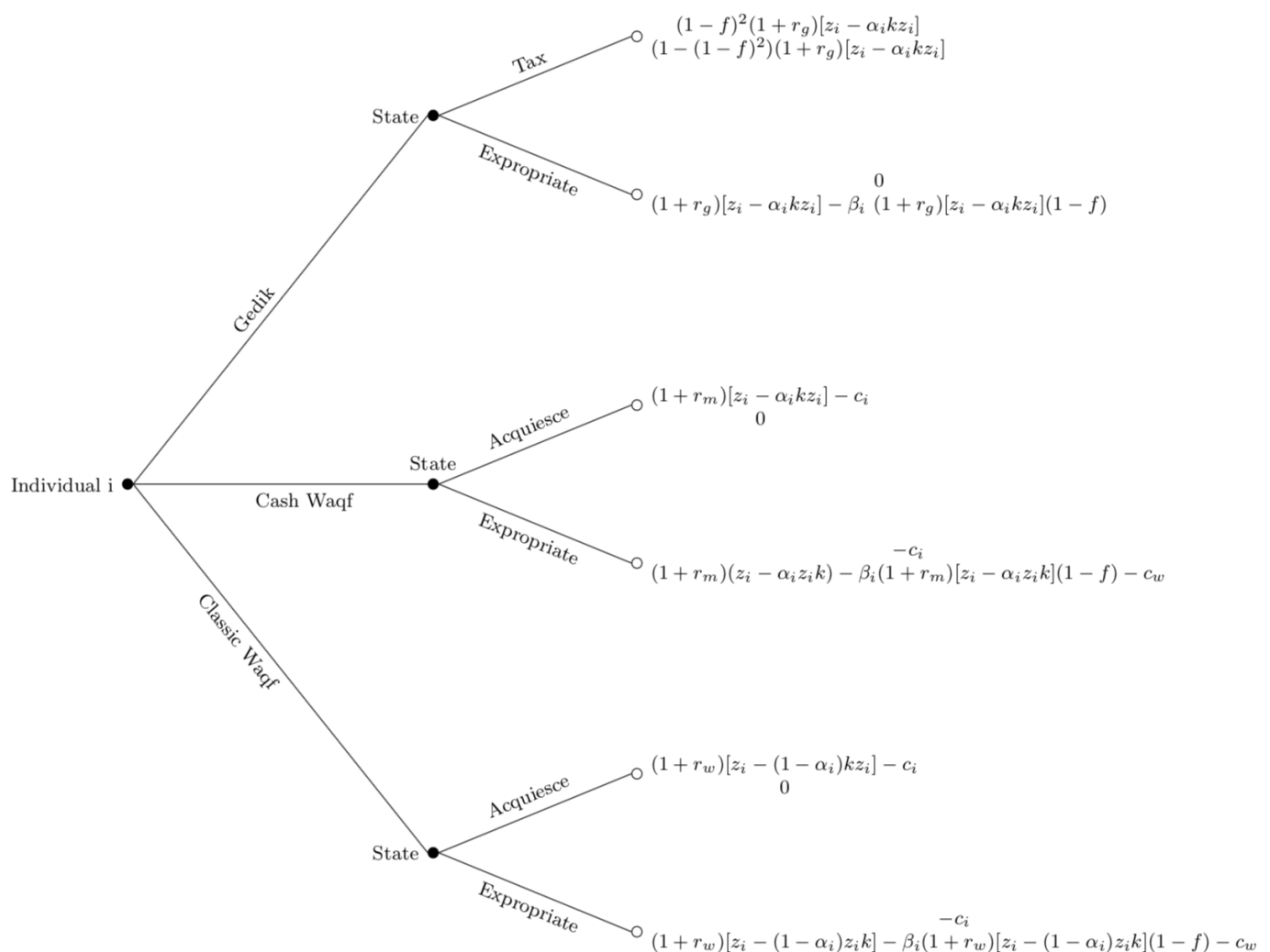


Fig. A2. The investment game between the state and investor. In each pair of payoffs, the top one belongs to the individual and the bottom one to the state.

The game consists of three stages, as shown in extensive form in Fig. A2. It begins with a move by nature, which selects $z_i, \beta_i, \alpha_i, f, c_i, k$, and c_w . The investor and the state both observe these parameters. The investor moves next, deciding whether to endow a classic waqf, a cash waqf, or invest in a gedik.

Only the immovables among an investor's assets ($z_i \alpha_i$) can be invested in a classical waqf; likewise, only liquid assets ($z_i(1-\alpha_i)$) can be invested in a gedik or cash waqf. Liquid assets can be converted to immovables, and vice versa, at a cost, k , per unit.

Let us now consider the consequences of the three choices. If the investor endows a classic waqf, in the next stage the state can either acquiesce or expropriate. In the latter case, the state's total cost is $\beta_i(1-f)(1+r_w)[z_i - z_i(1-\alpha_i)k] - c_w$. Similarly, if the investor endows a cash waqf, in the next stage the state can either acquiesce or expropriate. In the latter case, the state's total cost is $\beta_i(1-f)(1+r_m)[z_i - z_i(\alpha_i)k] - c_w$. Observe that expropriating either type of waqf is prohibitively costly when c_w , the fixed cost of waqf expropriation, is very high. If the investor opts for a gedik, the government can either tax the investment or confiscate it. The government incurs a total cost $(1-f)\beta_i(1+r_g)[z_i - z_i(1-\alpha_i)k]$ if it expropriates investor i 's gedik. This cost is zero if i has no property rights ($\beta_i = 0$) or state capacity is at its maximum ($f = 1$); and it equals the expropriated endowment when i 's private property rights are complete ($\beta_i = 1$) and fiscal capacity is at its minimum ($f = 0$).

A subgame perfect Nash equilibrium of this game is one where gedik returns and gedik expropriation costs are both sufficiently high that the government prefers to tax gedik investments to bearing the cost of expropriation, and at least some investors prefer to invest in gediks rather than waqfs.

Proposition. A gedik market subgame equilibrium exists when the following conditions hold:

1. $f + \beta_i > 1$.
2. $r_g > \frac{1+r_w}{(1-f)^2} - \frac{c_i}{(1-f)^2[1-(1-\alpha_i)k]z_i} - 1$
3. $r_g > \frac{(1+r_m)[1-\alpha_i k]}{[1-(1-\alpha_i)k](1-f)^2} - \frac{c_i}{[1-(1-\alpha_i)k]z_i(1-f)^2} - 1$

Proof. The first condition requires that, for some i , the state's payoff from opting to tax gediks exceeds its payoff from expropriating them.

$$\begin{aligned}
(1 - (1 - f)^2)(1 + r_g)z_i &> (1 + r_g)z_i - \beta_i(1 + r_g)z_i(1 - f) \\
(1 - (1 - f)^2)z_i &> z_i - \beta_i z_i(1 - f) \\
(1 - (1 - f)^2) &> 1 - \beta_i(1 - f) \\
(-(1 - f)^2) &> -\beta_i(1 - f) \\
f + \beta_i &> 1
\end{aligned}$$

The second condition requires that, for some i , the payoff from investing in an un-confiscated gedik exceeds the payoff from investing in an un-confiscated classic waqf.

$$\begin{aligned}
(1 - f)^2(1 + r_g)[1 - (1 - \alpha_i)k]z_i &> (1 + r_w)[1 - (1 - \alpha_i)k]z_i - c_i \\
(1 - f)^2(1 + r_g) &> (1 + r_w) - \frac{c_i}{[1 - (1 - \alpha_i)k]z_i} \\
(1 + r_g) &> \frac{1}{(1 - f)^2} \left((1 + r_w) - \frac{c_i}{(1 - f)^2[1 - (1 - \alpha_i)k]z_i} \right) \\
(1 + r_g) &> \frac{1}{(1 - f)^2} \left((1 + r_w) - \frac{c_i}{(1 - f)^2[1 - (1 - \alpha_i)k]z_i} \right) - 1
\end{aligned}$$

Finally, the third condition requires that, for some i , the payoff from investing in an un-confiscated gedik exceeds the payoff from investing in an unconfiscated cash waqf.

$$\begin{aligned}
(1 - f)^2(1 + r_g)[1 - (1 - \alpha_i)k]z_i &> (1 + r_m)[1 - \alpha_i k]z_i - c_i \\
(1 - f)^2(1 + r_g) &> \frac{(1 + r_m)[1 - \alpha_i k]z_i}{[1 - (1 - \alpha_i)k]z_i} - \frac{c_i}{[1 - (1 - \alpha_i)k]z_i} \\
(1 - f)^2(1 + r_g) &> \frac{(1 + r_m)[1 - \alpha_i k]}{[1 - (1 - \alpha_i)k]} - \frac{c_i}{[1 - (1 - \alpha_i)k]z_i} \\
(1 + r_g) &> \frac{(1 + r_m)[1 - \alpha_i k]}{[1 - (1 - \alpha_i)k](1 - f)^2} - \frac{c_i}{[1 - (1 - \alpha_i)k]z_i(1 - f)^2} \\
r_g &> \frac{(1 + r_m)[1 - \alpha_i k]}{[1 - (1 - \alpha_i)k](1 - f)^2} - \frac{c_i}{[1 - (1 - \alpha_i)k]z_i(1 - f)^2} - 1
\end{aligned}$$

The first of the three conditions holds when the state's payoff from taxing individual i 's gedik investments exceeds its payoffs from expropriating the gediks. The second holds when for individual i , the payoff from investing in taxed gediks exceeds that of investing in an un-confiscated classic waqf. The third holds when the payoff from investing in taxed gediks exceeds that of endowing an unconfiscated cash waqf.

Having shown how state capacity, composition of personal endowments, and property rights both affect investment decisions, we can perform comparative statics to illuminate how changes in parameters of interest affect the equilibrium. Three of these lead to the hypotheses of in section 4.

Define l , m , and n as follows:

$$l = f + \beta_i > 1;$$

$$m = \frac{1+r_w}{(1-f)^2} - \frac{c_i}{(1-f)^2[1-(1-\alpha_i)k]z_i} - 1;$$

$$n = \frac{(1+r_m)[1-\alpha_i k]}{[1-(1-\alpha_i)k](1-f)^2} - \frac{c_i}{[1-(1-\alpha_i)k]z_i(1-f)^2} - 1.$$

The following comparative statics lead to hypotheses 1, 2, and 3, respectively.

$$1) \frac{\partial m}{\partial c_i} = - \frac{1}{(1-f)^2[1-(1-\alpha_i)k]z_i} < 0, \frac{\partial n}{\partial c_i} = - \frac{1}{[1-(1-\alpha_i)k]z_i(1-f)^2} < 0.$$

The second and third conditions of the proposition require r_g to exceed both m and n . As c_i increases, both m and n fall, making it more likely that r_g will exceed them. The signs of these two derivatives thus show that, for a given value of the state's fiscal capacity, f , as the cost of endowing a waqf increases, an investor is more like to invest in a gedik over, respectively, a classical waqf and a cash waqf.

$$2) \frac{\partial l}{\partial \beta_i} = 1 > 0.$$

The first condition of the proposition requires l to exceed 1. When this condition holds, the state prefers to people invest in gediks and tax their gains than to expropriate them. This becomes more likely as β_i increases. Thus, as the private property rights of the investor strengthen, for a given value of the state's fiscal capacity, f , that individual becomes more likely to invest in a gedik over endowing either a cash or a classical waqf.

$$3) \frac{\partial m}{\partial \alpha_i} = \frac{c_i k}{(1-f)^2[1-(1-\alpha_i)k]^2 z_i} > 0.$$

The second condition of the proposition is satisfied when r_g exceeds m . By causing m to rise, an increase in α_i makes that less likely, which then reduces the incentives to invest in a gedik. In other words, as the proportion of the immovable assets in an investor's wealth increases, for a given value of the return from investing in a gedik, r_g , that person becomes less likely to invest in a gedik over a cash waqf.

Appendix C: Average prices using inflation-adjusted silver



Fig. A3. Average cash waqf capital and average gedik transaction, 1725-1824, measured in inflation-adjusted grams of silver. Computed from information in Aydın et al. (2015) and the 42 court registers listed in notes 32-34. It displays the same trends as Fig. 6, except that the drop in the average cash endowment is even sharper.

Appendix D: Robustness checks for investment probabilities

Table A1. Probabilities of investing in a classic waqf or gedik over a cash waqf: Istanbul's investor groups, 1750-1824 (adjudications omitted)

VARIABLES	(5) Classic waqf	(5) Gedik	(6) Classic waqf	(6) Gedik	(7) Classic waqf	(7) Gedik	(8) Classic waqf	(8) Gedik
Muslim political elite	0.45*** (0.10)	-0.92* (0.56)	0.42*** (0.06)	-0.99* (0.57)	0.52*** (0.09)	-1.41*** (0.34)	0.39*** (0.10)	-1.44*** (0.32)
Muslim economic elite	0.09 (0.33)	0.03 (0.55)	0.06 (0.38)	0.09 (0.54)	0.11 (0.34)	-0.05 (0.66)	0.08 (0.36)	-0.01 (0.63)
Muslim military	-1.21*** (0.11)	0.27*** (0.09)	-1.09*** (0.15)	0.10*** (0.01)	-1.19*** (0.11)	0.21 (0.15)	-1.08*** (0.17)	0.15 (0.10)
Non-Muslim	-2.16** (1.06)	2.68*** (0.78)	-2.03* (1.04)	2.56*** (0.83)	-2.13** (1.04)	2.66*** (0.96)	-2.11** (1.06)	2.66*** (0.97)
1775-99			-0.71*** (0.26)	1.66* (1.00)			-0.74*** (0.25)	0.86 (0.84)
1800-24			-1.11*** (0.09)	2.33*** (0.53)			-1.24*** (0.21)	1.06 (1.13)
Bab court					0.56*** (0.03)	-3.34*** (0.11)	-0.09 (0.11)	-2.93*** (0.43)
Galata court					0.57*** (0.03)	-1.16*** (0.01)	0.18*** (0.03)	-1.01*** (0.14)
Constant	0.07*** (0.01)	1.36 (0.83)	0.57*** (0.07)	-0.36* (0.19)	-0.41*** (0.13)	2.48*** (0.18)	0.60*** (0.12)	1.52* (0.89)
Observations	1971	1971	1971	1971	1971	1971	1971	1971
Pseudo R-squared	0.18	0.18	0.29	0.29	0.33	0.33	0.36	0.36

Reference category for dependent variable: investing in classical waqfs.

Omitted investor group: Muslim commoner.

Omitted date range: 1750-74.

Omitted court: Central Istanbul.

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Data: Waqfs of the Bab, Central Istanbul, and Galata courts recorded in Aydın et al. (2015) and gedik transactions drawn from our court registers spanning 1750-1824

**Table A2. Probabilities of investing in a classic waqf or gedik over a cash waqf:
Istanbul's investor groups, 1750-1824
(all Muslim elites aggregated)**

VARIABLES	(9) Classic waqf	(9) Gedik	(10) Classic waqf	(10) Gedik	(11) Classic waqf	(11) Gedik	(12) Classic waqf	(12) Gedik
Muslim elite	-0.50*** (0.15)	-0.05 (0.24)	-0.43*** (0.14)	-0.25 (0.30)	-0.48*** (0.11)	-0.25 (0.30)	-0.43*** (0.14)	-0.29 (0.23)
Non-Muslim	-2.16** (1.08)	2.60*** (0.81)	-2.06** (1.05)	2.55*** (0.98)	-2.13** (1.06)	2.55*** (0.98)	-2.14** (1.07)	2.57*** (1.00)
1775-99			-0.71** (0.28)				-0.77*** (0.24)	0.85 (0.79)
1800-24			-1.18*** (0.12)				-1.35*** (0.23)	1.09 (1.10)
Bab court				-3.28*** (0.07)	0.46*** (0.04)	-3.28*** (0.07)	-0.21 (0.14)	-2.85*** (0.44)
Galata court				-1.14*** (0.03)	0.56*** (0.03)	-1.14*** (0.03)	0.19*** (0.03)	-0.98*** (0.15)
Constant	0.10*** (0.02)	1.44* (0.85)	0.61*** (0.07)	2.58*** (0.23)	-0.33** (0.15)	2.58*** (0.23)	0.71*** (0.19)	1.60* (0.91)
Observations	1989	1989	1989	1989	1989	1989	1989	1989
Pseudo R-squared	0.16	0.16	0.27	0.27	0.30	0.30	0.34	0.34

Reference category for dependent variable: investing in classical waqfs.

Omitted investor group: Muslim commoner.

Omitted date range: 1750-74.

Omitted court: Central Istanbul.

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Data: Waqfs of the Bab, Central Istanbul, and Galata courts recorded in Aydın et al. (2015) and gedik transactions drawn from our court registers spanning 1750-1824.

**Table A3. Probabilities of investing in a classic waqf or gedik over a cash waqf:
Istanbul's investor groups, 1750-1824
(Muslim investors disaggregated further)**

VARIABLES	(13) Classic waqf	(13) Gedik	(14) Classic waqf	(14) Gedik	(15) Classic waqf	(15) Gedik	(16) Classic waqf	(16) Gedik
Pasha	20.09*** (0.95)	0.76 (0.82)	22.00*** (0.98)	2.53*** (0.15)	22.41*** (1.00)	2.81*** (0.86)	17.28*** (0.97)	3.01*** (0.19)
Efendi	0.22 (0.17)	-0.89 (0.55)	0.25 (0.20)	-1.01* (0.53)	0.30** (0.14)	-1.49*** (0.29)	0.20 (0.27)	-1.52*** (0.27)
Beşe	0.07 (1.75)	2.09** (0.90)	-0.00 (1.78)	2.13*** (0.83)	-0.00 (1.79)	2.34*** (0.79)	-0.02 (1.82)	2.36*** (0.74)
Ağa	-1.36*** (0.03)	-0.03 (0.12)	-1.23*** (0.05)	-0.26 (0.20)	-1.33*** (0.06)	-0.24*** (0.07)	-1.22*** (0.07)	-0.32 (0.22)
Çelebi	0.44 (0.43)	0.18 (0.52)	0.19 (0.28)	0.89 (0.71)	0.43 (0.44)	0.76*** (0.19)	0.23 (0.31)	1.06* (0.60)
Bey	-0.50 (0.83)	-2.06** (0.84)	-0.43 (0.77)	-2.31*** (0.78)	-0.21 (0.81)	-3.12*** (0.32)	-0.40 (0.76)	-3.11*** (0.25)
Titled woman	0.16 (0.35)	0.30 (0.49)	0.27 (0.35)	0.18 (0.49)4	0.21 (0.38)	0.12 (0.49)	0.32 (0.33)	0.06 (0.45)
Non-Muslim	-2.15** (1.06)	2.66*** (0.77)	-2.06** (1.04)	2.55*** (0.83)	-2.14** (1.05)	2.64*** (0.94)	-2.14** (1.06)	2.65*** (0.96)
1775-99			-0.66*** (0.26)	1.69* (1.00)			-0.71*** (0.24)	0.87 (0.81)
1800-24			-1.03*** (0.12)	2.44*** (0.57)			-1.21*** (0.22)	1.14 (1.18)
Bab court					0.42*** (0.05)	-3.51*** (0.14)	-0.19** (0.09)	-3.08*** (0.41)
Galata court					0.45*** (0.06)	-1.36*** (0.04)	0.09 (0.06)	-1.21*** (0.12)
Constant	0.07*** (0.02)	1.38* (0.82)	0.53*** (0.05)	-0.39*** (0.15)	-0.31*** (0.10)	2.64*** (0.10)	0.65*** (0.12)	1.64* (0.90)
Observations	1989	1989	1989	1989	1989	1989	1989	1989
Pseudo R-squared	0.20	0.20	0.30	0.30	0.34	0.34	0.37	0.37

Reference category for dependent variable: investing in classical waqfs.

Omitted investor group: Muslim commoner.

Omitted date range: 1750-74.

Omitted court: Central Istanbul.

Robust standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Data: Waqfs of the Bab, Central Istanbul, and Galata courts recorded in Aydın et al. (2015) and gedik transactions drawn from our court registers spanning 1750-1824

The main takeaway here is that among Muslim elites, pashas were overwhelmingly more likely than other groups to continue investing in classic waqfs, doubtless because they were especially prone to expropriation and held the most real estate. Interestingly, they were more likely also to invest in gediks over cash waqfs. In all likelihood, a wealth effect was at play here. Portfolio optimizing investors typically place some share of their wealth in very risky but highly profitable ventures.

Appendix E: Robustness checks for cash waqf sizes by group

**Table A4. Wealth invested in cash waqfs by Istanbul's investor groups, 1600-1850
(Muslim elites disaggregated further)**

VARIABLES	(5) log real endowment	(6) log real endowment	(7) log real endowment	(8) log real endowment
Paşa	1.03*** (0.28)	1.20*** (0.27)	0.91*** (0.25)	1.02*** (0.27)
Efendi	0.33 (0.22)	0.57*** (0.18)	0.41*** (0.11)	0.45*** (0.12)
Beşe	-1.11*** (0.39)	-1.36*** (0.41)	-0.87*** (0.26)	-1.08*** (0.29)
Ağa	0.24* (0.13)	0.35*** (0.10)	0.23** (0.09)	0.25** (0.10)
Çelebi	-0.22 (0.29)	-0.65** (0.28)	-0.15 (0.35)	-0.46 (0.33)
Bey	0.26 (0.16)	0.47*** (0.15)	0.23 (0.17)	0.34* (0.18)
Muslim titled woman	-0.01 (0.17)	0.20 (0.14)	0.02 (0.06)	0.03 (0.09)
Non-Muslim	0.57 (0.40)	1.11*** (0.29)	0.67** (0.30)	1.17*** (0.13)
1625-49		-0.82*** (0.24)		-0.53* (0.26)
1650-74		-0.80*** (0.26)		-0.50* (0.27)
1675-99		-0.52 (0.35)		-0.34 (0.32)
1700-1724		-0.12 (0.31)		0.08 (0.31)
1725-49		-0.26 (0.21)		-0.04 (0.22)
1750-74		-0.28 (0.28)		-0.06 (0.28)
1775-99		-0.60* (0.34)		-0.45* (0.25)
1800-1824		-1.36*** (0.25)		-1.05*** (0.20)
1825-1849		-1.81*** (0.27)		-1.69*** (0.24)
Court fixed effects	No	No	Yes	Yes
Constant	8.30*** (0.18)	9.17*** (0.30)	8.47*** (0.06)	9.36*** (0.23)
Observations	2236	2236	2236	2236
R ²	0.02	0.18	0.13	0.27

Omitted investor group: Muslim commoner.

Omitted date range: 1600-24.

Omitted court: Central Istanbul

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Data: Cash waqfs recorded in Aydın et al. (2015)

**Table A5. Wealth invested in cash waqfs by Istanbul's investor groups, 1600-1850
(all Muslim elites aggregated)**

VARIABLES	(9) log real endowment	(10) log real endowment	(11) log real endowment	(12) log real endowment
Muslim elite	0.19 (0.12)	0.30*** (0.09)	0.19*** (0.06)	0.19** (0.07)
Non-Muslim	0.57 (0.39)	1.07*** (0.28)	0.69** (0.30)	1.15*** (0.13)
1625-49		-0.83*** (0.23)		-0.54** (0.25)
1650-74		-0.84*** (0.25)		-0.52* (0.27)
1675-99		-0.60 (0.36)		-0.36 (0.33)
1700-1724		-0.13 (0.30)		0.10 (0.31)
1725-49		-0.24 (0.21)		0.00 (0.23)
1750-74		-0.25 (0.29)		-0.02 (0.28)
1775-99		-0.55 (0.34)		-0.39 (0.25)
1800-1824		-1.29*** (0.26)		-0.98*** (0.20)
1825-1849		-1.74*** (0.28)		-1.63*** (0.25)
Court fixed effects	No	No	Yes	Yes
Constant	8.29*** (0.18)	9.14*** (0.30)	8.45*** (0.06)	9.31*** (0.22)
Observations	2236	2236	2236	2236
R ²	0.01	0.15	0.13	0.25

Omitted investor group: Muslim commoner.
Omitted date range: 1600-24.
Omitted court: Central Istanbul
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Data: Cash waqfs recorded in Aydın et al. (2015)