Direct and indirect rule in the early Ottoman Empire: Evidence from the Sancak of Arnavıd?[*]

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Abstract

Empires have been the norm for much human history. Many empires ruled over indigenous populations using violence, while others ruled peacefully by cooperating with local elites. The article answers why empires collaborate with local elites and how. I provide an elite-based explanation and argue that in order to ensure durability of rule, the imperial center needs to make concessions and rent-sharing arrangements to local elites. I use quantitative evidence from an Ottoman fiscal register from the mid 15th century about the province of Arnavıd (part of modern-day Albania). I show that the sultan makes more concessions and rent-sharing to locals whose preferences are in tandem with his. Specifically, local elites who converted to Islam have higher income from taxes collected and more villages assigned to them. In contradistinction, local elites who come from old noble families whose preferences are far from the sultan's, have fewer concessions and less rent. These findings have implications for the way we understand imperial rule and for the power trade-off that occurs between ruler and the ruled.

Thank you for taking the time to read this piece. I would like this to be a stand-alone article that can be submitted to a journal. Due to conventions within political science, I cannot include details about the manuscripts (e.g. facsimiles, transliteration and translation) used in this paper or about the historical cartography (how the map of Europe and of the province of Arnavıd were made), but I strongly encourage you to read the sections on cartography and facsimiles and translation in the appendix. Apologies for the Ottoman jargon in the empirical section. I tried to explain every word in the text. In addition I added a one-page glossary to the appendix of this article for your convenience. Please do not cite or circulate.

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1 Introduction

Empires have been the norm for much of human history. Some have used violence to rule over indigenous populations, others have used more peaceful ways of government and tried to integrate local elites within the empire or some have used both violent and peaceful ways. The Ottoman Empire is an example of a political entity that has used both violent and peaceful ways of government[1] to rule over its various territories. The Ottoman Empire lasted for more than 600 years (1299-1923) and spanned over different continents and regions of Southeast Europe, Western Asia, the Caucasus, North Africa and the Horn of Africa (see the left picture in figure 1 (Popescu, 2017)). It also ruled over populations with different linguistic, ethnic and religious backgrounds.

A cursory examination of one of the earliest Ottoman fiscal registers reveals that land in the newly conquered province (*sancak*) of Arnavıd is possessed both by Ottoman (sent from Anatolia and other places in the Ottoman Empire) and local elites[2]. The right picture in figure 1 displays the properties (localities from which elites collects taxes) of local land owners and the properties of Ottoman land owners. 44 are local land owners and 231 are foreign land owners, sent mostly from Anatolia. All local land owners received authorization from the sultan or other Ottoman authorities to confirm their right to collect taxes from their assigned localities.

This article asks the following questions: why do empires collaborate with indigenous elites and how? In providing an answer, previous literatures (Lawrence, 2013; Mamdani, 1996) use the term "indirect rule" [3]. Such literatures propose a variety of explanations for why empires decide to govern directly or indirectly: geography (Diamond, 1997; Carneiro, 1970), transformative agendas (Gerring *et al.*, 2011), the difference between the ruler and the ruled (Oates, 1972), to just name a few. The theory proposed in this paper is compatible with literatures that suggest that empires choose strategies of imperial government that prevent the ruled from rebelling (Krasner, 1999; Mearsheimer, 2001) and with the literatures that argue that empires choose institutional arrangements that allow them to maximize their wealth (Hobson, 1965; Wallerstein, 1974). The article however goes beyond such literatures by articulating the micro-foundations that motivate empires to govern through local elites. Specifically, the article proposes a new theoretical framework that revolves around cooperation and integration within the Empire to explain two phenomena that on a first look are unrelated to imperial rule: conversions from Christianity to Islam of some local elites and the existence of elites possessing aristocratic titles and who received land-ownership confirmation from the sultan. I argue that conversion to Islam and the noble status (*kadimi*) of some local land owners are indications of local nobles' preference alignment with the preferences of the sultan. Specifically, conversion to Islam indicates that local nobles' preferences are in tandem with those of the sultan as opposed to the preferences of local nobles with old nobility

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[1] Assessing the extent to which the Ottoman Empire used violent and peaceful ways to govern is difficult. Both Ottoman sources and sources that various regions under the Ottoman Empire mention ways in which many local elites from the Balkans got to hold important positions within the Ottoman bureaucracy. At the same time, many national historical accounts from the Balkans also mention the abuses the Ottomans committed against locals.

[2] Throughout the article I am using local nobles, local elites, indigenous elites and local land owners interchangeably.

[3] Direct rule features a highly centralized decision-making, while indirect rule features a decentralized framework in which a weaker entity has important decision-making powers (Gerring *et al.*, 2011).

titles. Depending on how far local nobles' preferences are from those of the sultan, the latter makes concessionary and rent-sharing arrangements. In particular, nobles who converted to Islam receive more concessions and more rent-sharing as opposed to local elites with noble status (kadimi).

In order to substantiate the theoretical claims, I am using cross-sectional data from one of the earliest Ottoman fiscal registers (mid 15th century) from the Ottoman Archives in Istanbul, Turkey. The study of a tiny region in the Ottoman Empire allows the investigation of conditions that facilitate integration within the Empire, while holding many factors constant. By comparing local elites from a small region under the same empire, I can explore the multiple ways in which indigenous elites are incorporated within the Ottoman state. The case also allows a rich discussion of the interaction between local elites and the imperial center. The article uses historical quantitative fiscal data and cartographic material (collected from various archives and historical atlases) that I digitized[4].

Figure 1
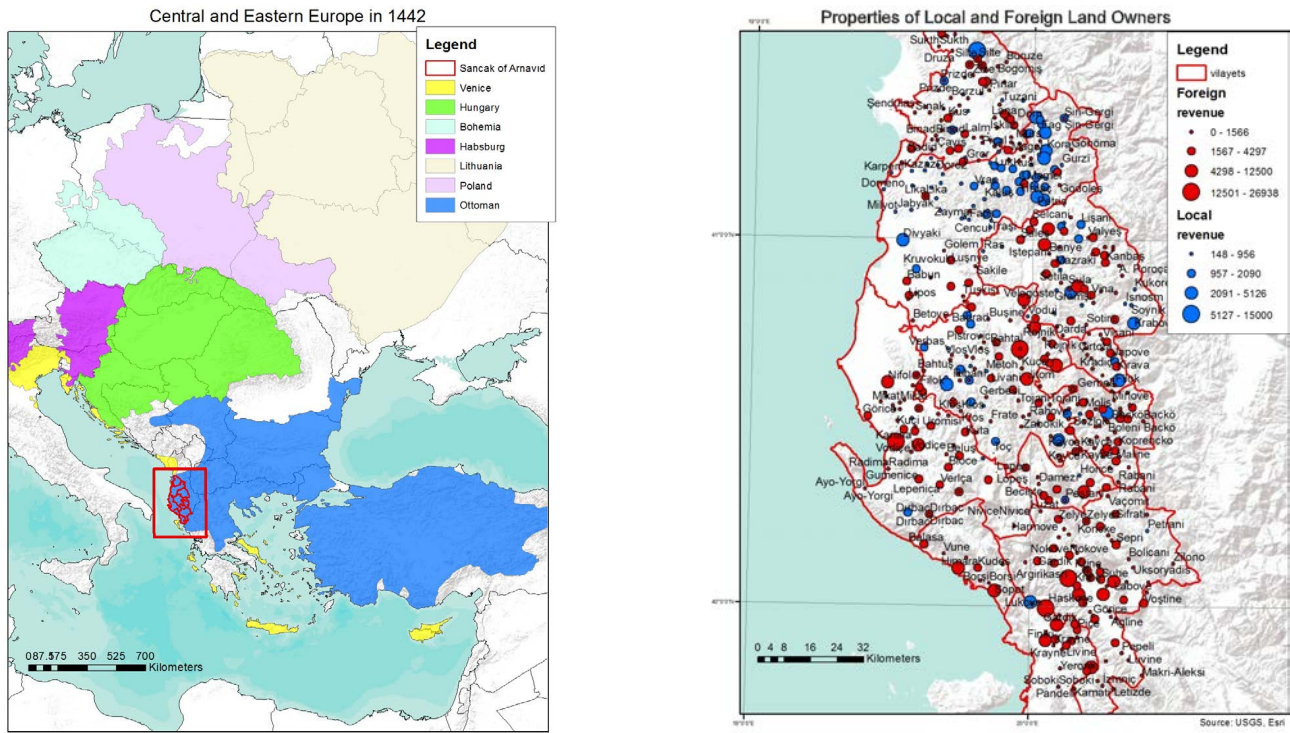
In answering the question of why the empire collaborates with local elites, I adapt a model with perfect information from the literature on non-democratic regimes (Gandhi & Przeworski, 2007) in which the imperial center needs to cooperate with the local nobles to extract rents and faces the threat of rebellion from local nobles. The rents that can be distributed to local nobles increase as more local nobles cooperate with the sultan. The sultan's need to cooperate with local nobles is affected by the

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[4] Data collection entailed two steps: (1) the transliteration, translation of the Ottoman fiscal register and the subsequent creation of a statistical database based on the manuscripts and (2) geo-locating the properties of land nobles from the province of Arnavıd using several historical maps. Check the section on facsimiles and transliteration and the section on historical cartography in the online appendix.

strength of local nobles who can initiate a rebellion against the Ottomans and the Ottomans' own ability to quell dissent. In order to convince local nobles to cooperate and hence, prevent rebellions, the sultan can share rents (by allowing nobles to collect and keep taxes) and by making concessions (more villages under one's control). The sultan makes the first move by choosing a policy position and by setting the amount of rent to be shared.

The local nobles decide whether to rebel or not. The model features three equilibria: when local nobles are weak, the sultan chooses policies that maximize his utility and shares no rents with local nobles. When local nobles are strong, the sultan shares some rent and makes concessions that are high enough to prevent local nobles from rebelling. When the sultan cannot buy off local nobles and at the same time, local nobles have little chance to defeat the Ottomans, the sultan offers few concessions and local nobles keep rebelling.

I provide evidence of the *quid pro quo* that occurs between the sultan and local authorities by examining a very rich political "ecosystem" in the province (sancak) of Arnavıd under the Ottoman Empire. I collected data on Ottoman landholders from the province using a fiscal summary register (*icmal defteri*) from mid 15th century [5]. I uncover the existence of several elements of governance that touch on mechanisms of cooperation and integration proposed in the model: the existence of religious conversion of local nobles and the respect for the tradition of kadîmîs, where nobles from ancient families are still allowed to rule. Specifically, I provide suggestive evidence that some local nobles convert to Islam in order to keep their properties. Local nobles who convert on average extract more rents from their villages. Respecting the right of ancient families to collect taxes comes at the cost of additional soldiers: kadîmîs, while they keep their old right to collect taxes, have to provide more military forces to the Ottoman army.

The article does not reject the utility of the direct/indirect rule conceptual framework within empire, but rather attempts to supplement it by emphasizing a more nuanced way to understand imperial rule. While direct and indirect rule can be a useful starting point, additional concepts such as rent extraction, concession, the central power's need to cooperate and the strength of local elites are helpful in understanding more nuanced modes of rule that entail religious conversions and/or protection of old customs.

Going beyond the previous research, the paper makes several contributions. First, it explains two problems that sit at the core of empires: rent extraction and avoiding rebellions. I assume that one important goal of any empire is to maximize rents which they can do if they stay in power. In order to stay in power, the central power needs to make sure that it can satisfy local elites enough in terms of rent-sharing and policy concessions to prevent them from rebelling. Second, the model permits to

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[5] This the fiscal register with the code BOA, Tapu Defterleri no. 1M (eski 1081; yeni 1081). Arvanya Sancağının has defteri. Hicri Tarih: 835 from the Hegira year 835 and that corresponds to 1432 (the Gregorian calendar) was transliterated by İnalcık (1954). The fiscal register or notebook is written in Ottoman Turkish - the official language of the Ottoman Empire. The notebooks and was started by the order of Murad II (1404-1451). This information is visible on the first page of the document and it is attached in the appendix of this paper.

explain how the central power can alternate between policy concessions and rent-sharing, as a result of the central power's need to cooperate and the strength of the indigenous elite.

Beyond the broader agenda of explaining imperial governance, the article advances historical research by demonstrating the trade-offs and constant transfer of power between the center and the periphery. The article begins with a short overview of the literature. I then outline the model with perfect information. In the empirical section I unravel the various exchanges of power between the sultan and the local nobles that could be placed on a continuum between cooptation or integration.

2   Literature Review

Much literature has already explored the consequences of various imperial institutional arrangements for different policy outcomes related to economic development and performance (Acemoğlu *et al.*, 2001; Banerjee & Iyer, 2005; Dell, 2010; Nunn, 2009).

Much of the literature has already investigated why some feudalist and imperial states were ruled directly by the center, while other were left in the hands of local rulers (Eisenstadt, 1969; Given, 1990; Herbst, 2000; Kautsky, 1982; Madden & Fieldhouse, 1985; Mann, 1993; Tilly, 1990). Similarly, other literatures have also investigated why the imperial center can sometimes incorporate a territory within the empire, while other times, it can subject that territory to informal political control (Gallagher & Robinson, 1953; Lake, 1996). Finally, some literature has tried to answer the question of why some colonies are ruled directly by imperial administrators while others are ruled by local intermediaries (Doyle, 1986; Fisher, 1991; Lange, 2004; Newbury, 2003).

A wide recent literature has already coined the direct/indirect rule dichotomy in the context of colonialism. Such literature attempted mostly to investigate European approaches to governing populations differing along racial, ethno-linguistic and religious lines, mostly referring to modern empire such as the British and the French (Mamdani, 1996). Proponents of direct rule utilized the "civilizing" rationale (stemming from De Las Casas (1992)) to justify a project in which the empire provides a model to be emulated in the conquered provinces. In contradistinction, proponents of indirect rule favored the preservation of local traditions with limited intervention from the center[6].

There is disagreement in the literature over what drives the choice of direct over indirect rule. For example, one explanation for why the center may choose a direct style of rule has to do with *geography*: greater accessibility of a territory should be associated from with a more direct style of rule. This is derived from the works of Diamond (1997); Carneiro (1970). Realist theories purport that the *power imbalance* between the ruler and the ruled can affect the style of rule (Krasner, 1999; Mearsheimer, 2001).

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[6] While the direct/indirect rule dichotomy may seem like an anachronistic imposition on something that happened over 500 years ago, certain structures of power that existed in the French and the British empire also existed in the Ottoman Empire (e.g. the monarch who attempts to conquer and rule over a new territory). In addition the Ottoman Empire has been left somehow at the periphery in the literature, when in fact the Ottoman case can be a very good case to confirm existing theories about the creation and persistence of empire and reveal finer empirical nuances that can inform new theories about the formation and persistence of empires.

The ruler's capabilities (economic, military, technological) and the possibility of the ruled to revolt can also impact the choice of the type of rule an imperial will choose: more capability on the part of the ruler - higher propensity to choose direct rule. Marxist theories argue that *pursuit of wealth*, through tax revenues or natural resources affects the choice for the type of rule that the ruler uses (Hobson, 1965; Wallerstein, 1974). Similarly, Gerring *et al.* (2011) explain how a direct type of rule can be driven by a transformative agenda. For example, the agendas of the French, Japanese, Portuguese went beyond rent extraction and attempted to transform entire cultural systems, as opposed to the British and Dutch, who were much more likely to utilize an indirect system of rule, with more modest agendas (Gerring *et al.*, 2011, p. 379). Finally, Oates (1972) argues that the difference between the ruler and the ruled can help explain when the ruler decides to implement direct or indirect rule. Specifically, the higher the difference, the less likely it is that the ruler will attempt and manage to establish successfully a system of direct rule. A system of direct rule is more likely to be established in territories that share similar cultural and political characteristics with the colonizer.

While previous literatures have contributed greatly to understanding colonialism and empire, their explanations however, have been mostly focused on *rulers* and their incentives for pursuing a particular type of colonial rule. There has been much less focus on the incentives of the *ruled* and how the actions and desires of the ruled shape back the actions and desires of the ruler. I argue that in order to have a deeper understanding of imperial practices, one needs to examine local elites. I argue that the actions of the local elites are crucial in order to understand a particular type of governmentally that gets instituted by the ruler. While verbal negotiations between local elites and the ruler may not necessarily happen, the interests of the local elites feed back into the calculations of the ruler, shaping the type of imperial politics enacted.

3 Model

This section outlines a model with perfect information to analyze and elucidate the interaction that occurs between the ruler and the ruled and their incentives for acting in particular ways. The model is a stylized version of reality, which is why it will not capture the finer details of imperial rule, but it is a first step in understanding the interaction between local nobles and the sultan. I use the term "sultan" or sometimes "the Ottomans" interchangeably[7].

3.1 Setup

The policy is a number $x \in [0,1]$. x^i is a quasiconcave preference for player i, where i is the sultan or the local nobles. Peak preferences are distributed according to f(x_i) over the population of a unit mass. I assume that the sultan has a different ideal point from the local nobles' ideal point: $x^S > x^N$.

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[7] For much of Ottoman history, the sultan did not make decisions all by himself. In many instances, the sultan enacted policies in consultation with the *Şeyhülislam* or the Imperial Council (*Divan-i Hümayun.*)

Intuitively, the local nobles who want to fight the sultan (or the Ottomans more generally) need to act as a coherent, unitary entity. Therefore, the local potential opposition to the sultan (the local nobles) can be characterized by:

$$x^N = F^{-1}(1/2) \tag{1}$$

The **set of nobles** who oppose the sultan can be defined as:

$$\Pi = \{x^i | x^i \leq x^N + \frac{(x^S - x^N)}{2}\} \tag{2}$$

The **gap between the sultan's ideal point and the nobles' ideal point** (polarization) can be defined as:

$$\delta \equiv x^S - x^N \tag{3}$$

The measure for the set indicating the gap between the sultan's ideal point and the nobles' ideal point is $F(x^S - \frac{1}{2}\delta) > \frac{1}{2}$. The gap between the *sultan's ideal point* and the *sultan's choice* divided by the difference between the sultan's ideal point and the local noble's ideal point defines the **political concessions** that the sultan is making towards the local nobles:

$$\zeta \equiv \frac{x^S - x^*}{x^S - x^N} = \frac{x^S - x^*}{\delta} \tag{4}$$

where x^S is the Sultan's ideal point, x^* is the Sultan's chosen point and x^N is the local nobles' ideal point. Similarly, $x^S - x^*$ represents the gap between the **sultan's ideal policy point** x^S and the **sultan's choice** x^*, while $x^S - x^N$ is the gap between the **sultan's ideal policy point** x^S and the **local nobles' ideal policy point** x^N.

I assume $0 \leq \zeta \leq 1$. If $x^S - x^* > x^S - x^N$, the sultan is implementing a policy that is far from his ideal point. Therefore, the sultan wants $x^S - x^* < x^S - x^N$. If the sultan makes a political concession $\zeta > 0$, the **Local nobles** become reduced to $F[x^S - \frac{1}{2}\delta(1+\zeta)]$, which means that a **proportion** $F(\zeta\frac{\delta}{2})$ is **induced to cooperate with the sultan**. $\zeta = 0$ (no policy concession) if the sultan chooses his preferred policy: $x^S = x^*$

3.2 Parameters

Rents or taxes (s) are produced from tax farming by the sultan or in cooperation with local nobles $(0 \leq s \leq 1)$. Cooperation between the sultan and the local nobles happens when the sultan makes policy concessions. Rents therefore increase with the level of cooperation: $\frac{dR}{d\zeta} > 0$. The sultan's need to cooperate with the local nobles depends on his ability to collect taxes using his own men (sent from Anatolia). If the sultan's men are able to collect taxes themselves, the sultan *needs* little cooperation to secure rents $\beta = 0$. Rents are produced according to:

$$R(\zeta) = \zeta^\beta \tag{5}$$

where $0 < \beta < 1$.

The sultan (S) and the nobles (N) have linearly separable utility functions:

$$U^i(R^i, x) = v(R^i) + u^i(x) \tag{6}$$

where $i \in \{S, N\}$. The R^i represents the tax share that accumulates either for the sultan or for the nobles.

I assume that the loss from the policy distance is quadratic, which is why the function $u^i(x)$ can be represented as:

$$u^i \equiv u(x^i, x) = -(x^i - x)^2 \tag{7}$$

Rents can be divided between the sultan and the local nobles. The local nobles keep share of rent s, while the sultan gets $1 - s$. Similarly, the function $v(R)$ is just R.

3.3 The Sultan's utility function

Equations 4, 5, 6 and 7 allow us to formulate the sultan's utility function as:

$$U^S = (1-s)\zeta^\beta - (x^S - x^*)^2 \iff U^S = (1-s)\zeta^\beta - (\delta\zeta)^2 \quad {}^8 \tag{8}$$

In order to know how the sultan's utility change with respect policy concessions, I take the first derivative with respect to policy concessions:

$$\frac{\partial U^S}{\partial \zeta} = \beta(1-s)\zeta^{\beta-1} - 2\delta^2\zeta \tag{9}$$

This is positive when ζ is low and negative, when ζ is high. Intuitively, the sultan gains when he makes few concessions and loses when he has to make many concessions. He offers concessions to local nobles when he tries to get local nobles to cooperate with him.

3.4 The Local Nobles utility function

$$U^N = s\zeta^\beta - (x - x^N)^2 \iff U^N = s\zeta^\beta - \delta^2(1-\zeta)^2 \tag{10}$$

In order to know how the local nobles' utility changes with respect policy concessions, I take the first derivative with respect to policy concessions:

$$\frac{\partial U^N}{\partial \zeta} = \beta s\zeta^{\beta-1} + 2\delta(1-\zeta) \tag{11}$$

This suggests that the local nobles always want concessions.

${}^8 U^S = (1-s)\zeta^\beta - (x^S - x^*)^2$ can be rewritten as: $U^S = (1-s)\zeta^\beta - (\frac{x^S - x^*}{\delta}\delta)^2$. This is equivalent to $U^S = (1-s)\zeta^\beta - (\zeta\delta)^2$.

I assume perfect information. The sultan's need to cooperate with the local nobles (β) and the gap between the sultan's ideal policy point (x^S) and the local nobles' ideal policy point (x^N) (abbreviated as δ) is observed by everyone.

3.5 Sequentiality

In a first instance, the sultan interacts with local nobles and makes them a specific offer of *concessions* and a share of the *taxes* collected through tax-farming: $\{\zeta, s\}$. The local nobles then decide whether they accept or reject the sultan's offer. If they reject the offer, they revolt against the Ottomans. Local nobles have strength z and have a certain probability of successfully fighting the Ottomans $p < 1$. If local nobles are successful at fighting the Ottomans, the local nobles keep their tax farming rights and hence keep all the cash and they do not have to worry about concessions. If the Ottomans defeat the local nobles, the sultan establishes a level of concession that he wants and punishes the local nobles with severity $P \leq 0$. The expected value for the local nobles for acting against the Ottomans, which can also be interpreted as the local nobles' strength, is z and can be expressed as:

$$
\begin{aligned}
z &= p[U^N(R^N, x)] \\
z &= p[v(R^N = 1) + u^N(\zeta = 1)] + (1 - p)P \\
&= p + (1 - p)P
\end{aligned}
\tag{12}
$$

Put simply, the strength of nobles is a function of two parameters: their utility from getting all the cash and implementing their ideal policy and (potential) costs associated with them losing against the Ottomans.

The sultan wants to maximize his utility function:

$$
\max_{\zeta, s} U^S(R^S, x)
\tag{13}
$$

such that:
Rents: $0 \leq s \leq 1$
Political concession: $0 \leq \zeta \leq 1$
$U^N \geq z$

This is a maximization by constraints type of problem, which is why I get:

$$
\begin{aligned}
\mathcal{L} &= U^S + \lambda[U^N - z] + \mu_0 s + \mu_1(1 - s) + \eta_0 \zeta + \eta_0(1 - \zeta) \\
\mathcal{L} &= (1 - s)\zeta^\beta - (\delta\zeta)^2 + \lambda[s\zeta^\beta - \delta^2(1 - \zeta)^2 - z] + \mu_0 s + \mu_1(1 - s) + \eta_0 \zeta + \eta_0(1 - \zeta)
\end{aligned}
\tag{14}
$$

If the conditions are violated, then the value of the Lagrangian can be reduced by setting the $\lambda = 0$ (complementary slackness condition). For the calculation of equilibria, I focus on the complementary

slackness condition.

$$\lambda[s\zeta^\beta - \delta^2(1-\zeta)^2 - z] = 0 \tag{15}$$

Equilibria

Case 1: Cooperation

$\lambda = 0$

$s\zeta^\beta - \delta^2(1-\zeta)^2 > 0$

In this situation, the sultan does not fear the local nobles and only maximizes his utility from cooperating with the local nobles. The FOC are:

$$\frac{\partial \mathcal{L}}{\partial s}\Big|_{\lambda=0} = \frac{\partial(1-s)\zeta^\beta - (\delta\zeta)^2 + \lambda[s\zeta^\beta - \delta^2(1-\zeta)^2 - z] + \mu_0 s + \mu_1(1-s) + \eta_0\zeta + \eta_0(1-\zeta)}{\partial s}$$
$$\frac{\partial \mathcal{L}}{\partial s}\Big|_{\lambda=0} = -\zeta^\beta + \mu_0 \le 0 \tag{16}$$

Similarly,

$$\frac{\partial \mathcal{L}}{\partial \zeta}\Big|_{\lambda=0} = \frac{\partial(1-s)\zeta^\beta - (\delta\zeta)^2 + \lambda[s\zeta^\beta - \delta^2(1-\zeta)^2 - z] + \mu_0 s + \mu_1(1-s) + \eta_0\zeta + \eta_1(1-\zeta)}{\partial \zeta}$$
$$\frac{\partial \mathcal{L}}{\partial \zeta}\Big|_{\lambda=0} = \beta\zeta^{\beta-1} - 2\zeta\delta^2 = 0 \tag{17}$$

This suggests that the sultan offers $s = 0$ and $\zeta_{\textbf{cpr}} = (\frac{\beta}{2\delta^2})^{\frac{1}{2-\beta}}$, which is the concession[9].

Because $s\zeta^\beta - \delta^2(1-\zeta)^2 > 0$, $\lambda[s\zeta^\beta - \delta^2(1-\zeta)^2 - z] = 0$ and $s = 0$, it has to be the case that:

$$z < -\delta^2(1-\zeta)^2 \tag{18}$$

In other words, local nobles accept the offer from the sultan if $z < -\delta^2(1-\zeta)^2$. This expression essentially means that the local nobles' expected utility from rebelling is smaller than the local nobles utility where they receive a **cooperation offer** from the sultan with 0 share of rents and concession ζ_{cpr}: $\{\zeta_{\text{cpr}}, s_{\text{cpr}} = 0\}$. Local nobles accept the sultan's offer. This the **cooperation equilibrium** in which the sultan offers no rents ($s = 0$) and offer concession concessions ζ. The local nobles do not rebel as a result of that.

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[9] This emerges from:

$$\beta\zeta^{\beta-1} - 2\zeta\delta^2 = 0$$
$$\zeta = \frac{\beta}{2\delta^2}^{\frac{1}{2-\beta}}$$

10

Case 2: Integration

$\lambda > 0$

$0 < s < 1$

$0 < \zeta < 1$

In this situation, the sultan fears the local nobles and makes concessions high enough so that he can maximize taxes that incurred from cooperating with the local nobles. The FOC are:

$$
\begin{aligned}
\left.\frac{\partial \mathcal{L}}{\partial s}\right|_{\lambda>0} &= \frac{\partial(1-s)\zeta^{\beta} - (\delta\zeta)^2 + \lambda[s\zeta^{\beta} - \delta^2(1-\zeta)^2 - z] + \mu_0 s + \mu_1(1-s) + \eta_0\zeta + \eta_1(1-\zeta)}{\partial s} \\
\left.\frac{\partial \mathcal{L}}{\partial s}\right|_{\lambda>0} &= -\zeta^{\beta} + \lambda\zeta^{\beta} = 0 \\
\lambda &= \frac{\zeta^{\beta}}{\zeta^{\beta}} \\
\lambda &= 1
\end{aligned}
\tag{19}
$$

and

$$
\begin{aligned}
\left.\frac{\partial \mathcal{L}}{\partial \zeta}\right|_{\lambda>0} &= \frac{\partial(1-s)\zeta^{\beta} - (\delta\zeta)^2 + \lambda[s\zeta^{\beta} - \delta^2(1-\zeta)^2 - z] + \mu_0 s + \mu_1(1-s) + \eta_0\zeta + \eta_1(1-\zeta)}{\partial \zeta} \\
\left.\frac{\partial \mathcal{L}}{\partial \zeta}\right|_{\lambda>0} &= \beta\zeta^{\beta-1} - 4\zeta\delta^2 + 2\delta^2 = 0
\end{aligned}
\tag{20}
$$

The implicit solution is $\zeta_{\mathbf{int}}$. This essentially means that the sultan fears rebellion and makes concessions that are at least as high as the concession that maximizes the sultan's revenue from integration: $\zeta_{\text{int}} \leq \zeta_{\text{cpr}}$. In other words, the sultan makes an **integration offer** $\{\zeta_{\text{int}}, s_{\text{int}}\}$. The fact that $\zeta_{\text{int}} \leq \zeta_{\text{cpr}}$ becomes apparent, if one compares equation 20 to equation 17, where the two cannot hold true for the same value of ζ, unless $\beta \geq 2\delta^2$ and $\zeta_{\text{cpr}} = 1$. Notice that the left-hand side increases with in ζ, which means that $\zeta_{\text{int}} \leq \zeta_{\text{cpr}}$

$$
\begin{aligned}
\left.\frac{\partial \mathcal{L}}{\partial s}\right|_{\lambda=0} &= \beta\zeta^{\beta-1} - 4\zeta\delta^2 + 2\delta^2 = 0 \\
&= \beta\zeta^{\beta-1} - 2\zeta\delta^2 = 2\delta^2(\zeta_{int} - 1) \leq 0
\end{aligned}
\tag{21}
$$

We also note that in case 2 $\lambda > 0$, which means that it has to be the case that $s\zeta^{\beta} - \delta(1-\zeta)^2 - z = 0$. From this:

$$
s_{\text{int}} = \frac{\delta^2(1-\zeta)^2 + z}{\zeta^{\beta}}
\tag{22}
$$

Because $\zeta_{\text{int}} \leq \zeta_{\text{cpr}}$ the sultan has a higher utility under cooperation as opposed to integration $(U_{\text{int}}^S < U_{\text{cpr}}^S)$. Nevertheless, if local nobles are strong enough to reject the concession offer from the

11

sultan then, the utility of the sultan from facing a revolt can be expressed in the following way:

$$
\begin{aligned}
EU^S_{\text{revolt}} &= p[v(R^S = 0) + u^S(\zeta = 1)] + (1-p)U^S_{\text{cpr}} \\
EU^S_{\text{revolt}} &= p[0 + [U^S]] + (1-p)U^S_{\text{cpr}} \\
EU^S_{\text{revolt}} &= -p\delta^2 + (1-p)(\zeta^\beta_{\text{cpr}} - \delta^2\zeta^2_{\text{cpr}})
\end{aligned}
\tag{23}
$$

The sultan makes an integration offer to the local nobles provided that the sultan's expected value from revolt (U^S_{revolt}) is at least as high as the sultan's utility from integration:

$$
U^S_{\text{int}} \geq EU^S_{\text{revolt}}
\tag{24}
$$

If I replace U^S_{int} on the left hand side with $U^S = (1-s)\zeta^{\beta-1} - (\delta\zeta)^2$, from equation 8, I get the following:

$$
(1-s)\zeta^\beta_{\text{int}} - (\delta\zeta_{\text{int}})^2 \geq -p\delta^2 + (1-p)(\zeta^\beta_{\text{cpr}} - \delta^2\zeta^2_{\text{cpr}})
\tag{25}
$$

Similarly, if I replace s with $s_{\text{int}} = \frac{\delta^2(1-\zeta)^2)+z}{\zeta^\beta}$, I obtain:

$$
\zeta^\beta_{\text{int}} - \delta^2 - \delta^2\zeta^2_{\text{int}} + 2\delta^2\zeta_{\text{int}} - z - \delta^2\zeta^2_{\text{int}} \geq -p\delta^2 + (1-p)(\zeta^\beta_{\text{cpr}} - \delta^2\zeta^2_{\text{cpr}})
\tag{26}
$$

Replacing z with $z = p + (1-p)P$ from equation 12, I get the following:

$$
\begin{aligned}
\zeta^\beta_{\text{int}} - \delta^2 - \delta^2\zeta^2_{\text{int}} + 2\delta^2\zeta_{\text{int}} - [p + (1-p)P] - \delta^2\zeta^2_{\text{int}} &\geq -p\delta^2 + \zeta^\beta_{\text{cpr}} - \delta^2\zeta^2_{\text{cpr}} - p\zeta^\beta_{\text{cpr}} + p\delta^2\zeta^2_{\text{cpr}} \\
p(U^S_{\text{cpr}} + \delta^2 - 1 + P) &\geq U^S_{\text{cpr}} + \delta^2 - [\zeta^\beta_{\text{int}} + 2\delta^2\zeta_{\text{int}}(1 - \zeta_{\text{int}})] + P
\end{aligned}
\tag{27}
$$

I make the following substitution $A = U^S_{\text{cpr}} + \delta^2 - [\zeta^\beta_{\text{int}} + 2\delta^2\zeta_{\text{int}}(1 - \zeta_{\text{int}})]$ and $B = U^S_{\text{cpr}} + \delta^2 - 1$. This means that the algebra in equation 27 can be summarized as: $(B + L)p \geq A + L$. For all possible values of the parameters, it is the case that $U^S_{\text{cpr}} + \delta^2 - 1 \geq U^S_{\text{cpr}} + \delta^2 - [\zeta^\beta_{\text{int}} + 2\delta^2\zeta_{\text{int}}(1 - \zeta_{\text{int}})]$ or $B \geq A$. However, I am also interested in what happens to the punishment parameter. I identify three possibilities:

Possibility 1: $p < 1$

$-P > B \geq A$

$-P > U^S_{\text{cpr}} + \delta^2 - 1 \geq U^S_{\text{cpr}} + \delta^2 - [\zeta^\beta_{\text{int}} + 2\delta^2\zeta_{\text{int}}(1 - \zeta_{\text{int}})]$

$$(B + P)p \geq A + P$$
$$-P \leq \frac{Bp - A}{1 - p} \tag{28}$$

Knowing $-P > B \geq A$, $-P = \frac{Bp-A}{1-p}$ makes sense only if $p < 1$.

Proposition
$$-P \geq \frac{\delta^2(1 - \zeta_{\text{int}})^2 + p}{1 - p} \tag{29}$$

Proof

Taking z from equation 12 (strength of nobles) and 18, that is, $z = p + (1 - p)P$ and $z < -\delta^2(1 - \zeta)^2$, I try to solve for P in terms of p and I end up with the following:

$$z < -\delta^2(1 - \zeta_{\text{cpr}})^2$$
$$-P \geq \frac{\delta^2(1 - \zeta_{\text{cpr}})^2 + p}{1 - p} \tag{30}$$

$\square$

This means that the sultan makes a **cooperation offer** $\{\zeta_{\text{cpr}}, s_{\text{cpr}} = 0\}$ to the local nobles and local nobles do not rebel.

Possibility 2: $p \geq 0$

$B > -P > A$

$U_{\text{cpr}}^S + \delta^2 - 1 > -P > U_{\text{cpr}}^S + \delta^2 - [\zeta_{\text{int}}^\beta + 2\delta^2\zeta_{\text{int}}(1 - \zeta_{\text{int}})$

The condition is satisfied only for $p \geq 0$

Propositon

If

$$U_{\text{cpr}}^S + \delta^2 - \frac{\zeta_{\text{int}}^\beta + 2\delta^2\zeta_{\text{int}}(1 - \zeta_{\text{int}}) - p}{(1 - p)} \leq -P < \frac{\delta^2(1 - \zeta_{\text{cpr}})^2 + p}{1 - p}$$

$$U_{\text{cpr}}^S + \delta^2 - \frac{\zeta_{\text{int}}^\beta + 2\delta^2\zeta_{\text{int}}(1 - \zeta_{\text{int}}) - p}{(1 - p)} < \frac{\delta^2(1 - \zeta_{\text{cpr}})^2 + p}{1 - p} \tag{31}$$

$$(1 - p)(\zeta_{\text{cpr}}^\beta - \delta^2\zeta_{\text{cpr}}^2 + \delta^2) - \zeta_{\text{int}}^\beta + 2\delta^2\zeta_{\text{int}}(1 - \zeta_{\text{int}}) - p < \delta^2(1 - \zeta_{\text{cpr}})^2 + p$$

13

The above relationship is true for p=0 so that I end up with the following:

$$\zeta_{\text{cpr}}^{\beta} - \delta^2 \zeta_{\text{cpr}}^2 + \delta^2 - \delta^2 (1 - \zeta_{\text{cpr}})^2 < \zeta_{\text{int}}^{\beta} - 2\delta^2 \zeta_{\text{int}} (1 - \zeta_{\text{int}}) \tag{32}$$

This can also be written as:

$$2\delta^2 [(\zeta_{\text{cpr}} - \zeta_{\text{int}})(1 - \zeta_{\text{int}} + \zeta_{\text{cpr}})] < \zeta_{\text{int}}^{\beta} - \zeta_{\text{cpr}}^{\beta} \tag{33}$$

Knowing:

$\zeta_{\text{cpr}} - \zeta_{\text{int}} \leq 0$

$1 - \zeta_{\text{cpr}} - \zeta_{\text{int}} \geq 0$

The left hand side should be smaller than the right hand side, which shows:

$$U_{\text{cpr}}^S + \delta^2 - \frac{\zeta_{\text{int}}^{\beta} + 2\delta^2 \zeta_{\text{int}} (1 - \zeta_{\text{int}}) - p}{(1 - p)} < \frac{\delta^2 (1 - \zeta_{\text{cpr}})^2 + p}{1 - p} \tag{34}$$

$\square$

In this situation, the sultan makes an **integration offer** $\{\zeta_{\text{int}}, s_{\text{int}}\}$ and the local nobles do not rebel.

Possibility 3: $p \geq \frac{A+P}{B+P}$

If

$B \geq A > -P$

$U_{\text{cpr}}^S + \delta^2 - 1 \geq U_{\text{cpr}}^S + \delta^2 - [\zeta_{\text{int}}^{\beta} + 2\delta^2 \zeta_{\text{int}} (1 - \zeta_{\text{int}})] > -P$

This condition is satisfied only for $p \geq \frac{A+P}{B+P}$.

Proposition

If

$$
\begin{aligned}
p &> \frac{A+P}{B+P} \\
p &> \frac{U_{\text{cpr}}^S + \delta^2 - [\zeta_{\text{int}}^{\beta} + 2\delta^2 \zeta_{\text{int}} (1 - \zeta_{\text{int}})] + P}{U_{\text{cpr}}^S + \delta^2 - 1 + P} \\
-P &< \frac{(U_{\text{cpr}}^S + \delta^2)(p-1)(-1)}{1-p} - \frac{\zeta_{\text{int}}^{\beta} + 2\delta^2 \zeta_{\text{int}} (1 - \zeta_{\text{int}}) - p]}{(1-p)} \\
-P &< U_{\text{cpr}}^S + \delta^2 - \frac{\zeta_{\text{int}}^{\beta} + 2\delta^2 \zeta_{\text{int}} (1 - \zeta_{\text{int}}) - p}{(1-p)}
\end{aligned}
\tag{35}
$$

14

In this situation, the sultan makes a **cooperation offer** $\{\zeta_{\text{cpr}}, s = 0\}$ to the local nobles and local nobles rebel.

Therefore the game has three equilibria that can be characterized in the p, -P space. The equilibria are depicted in figure 2
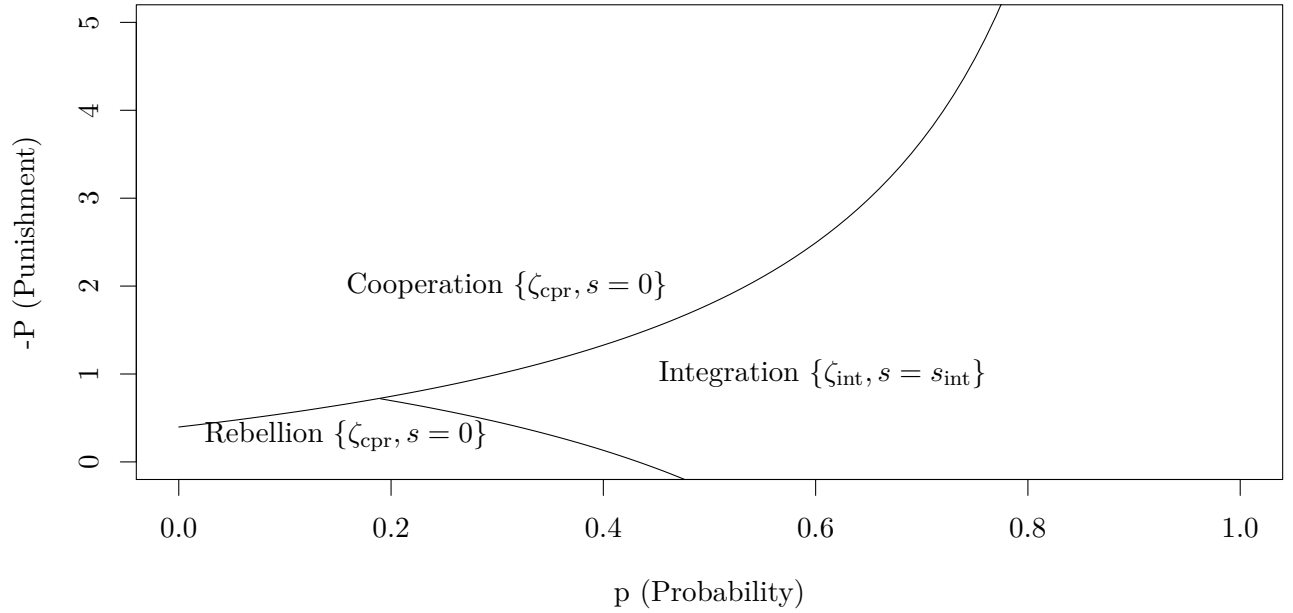

Figure 2

Therefore, the intuition is that when local nobles are weak and the probability of winning against the Ottomans is low, they will not fight the Ottomans back and hence, accept the sultan's offer. The sultan will offer concessions (ζ_{crt}) to the local nobles and no rents ($s = 0$). When the probability of winning against the Ottomans is high, the sultan will offer concessions (ζ_{int}) and part of the rent ($s = s_{\text{int}}$). Local nobles do not rebel as a result. When the local nobles have a low chance to successfully fight the Ottomans and the sultan can do little to hurt local nobles, the sultan does not offer more than cooperation and as a result of that, the local nobles rebel. In other words, when local nobles have a low chance of successfully fighting the Ottomans and when local nobles know that the sultan cannot punish them, local nobles dare to rebel against the Ottomans. The sultan does not make an integration offer whereby he would offer more concessions and some rents because these are costly to him. Similarly, local nobles rebel against the Ottomans because punishment is low and hence, have little to fear.

3.6 Comparative Statics

p and P do not affect the content of the offers. p and P however affect what type of offer that the sultan makes to the local nobles and affects the size of the rents that the sultan is willing to share under the integration equilibrium.

Comparative Statics under Cooperation

Examining the first cooperation offer, I know:

$$\zeta_{\text{cpr}} = \frac{\beta}{2\delta^2}^{\frac{1}{2-\beta}}$$

$$\frac{\partial \zeta_{\text{cpr}}}{\partial \beta} = \frac{\partial \frac{\beta}{2\delta^2}^{\frac{1}{2-\beta}}}{\partial \beta} \tag{36}$$

Concessions from the sultan increase as the need for cooperation increases. This is the case if:

$$2 - \beta(1 - \log\frac{\beta}{2\delta^2}) > 0$$

$$\delta \leq 1.16 \tag{37}$$

The fact that $\delta \leq 1.16$ is true by construction since I assumed $\delta \in [0,1]$. I also examine also how the sultan's concessions change with respect to the gap between the sultan's ideal point and the nobles' ideal point:

$$\zeta_{\text{cpr}} = \frac{\beta}{2\delta^2}^{\frac{1}{2-\beta}}$$

$$\frac{\partial \zeta_{\text{cpr}}}{\partial \delta} = (\frac{\beta}{2})^{\frac{1}{2-\beta}}(\frac{2}{\beta-2})^{\frac{2}{\delta\beta-2}-1} < 0 \tag{38}$$

The result shows that as the difference between the sultan's and the local nobles' ideal point increases, the sultan finds making concessions to the local nobles expensive. Figure 3 shows how the sultan's concessions under cooperation change as a result of the need to cooperate.

Comparative Statics under Integration

From 20, I know that following:

$$\frac{\partial \mathcal{L}}{\partial \zeta}\bigg|_{\lambda=0} = \beta\zeta^{\beta-1} - 4\zeta\delta^2 + 2\delta^2 = 0 \tag{39}$$

I am using the implicit function theorem to differentiate the function above, where $F(\beta, \delta, \zeta_{crt}) = \beta\zeta^{\beta-1} - 4\zeta\delta^2 + 2\delta^2 = 0$ and where I am interested in finding out: $\frac{\partial \zeta_{\text{int}}}{\partial \beta} = -\frac{\partial F/\partial \beta}{\partial F/\partial \zeta} = -\frac{\partial^2 \mathcal{L}/\partial \beta}{\partial^2 \mathcal{L}/\partial \zeta}$
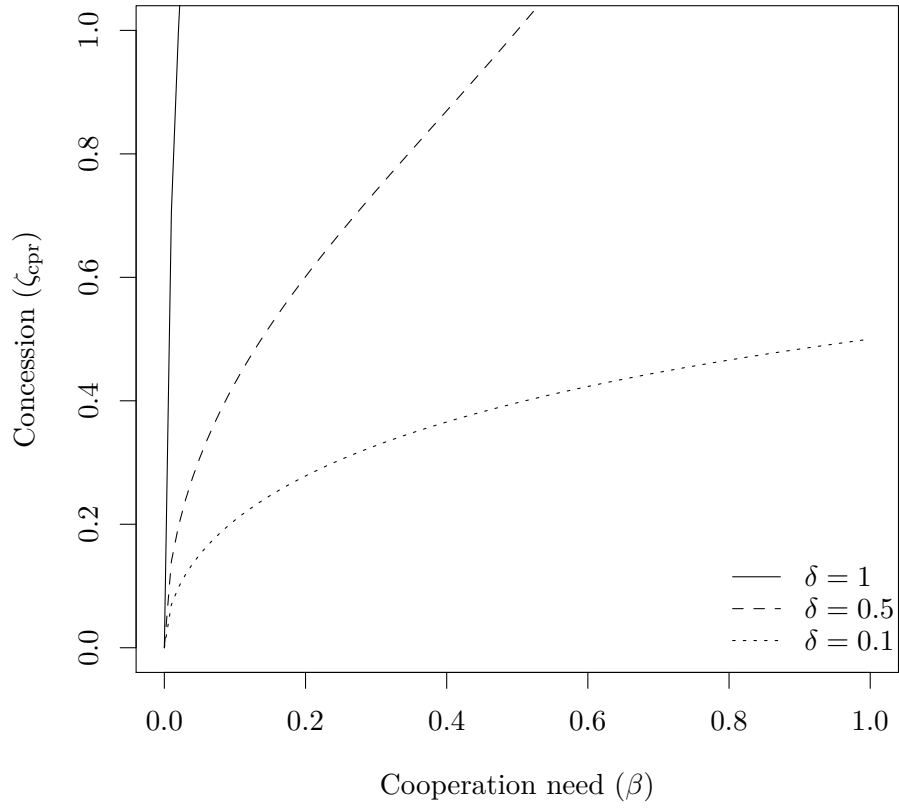
16

Figure 3: Under cooperation, as the sultan's need for cooperation increases, he makes more concessions

If I differentiate with respect to ζ, I obtain:

$$\frac{\partial^2 \mathcal{L}}{\partial \zeta} = \frac{\partial F}{\partial \zeta} = \frac{\partial^2 (\beta \zeta^{\beta-1} - 4\zeta\delta^2 + 2\delta^2)}{\partial \zeta} \qquad (40)$$
$$= \beta(\beta - 1)\zeta^{\beta-2} - 4\delta^2 < 0$$

If I differentiate with respect to β, I get the following:

$$\frac{\partial^2 \mathcal{L}}{\partial \beta} = \frac{\partial F}{\partial \beta} = \frac{\partial^2 (\beta \zeta^{\beta-1} - 4\zeta\delta^2 + 2\delta^2)}{\partial \beta} \qquad (41)$$
$$= \zeta^{\beta-1}(1 + \beta ln\zeta)$$

In order to see how an increase in the need for cooperation affects concession, I use the implicit function theorem and obtain:

$$\frac{\partial \zeta_{\text{int}}}{\partial \beta} = -\frac{\partial F/\partial \beta}{\partial F/\partial \zeta} = -\frac{\zeta^{\beta-1}(1 + \beta ln\zeta)}{\beta(\beta - 1)\zeta^{\beta-2} - 4\delta^2} > 0 \qquad (42)$$

I know that $\frac{\partial F}{\partial \zeta} > 0$. This means that concessions increase with the need for cooperation if $1+\beta ln\zeta > 0$. This is true when $\beta = 0, \zeta_{\text{cpr}}(\beta = 0) = \frac{1}{2}$ and when $\beta = 1, \zeta_{\text{cpr}}(\beta = 1) = \frac{1}{2} + \frac{1}{4\delta^2}$. While I cannot show analytically that it is true for $0 < \beta < 1$, the implicit solution displayed in figure 4 shows that this derivative is positive for the entire range. Figure 4 displays how the need for cooperation increases the level of concessions for different values of δ: $\delta = 1$ (maximum difference between the sultan's ideal point and the local nobles' ideal points) and $\delta = 0.5$. Therefore, it is indeed the case that more need for cooperation results in greater concession under the integration equilibrium as well.

Similarly, I am interested in how concessions are affected by an increase in the gap between the sultan's and the local nobles' ideal points:

$$\frac{\partial \zeta_{\text{int}}}{\partial \delta} = -\frac{\partial F/\partial \delta}{\partial F/\partial \zeta} < 0 \qquad (43)$$

I know from above that $\frac{\partial F}{\partial \delta} > 0$ and $\frac{\partial F}{\partial \zeta} = -8\zeta\delta + 4\delta < 0$, when $\zeta \geq \frac{1}{2}$, which makes the expression above negative. This indeed confirms the idea that as the difference between the sultan's and the local nobles' ideal points' (δ) increase, the sultan makes fewer concessions: $\frac{\partial \zeta_{\text{int}}}{\partial \delta} < 0$.

Looking at concessions under integration and under cooperation, the sultan overall should make more concessions whenever the authority of the Ottomans in the region is under threat.
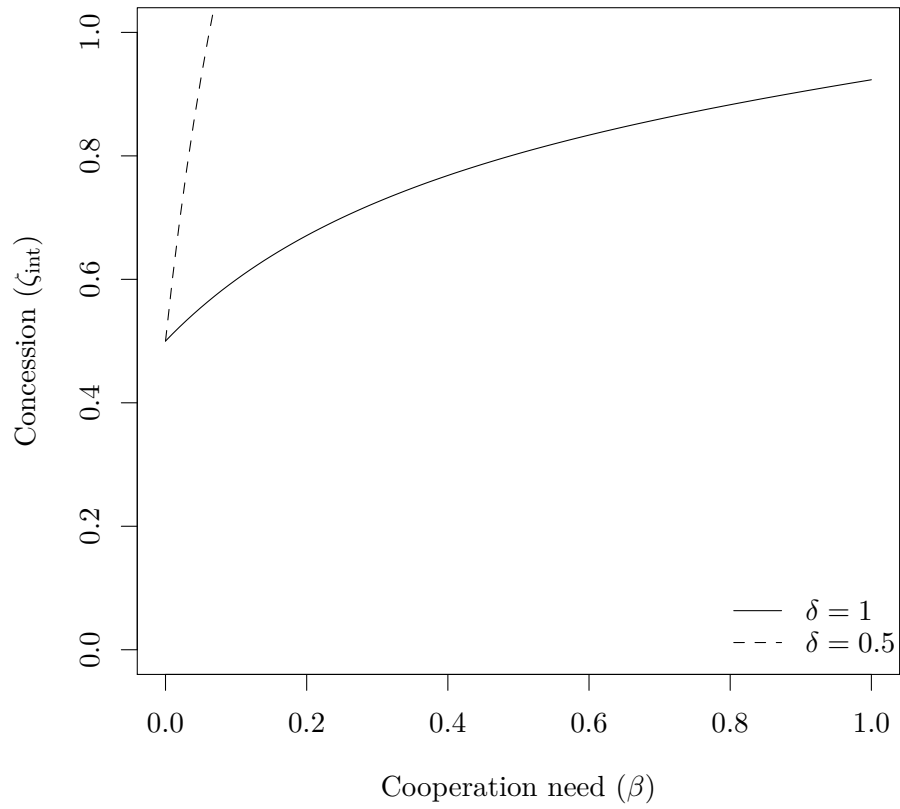
Figure 4: Under integration, as the sultan's need for cooperation increases, he makes more concessions

4 Intuition of the model

The model proposed connects the following notions: (1) the sultan's need to cooperate in order to establish Ottoman rule in a newly conquered territory, (2) the strength of the local nobles in the newly conquered territory, (3) concessions that the sultan makes to the local nobles. As shown before, the sultan is expected to make more concessions, when: the sultan needs more cooperation, the difference between the sultan and the local nobles' ideal points is lower, when local nobles are likely to succeed in beating the Ottomans and the expected punishment from a failure in defeating the Ottomans is low.

The equilibria from the model can be restated plainly in the following way. When local nobles are weak and the probability of winning against the Ottomans is low, local nobles do not fight the Ottomans and hence accept the sultan's offer of concessions and rent-sharing. The sultan offers some concessions and no rents. When the probability of winning against the Ottomans is high, the sultan offers concessions and some rent. Local nobles do not rebel. Finally, when the local nobles have a low chance to successfully fight the Ottomans and the sultan can do little to hurt local nobles, the sultan does not offer more than cooperation and as a result, the local nobles rebel.

The two pure models, cooperation and integration can be exemplified as:

- Sultan makes an **offer of cooperation**: *no rent and some concession.* Having no share of rent would mean that local nobles do not keep any share of taxes and have some concessions. This happens most frequently, when the nobles have to provide a high number of military forces to the Ottoman army, to the point where monetarily, the timar[10] position is not a lucrative position anymore.

- Sultan makes an **offer of integration**: this means that the sultan offers *some share of rent and some concessions.* This happens when nobles get to keep much of their revenue despite providing costly military aid to the Ottoman army.

4.1 Empirical Implications

The formal model allows to explain mechanisms of peaceful exchange between the imperial center and a newly conquered territory. Specifically, the model proposed allows to explain two empirical conundrums that happen at the level of local elites and that at first glance should not have any political implications. Some local nobles converted to Islam and some local nobles have nobility titles (or come from families that have ruled in the area for generations - *kadimi*). Both categories are included within the Ottoman land system (*timar* system). Their properties are displayed in figure 5.

I argue that local nobles who convert to Islam make a conscious decision to convert and be closer to the sultan's ideal point (i.e. the preferences of the local nobles who converted are much more in

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[10]A timar was land granted by the Ottoman sultans between the fourteenth and sixteenth centuries. The revenues produced from land acted as compensation for military service. Throughout the body of this article, I use timar to define both the owner of land and the land itself.

Figure 5

Properties of Converts to Islam and Elites from Old Families
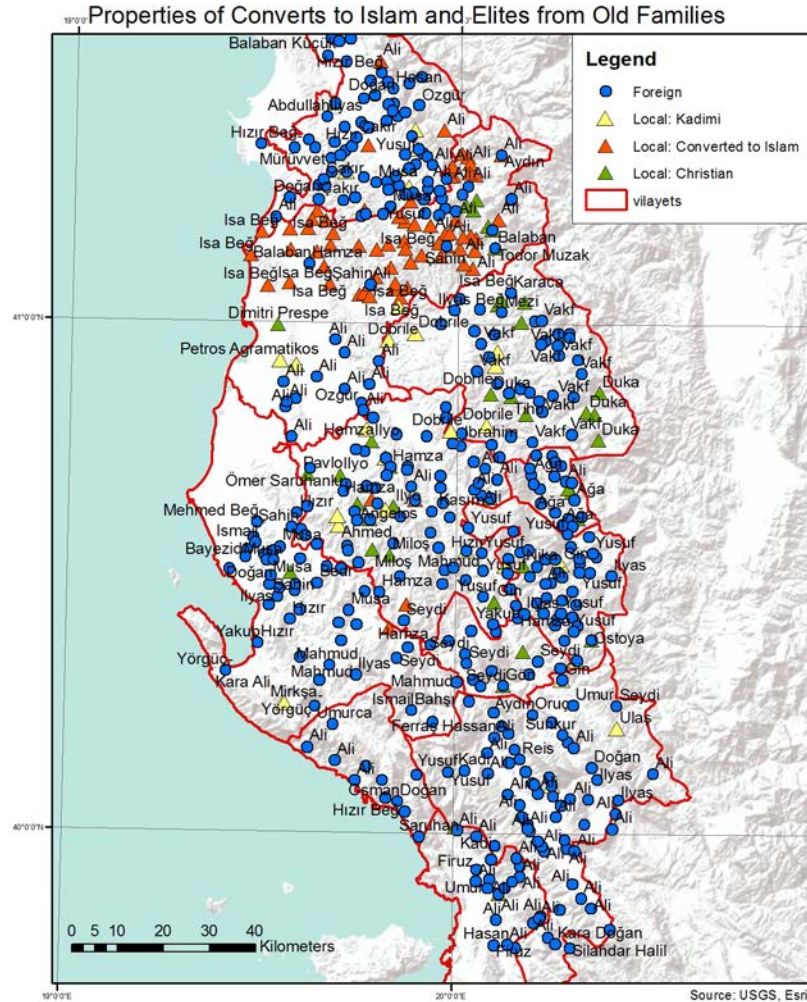
tandem with the preferences of the sultan). In contradistinction, local nobles who come from families that have ruled in the area for a long time are further away from the sultan's ideal point (they possess local political clout and could potentially rebel against the Ottomans). The sultan makes concessions and shares some rent with both. Under the theoretical model proposed, I should see the following:

H1: Nobles who converted to Islam enjoy higher concessions and rent from the sultan.
H2: Nobles from ancient ruling families enjoy lower concessions and rent from the sultan.

I operationalize concessions in the model as the number of possessions (villages or localities) that local nobles have under their control. The number of possessions is influenced by the local nobles' ideal point and how far it is from the sultan's ideal point. In the case of converts from Christianity to Islam, the local nobles' ideal point is close to that of the sultan, which would entail more concession and more

21

rent. In contradistinction, in the case of nobles possessing nobility titles, their ideal point is far from the sultan's ideal point, which would entail fewer concessions and less rent from the sultan.

Many of the parameters included in the theoretical model are not directly observable. For example I cannot measure directly the sultan's need for cooperation (β), strength of local nobles (z), severity of punishment (P) or probability of success in defeating the Ottomans (p). These elements are important however for the purpose of understanding de decision-making in the Ottoman Empire and the interaction between the sultan and indigenous elites[11]. There are however parameters that are observable and can be tracked and measured empirically. These parameters are:

- Local's share of rent - the difference between the income raised from taxes and the value of the military obligations

- Concessions - the number of villages and how populous these villages are that local nobles collect taxes

In order to provide evidence for the proposed mechanisms, I use data from one of the earliest Ottoman summary fiscal registers (mid 15th century) that covers the south-western region of what is today Albania[12]. The fiscal register from province of Arnavıd is one of the most complete fiscal registers that offers a unique glimpse into the way the Ottomans interact with indigenous populations in the newly conquered territories. In addition, the data contained in the register is close to the time when Albania was conquered (early 15th century) and hence demonstrates the Ottoman state in the making.

5 The Land: Logic and Context of the Timar System

Generally, Ottoman conquest in the classical and pre-classical era (İnalcık, 1994) entailed two stages: tribute-paying stage and annexation. In the first stage, local elites started paying tribute as a token of their submission, becoming protected subjects of the Ottoman Empire. The interim period entailed a gradual replacement of the pre-Ottoman administrative apparatus with the **timar system**, which is probably the most important institution in the construction of the Ottoman provincial administration (İnalcık, 1994)[13]. In the final stage, local nobles were assimilated as timar soldiers or *timar sipahis*[14].

Under the timar system, the sipahis lived in a village that was itself a source of income and collected

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[11]As previously explained, the model is a stylized version of history and probably is unable to capture the finer details in the interaction between the sultan and the indigenous elites. However, the model is a parsimonious theoretical framework, representing a useful guide in understanding how monarchs, kings or sultans interact with local elites from territories that they are trying to include within the Empire.

[12]I provide an introduction to this summary register, together with examples of facsimiles, transliterations and translations in section "Facsimiles and Transliteration" of the online appendix of this article.

[13]İnalcık (1973) regards the timar system and slavery as the two fundamental institutions of the classical Ottoman Empire. Together they defined the state's military and political order, taxation system and forms of land tenure, determining the social and political structure.

[14]The sipahi was the typical Ottoman cavalryman in the classical Ottoman period.

a tax on crops (*the tithe*), often paid in kind [15]. The Ottoman state assigned state agricultural revenues to army soldiers[16], who collected the revenue directly, instead of salary[17]. To help the sipahi live in the village, the peasants had to perform small and specific services for him (e.g. building a barn, but not a house, carry the tithe to his barn, reap the grass on the siphahi's territory but not move the grass to his barn, etc.)

The timar holders had to provide military services to the Ottoman Empire when the Ottoman Empire was at war. Some of the timar holders were participating in war themselves and others had to bring additional forces with them. The military obligations can be categorized under four different types: slaves (e.g.: *gulam, oğlan, nöker*), soldiers (e.g. *cebelü*), different types of armour (e.g. *günlük, bürüme, keçim*) and tents (e.g. *tenktür, çadır*). Much of the revenue that some of the land owners were collected from their assigned villages was in fact going to the training in the case of soldiers and the acquisition/construction of armour and tents.

While in some way, the timar system resembles European feudalism, there are also some important differences. With the timar system the Ottoman state established its own absolute control over land. Despite the fact that timar holders were sometimes referred to as owners (*sahib*), they had no rights over land or peasants beyond what was defined by law. They were simply state agents meant to supervise land ownership and usage. All agricultural land belonged to the state (*miri*) with the exception of *mülk* (freehold ownership) and *vakf* (pious foundation) lands, which remained at the sultan's discretion (İnalcık, 1973). The peasant on the timar's territory enjoyed usufructuary rights in return for his labor. Similarly, the land could be passed from one generation to the other or from one relative to another[18], without the right to sell or transfer it. The fundamental difference from European feudalism was that the state abolished all personal dependencies between the local peasant and the timar. The centralized bureaucracy strictly regulated titles, taxation and fundamentally, the relationship between the tax-payers and tax farmers.

Timar holders had control over various possessions of local peasants: arable lands, pastures, fruit trees, forests or rivers. In addition, they supervised transfer of land taxed anyone who would be using their possessions. Similarly, timar-holders had policing rights within their territory: they had the right

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[15]Taxes paid in kind were mostly a solution stemming from the shortage of coin characterizing the 15th century (İnalcık, 1973).

[16]Timar holders were getting their timars at the commanding officer's petition (İnalcık, 1973). The sultan was reviewing such petitions and then decided whether to allocate timars or not. Successful applicants would get assigned a timar of a specific value and would receive a certificate - *tezkere*. Finally, upon receiving the certificate, successful candidates could approach the central government to receive an authorization (*berat*). In the frontier zones, however, it could also be the sancak beğ or the subaşı, who could grant timars to sipahis. Sipahis could also become part of regular tax-paying peasant population if they did not serve in the military.

[17]The system in which soldiers were collecting revenue was an established practice in Islamic empire, but also in the Byzantine empire where the system was called *pronoia*. According to İnalcık (1973), it was relatively easy for the Ottomans in the Balkans to convert the *pronoia* system under the Byzantine Empire into the *timar system*. In the Byzantine Empire, the peasant was required to give the fief-holder annually fodder, wood and hay but also a number of days of unpaid work on the fief-holder's land. While the notebook does not provide detailed information on what the land looked like prior to Ottoman conquest, it was probably the case that feudal lords were hereditary lords who were collecting taxes from the peasants inhabiting their lands in exchange for the peasants' usufructuary rights (İnalcık, 1954).

[18]In Albania, for example, many of the indigenous families were allowed to transfer the timar property to their sons or to other relatives: brother, wife, nephew.

to pursue and arrest criminals and thus, protect the peasants who lived within their territories. Typically it was the richer timars who were responsible for maintaining the security of peasants within their own territory and hence they did not receive inspections visits from governors of the province since they were the "trusted" delegates of Ottoman authority.

6 Introducing the Historical Data

Using the fiscal register and a whole range of historical maps, I created a database with all the local nobles listed in the fiscal register together their properties. I used a whole range of historical maps to identify the location of their properties (villages from which they collect taxes). I identified these localities based on the name similarity in Ottoman and Albanian and sometimes, based on proximity to the locations identified and the historical district that they are part of (check section on Historical Cartography of the online appendix). The notebook is written in Ottoman Turkish, which was the official language of the Ottoman Empire, containing a a vast mixture of both Arabic and Persian grammar and vocabulary. The notebook contains approximately 150 folios.

I coded all the local and foreign land owners based on their name and their father's name: the variable foreign takes value of "1" on the one hand, if land owner has a Muslim name and no information is provided about their father and on the other hand, if both the land owner and his father have a Muslim name. The variable foreign takes value "0" if land owner has a Christian name and no information is provided about their father and if land owner has a Muslim name and their father has a Christian name (check the codebook section of the online appendix).

There is a total of 275 unique timars possessing 665 properties. Out of the 275, 44 timars are local and 231 foreign. The 44 local timars control and partly control[19] 136 localities, while the 230 foreign timars control and partly control 529 localities. A simple regression to examine whether local timars collect more revenue compared to foreign timar reveals no statistically significant difference whatsoever (page A14 of appendix). Similarly, there is no statistically significant difference in the revenue collected by christians, as opposed to muslims (page A15 of the appendix).

6.1 Foreign Land Owners

Many foreign land owners are men sent from Anatolia and have important positions in the Ottoman bureaucracy: governor, military commanders and guards, etc. Some of these positions are more lucrative than others both in terms of revenue collected and number of properties owned. Figure 6 ranks the amount of revenue collected in the sancak of Arnavıd by the timar's bureaucratic position[20] and displays them on the map. Not surprisingly, it is the governor of the province (*sancak beǧ*) - Ali Beǧ, who collects

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[19]Some timars partly control some localities because they share their property with one or more timars.
[20]The amounts displayed are income averages for every position listed in the fiscal register.

the highest revenue and has the largest amount of properties. The next positions are the *subaşı*s (7) who are military commanders, whose duty was to command the cavalry in military operations, while they also played a role in civil administration. Next comes the category of *dizdar*s (5), who represent the guards of the fortresses together with *kethüda* (1) - the deputy. The fifth richest category is the category of the *zagarcı* (1) or hound keeper. The sixth category is *ser'asker*s or military generals (2), while the seventh category is that of the nökör (1) or servant to a leader[21].

Figure 6
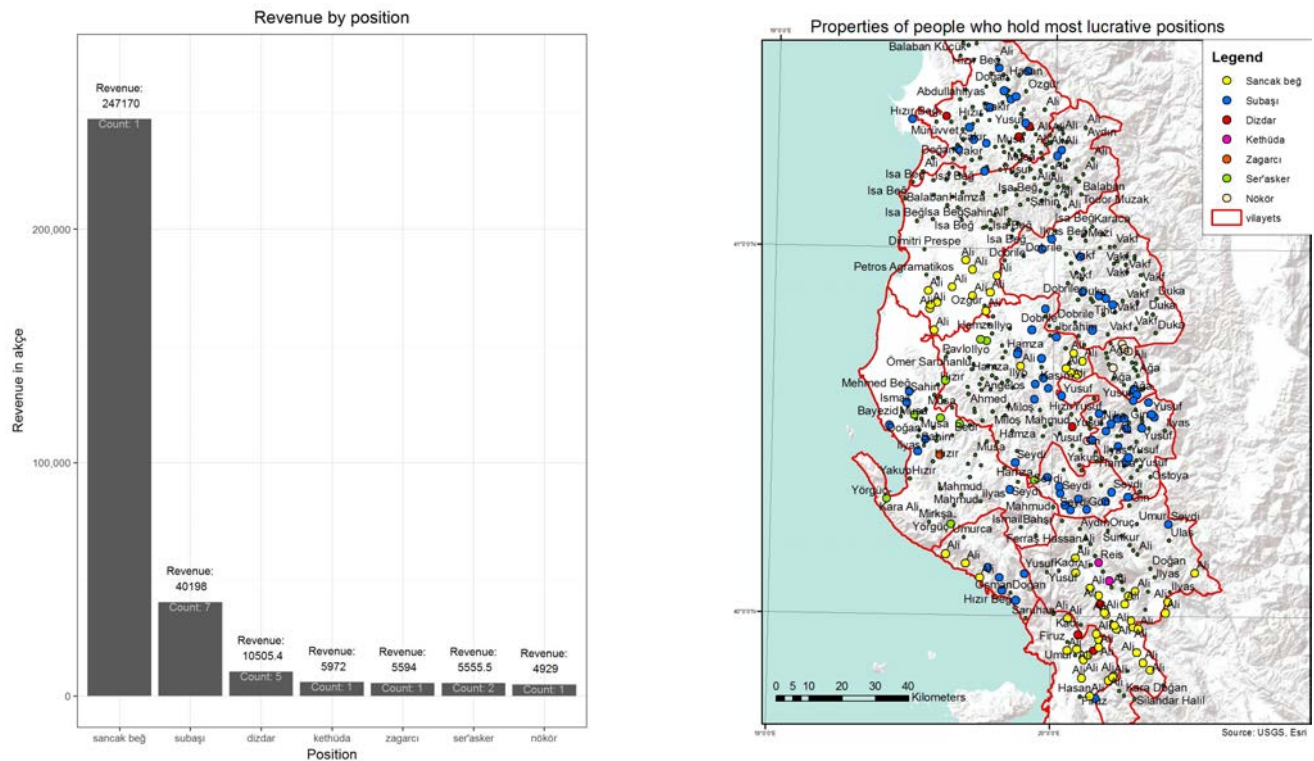
6.2   Local Land Owners

Figure 7 displays the local timars who collect the highest revenues and their location in the province. The ranking indicates that the richest local nobles are Isa Beğ, Ali and Mustafa, who have no status juxtaposed to their name, followed by Dobrile, a kadimi (belonging to an old family) and some other nobles, including Andranikos, who is a "relative of Ishak Beğ"[22].

Many of the local timar holders have important positions within the local community. For example the notebook contains three timars that belong to two bishops and one metropolitan. In contrast to many other timars, neither the bishops, nor the metropolitans need to provide military forces to the

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[21]İnalcık (1973) argues that this position is comparable to commendatio or homage of the medieval armies in Europe.
[22]It is difficult to say who Ishak Beğ was; however some local timar have a status added to their name indicating that they are someone's relative.

Figure 7
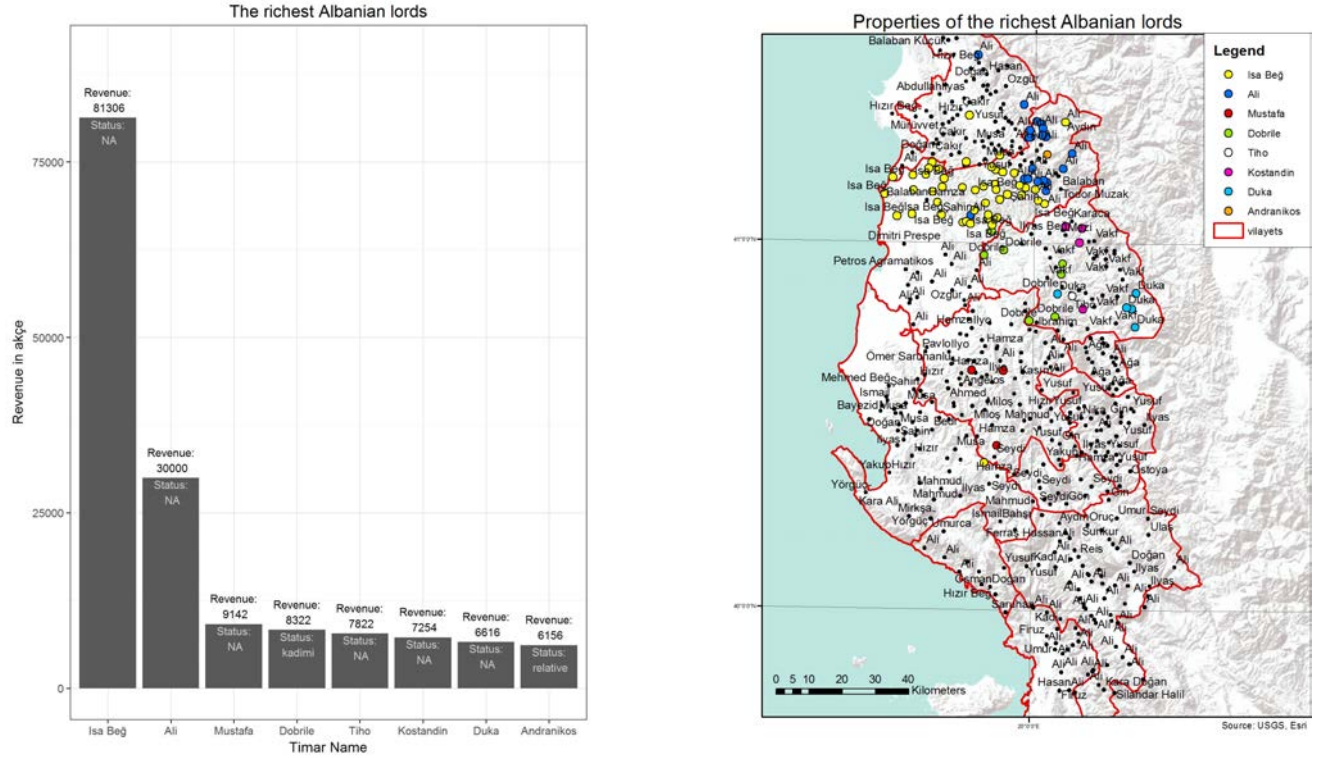
Ottoman army. An example of a timar listing, belonging to a bishop reads as follows:

> **The timar of the bishop**
> During the deceased sultan [Mehmed I (1413-1421)], the other bishop took it over. He died. During the time of our sultan [Mehmed II (1444-1446; 1451-1481)], it was given to the aforementioned bishop.
> [...]
> Presently, it was given to the son of İlyas, he became the owner and served the fortress; at the beginning of the month of Ramazan in the year 857 (1453), in Edirne
> - the church of the Bishop - property, the vineyard connected to the church, 10 day workers; the vineyard in Kanina 5 day workers, 6 walnuts
> In total: 1 village, 1 church, hane 10; Revenue: 1652[23]

7 Empirical Strategy

In order to provide support for the theory explaining the interaction between the sultan and the local elites, I am interested in examining whether locals who converted to Islam have more concessions

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[23]The original reads as follows:

Timar-i Peskopoz

Merhum Sultan zamanında ayrık peskopoz yermiş, ölmüş, Sultanımız zamanında mezkûr peskopoza bidirmişler

[...]

Şimdiki halde oğlu İlyas'a verildi, mutassarıf oldu hısara hizmet eder; fî evâili Ramazan sene 857, der Edirne

- Kilisya-i Peskopiye - hâssa: bâğ der dîh-i Peskopiye 10 ırgad; bâğ der Kanina 5 ırgad, koz 6

Cemᶜan: kariye 1, kenise 1, hane 10; Hasıl: 1652

and more rent from the sultan. Similarly as I am also testing whether nobles from ancient families have fewer concessions and fewer rents. The two regression equations to be estimated are:

$$Y_{\text{concession}} = \beta_0 + \beta_1 \text{Local type} + \epsilon \tag{44}$$

$$Y_{\text{rent}} = \beta_0 + \beta_1 \text{Local type} + \epsilon \tag{45}$$

where $Y_{\text{concession}}$ is the outcome of interest, β_0 is the constant, Local type is a variable to indicate where the noble is Christian or part of the old landed rulers and ϵ is the error term. Note that the two categories are not mutually exclusive. Local nobles can also have no status.

7.1 Variable Operationalization

Many of the land owners have their father's name listed alongside their name (e.g. "Property of Isa Beǧ, son of Pavlo Kurtik"[24]). I created a binary variable based on this information and assigned value "1" to cases in which the land owner has a Muslim name and their father has a Christian name to suggest that the land noble converted to Islam and "0" otherwise. Similarly, many local land owners have the title "kadimi", listed alongside their name, which means "old" (e.g. "Property of Dobrile, kadimi"). I created a variable with value "1" for noble who possess the title "kadimi" and "0" otherwise.

I operationalize concessions in two ways: (1) the number of villages that the sultan assigns to nobles and (2) the aggregate population from the villages that are assigned to them. I disaggregate population in households (*hane*), bachelors (*mücerred*) and widows (*bive*)[25] and I also compute a conservative population size measure by multiplying households by two (assuming that a household is made out of at least two people) and adding bachelors and widows.

Operationalizing rents is more challenging. The fiscal register contains information on the the aggregate revenue that land owners are getting from all of their assigned villages and village-level revenue that land owners are getting from all of the inhabitants in every village. While at first glance the revenue collected present in the register could be taken as an indication of rent, such interpretation would be erroneous. As explained in section 5, most land owners had to provide military services to the Ottoman army in exchange for their properties. In some cases land owners were participating in war themselves and in some other cases they were also bringing more military forces with them (e.g. slaves, soldiers, armour and slaves). In order to account for military cost, I use information from Fodor (2009, p. 201), who, based on several primary and secondary sources relevant for the 15th century, lists the military obligations for the various income categories of land owners. Based on this information, I created a variable that measures the military cost. Finally I subtracted military costs from the original

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[24]The orginal reads as "Timar-i Isa Beǧ, veled-i Pavlo Kurtik".
[25]Households (*hane*), bachelors (*mücerred*) and widows (*bive*) are fiscal units in the Ottoman Empire.

revenue to get a measure for rent-sharing (see section "Obligations of the timars" in the online appendix for more details).

The way I operationalize concessions, rents, cases of conversion and cases of nobles coming from old families (Kadimi) are summarized in table 1.

Table 1

Concept	Operationalization	Source
Concession	Log number of villages per land owner	Register
	Log number of households (*hane*) per land owner	Register
	Log bachelors (*mücerred*) per land owner	Register
	Log widows (*bive*) per land owner	Register
	Log population per land owner	Approximated: $2 *$ Households + bachelors + widows
Rent	Log Difference between income and the value of military obligations	Register and Fodor (2009, p. 201).
Conversion	0 and 1 based on whether the father and the son have different religions	Register
Kadimi	0 and 1 based on whether the local noble has the status "kadimi" to his name	Register

8 Findings

8.1 Conversion to Islam, Rent and Concessions

There are 3 out of the 44 unique indigenous timars that I identified in the sancak of Arnavıd, who converted from Christianity to Islam. While this may seem a small number, the three timars who converted control more than a half of all the localities that belong to local nobles (69 of 136 localities). The villages that the three timars control are displayed in figure 8.

The most important example of a timar who converted is Isa Beğ, son of Pavlo Kurtik[26]. The notebook contains the following information about him:

> **The Timar of Isa Beğ**, son of Pavlo Kurtik.
> [...]
> It was given to Hüsseyn, the son of the aforementioned, around the middle of the month of Şa'ban, in the year 848 (1444), in the place of Edirne. Was transferred to Sinan Beğ, the subaşı for Alice in the latter days of the month of Ramazan, in the year 841 (1438), in Edirne[27]

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[26]The appendix to this paper contains the facsimile for the first page of the notebook that lists Isa Beğ's properties, together with transliteration and translation
[27]The original reads as follows:

Figure 8

Properties of Nobles who converted to Islam
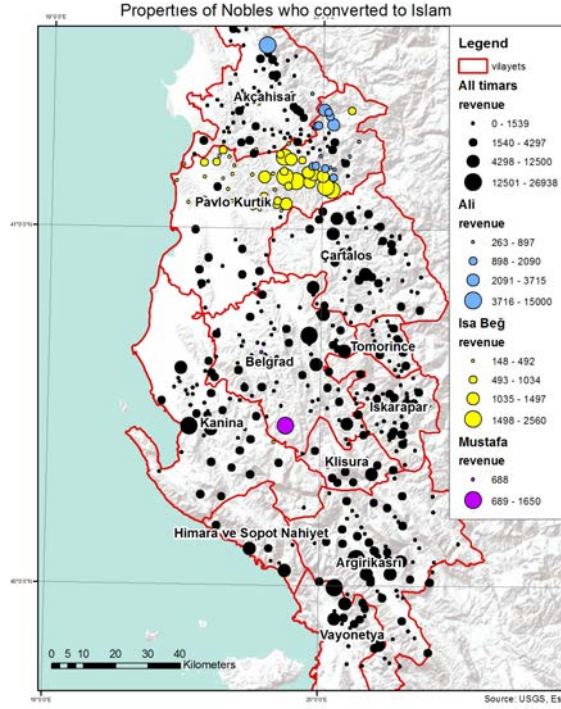
Another example is the brother of Isa Beğ, Mustafa, who controls the region further south from his brother. The notebook provides the following information about him:

> **The Timar of Mustafa**, son of Pavlo Kurtik.
> [...]
> (His timar) is made out of several parts that belonged to various individuals, and was given to the aforementioned. He had authorization from the sultan[28].

The thid person who converted is Ali, son of Karlo who is listed as:

> **The Timar of Ali**, (deceased) son of Karlo.
> [...]
> During the time of the deceased sultan and the our sultan's time, Karlo took it over. He died. Our sultan gave it to the aforementioned Ali. He ordered that his remaining brothers enjoy his posession. He has authorization from our sultan[29].

Timar-i Isa Beğ, veled-i Pavlo Kurtik.
[...]
Bu mezkûrun oğlu Hüsseyn'e verildi, tahîren fî evâsıtı Şa'ban sene 848, bi-makamı Edirne.
Müntakil kerde şod be-Sinan Beğ subaşı-i Alice tahîren fî evahir Ramazan sene 841 der-Edirne.
The appendix to this paper contains the facsimile for the first page of the notebook that lists Isa Beğ's properties, together with transliteration and translation.
[28]The original reads as follows:
Timar-i Mustafa, veled-i Pavlo Kurtik.
[...]
Birkaç kişiden cemᶜedüp timar etmişler, şerh köylerde zikrolusardır, elinde Sultanımız berâtı vardır.
[29]The original reads as follows:
Timar-i Ali, (mürde) veled-i Karlo.
[...]
Merhum Sultan ve Sultanımız zamanında Karlo yermiş, ölmüş, Sutanımız mezkûr Ali'ye vermiş, kalan karındaşlarını dahi hoşnûd edip bile göre deyu buyurmuş, elinde Sultanımız berâtı vardır

Table 2 displays the results in which I compare the average rent (how much nobles are left with after they fulfill their military obligations towards the Ottoman Empire) of local nobles who converted to Islam against everyone else in the sample of land owners (column 3) and against other local owners (column 6). Results indicate that nobles who converted to Islam have on average 127 akçe more (column 3) compared to other nobles and 129 akçe compared to other local Christians. While this represents slightly more than a tenth of the price of a slave (*gulam* - 1000 akçe, as indicated by Fodor (2009, p. 201)), this result is highly statistically significant. Nobles who converted to Islam also have 126 akçe more compared to other muslims (see table 5 in the appendix). Local nobles who converted to Islam have more revenue both compared to other land owners (column 1) and locals (column 6). Despite being richer, local nobles who converted do not have to provide more military forces to the Ottoman army (slaves, soldiers, amour or tents) in a way that is proportional to their income. Generally, results from table 2 confirm the association between rent-sharing and conversion to Islam.

Table 2: Rent sharing for Nobles who converted to Islam

	Full Sample			Local Sample		
	Revenue	Military Costs	Rent	Revenue	Military Costs	Rent
	(1)	(2)	(3)	(4)	(5)	(6)
Converted	2.426***	0.049	1.273***	2.554***	0.035	1.298***
	(0.519)	(0.045)	(0.433)	(0.531)	(0.090)	(0.431)
Constant	7.820***	7.552***	9.078***	7.691***	7.566***	9.053***
	(0.056)	(0.045)	(0.042)	(0.125)	(0.090)	(0.027)
Observations	260	213	260	45	35	45
R^2	0.077	0.0001	0.039	0.380	0.0003	0.615
Adjusted R^2	0.074	−0.005	0.035	0.366	−0.030	0.606

Notes: Coefficients and robust standard errors in paranteses from OLS regression. *p<0.1; **p<0.05; ***p<0.01. All the dependent variables are logged. The first models display coefficients using the full sample of land owners, while the last models display coefficients using the local sample (i.e. indigenous elites). *Income* is taken directly from the fiscal register. *Military costs* are sums of the prices of military obligations that nobles have to the sultan. *Rent* represents the difference between income and military costs. The unit of measurement is akçe.

The differences in means for people who converted as opposed to people who did not for the full and local sample are also displayed in figure 9.

As far as concessions are concerned, table 3 displays a mean comparison between local nobles who converted to Islam and other nobles (columns 1 through 5) and between local nobles who converted to Islam and other local nobles (columns 6 through 10). Results indicate that nobles who converted to Islam possess 217 villages (column 1) more than other nobles and 232 (column 6) more when compared to local nobles. The villages that nobles who converted to Islam control are also more numerous as indicated by the number of households (*hane*), widows (*bive*) or more generally by the population size inhabiting these villages. Almost all models in table 3 indicate that local nobles who converted to Islam have more concessions from the sultan.
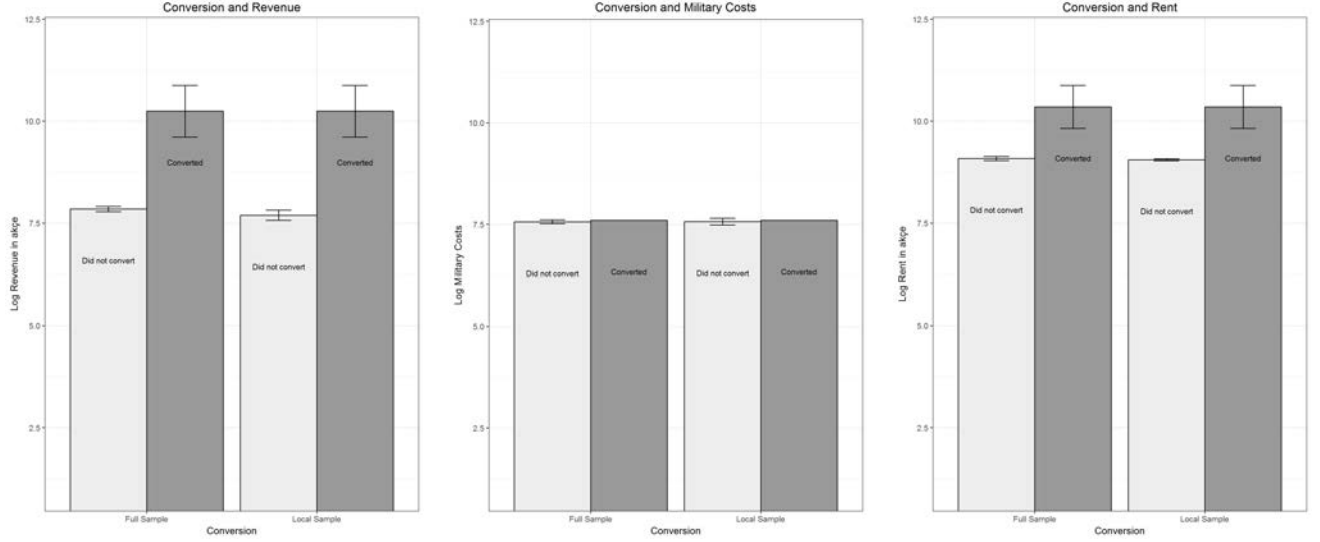
Figure 9: Rent-Sharing

Table 3: Concessions for Nobles who converted to Islam

	Full Sample					Local Sample				
	Villages	Hane	Bive	Mücerred	Population	Villages	Hane	Bive	Mücerred	Population
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Converted	2.171***	2.664***	1.356*	0.668	2.773***	2.329***	2.604***	1.483**	0.751	2.701***
	(0.661)	(0.859)	(0.700)	(0.627)	(0.787)	(0.664)	(0.866)	(0.708)	(0.627)	(0.797)
Constant	0.470***	2.924***	0.354***	0.100***	3.597***	0.312***	2.985***	0.227*	0.017	3.669***
	(0.038)	(0.072)	(0.045)	(0.029)	(0.077)	(0.080)	(0.137)	(0.117)	(0.016)	(0.146)
Observations	275	275	275	275	275	45	45	45	45	45
R^2	0.113	0.051	0.034	0.020	0.049	0.501	0.324	0.178	0.283	0.323
Adjusted R^2	0.109	0.048	0.030	0.016	0.046	0.490	0.309	0.159	0.266	0.307

Notes: Coefficients and robust standard errors in paranteses from OLS regression. *p<0.1; **p<0.05; ***p<0.01. All the dependent variables are logged. The first models display coefficients using the full sample of land owners, while the last models display coefficients using the local sample (i.e. indigenous elites). *Hane* (households), *mücerred* (bachelors) and *bive* (widows) are fiscal units that are taxed separately in the fiscal register. Population is an approximation that was calculated so: 2*Hane+mücerred+bive.

The differences in means for people who converted as opposed to people who did not for the full and local sample are also displayed in figure 10. In order to show the demographic density of the properties owned by land nobles who converted to Islam, I am using an inverse distance weighting scheme (IDW). The results are displayed in figure 11

There were never negative constraints[30] in the Ottoman Empire to convert, since such measures would have been detrimental to the military and economic interests of the state (Inalcik, 1996). However, conversion could have occurred as a result of indirect constraints. Inalcik (1996, p. 69) mentions how the poll-tax on Christians was "responsible for mass conversions in various parts of the Balkans" to suggest that Christians had higher fiscal obligations to the center. A similar logic could be applied to the elite level. Local nobles who converted to Islam seem to have had a higher income than those who

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[30]I use the term negative constraints to refer to punitive measures that could be taken against people of a different religion. Constraints can also be positive in the sense that conversion can bring about socio-economic benefits.
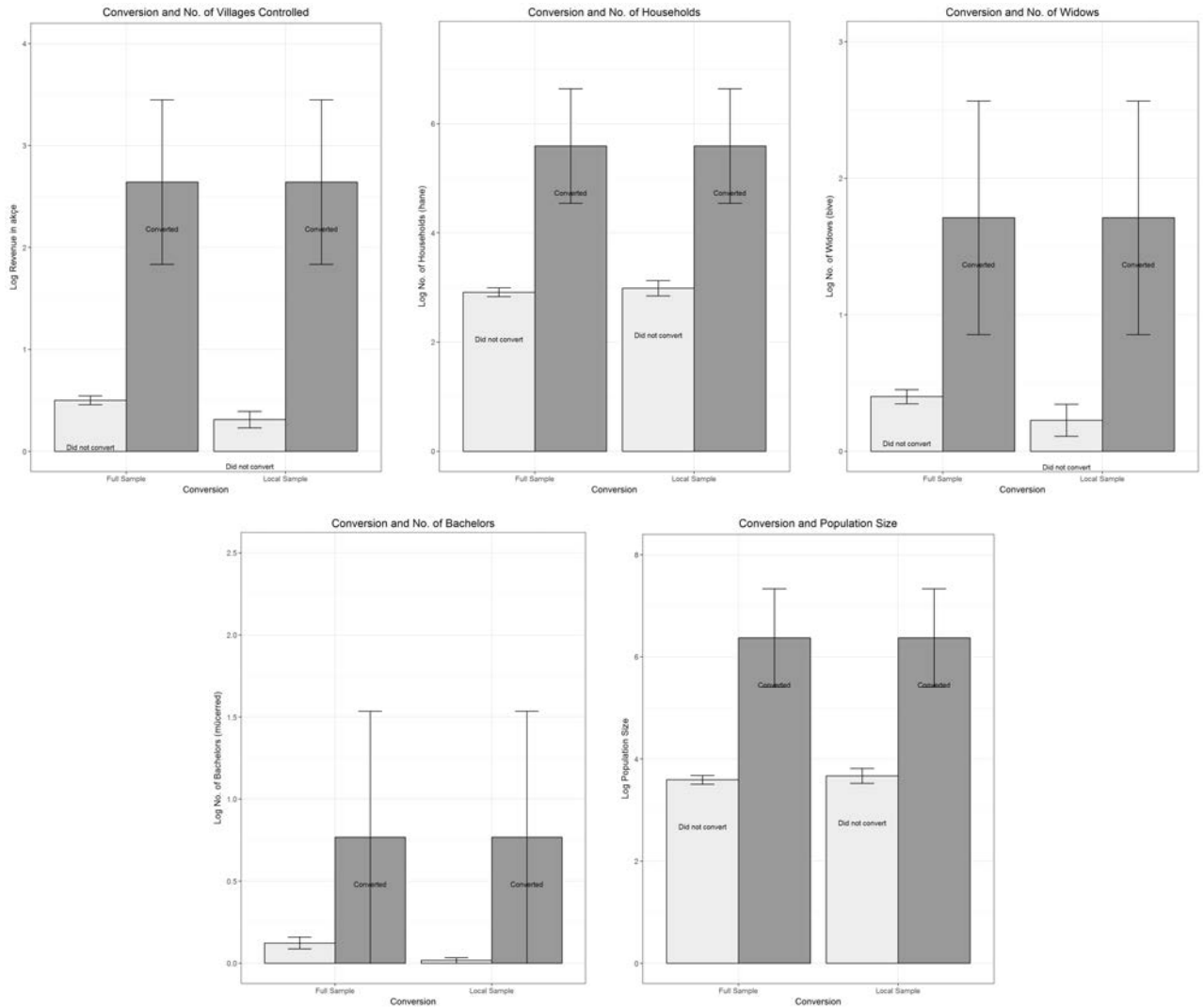
Figure 10: Concessions

did not.

The fact that the notebook does not contain information on the amount of money that land owners were extracting prior to the installation of the timar system makes it difficult to solve the reverse causality problem: it can be argued that high income could have led some nobles to convert, but also that conversion could have led to more income. There is however some suggestive evidence which can be traced to the map of the sancak that is displayed in figure 8[31] to indicate that conversion was a means for local nobles to keep their status and properties. Isa Beğ, the richest indigenous lord resides in a district that has his father's name - Pavlo Kurtik. İnalcık (1952) argues that it was typical for the Ottomans to name a district after important local lords who accepted Ottoman authority, which means that conversion for Isa Beğ was probably a way to keep his father's properties.

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[31]Check the appendix of this article for an explanation of how the provincial borders were created.

Figure 11

Properties of Nobles who converted to Islam and Population Density
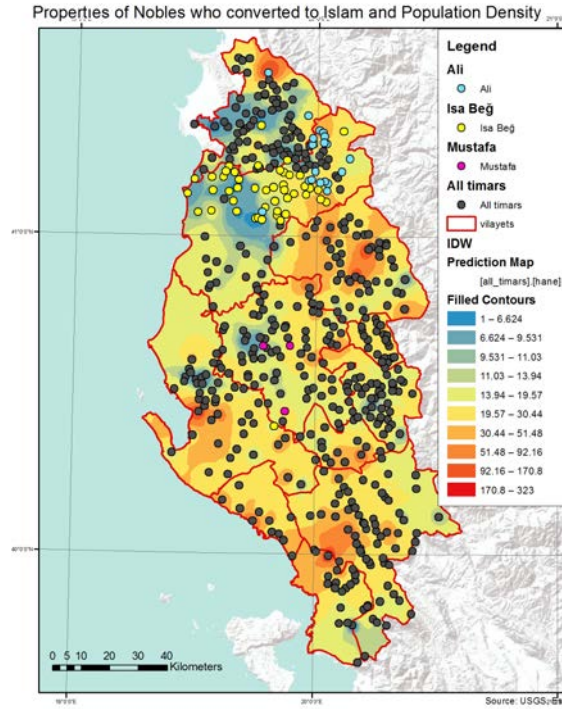
The process of Islamization of the region of Albania is a known phenomenon in history that was initiated with Ottoman conquest in Albania[32] in the 14th century (Inalcik, 1996). The Sunni Islam in Albania and in the Balkan provinces of the Ottoman Empire more generally, was initiated and then maintained by two factors: first the Ottoman upper classes, the administrative and religious functionaries, who moved to the region and second, the feudal clans who tried to preserve their lands and consolidate their privileges. In a first instance, the biggest battle that feudal lords had to fight was the battle with themselves. The animosity among indigenous feudal lords is one of the factors according to to historians (Inalcik, 1996; Pulaha, 1973) that contributed to the adoption of Islam by local elites. The first step was to fall under partial dependence on the sultan by paying an annual tribute in exchange for the sultan's protection against other feudal lords. The second step was to become full-fledged Ottoman feudal tenants as it was the case with Isa Beğ and Mustafa, whereby feudal lords adopt Islam as a way to preserve their lands and consolidate their privileged positions. Despite referring to century later, Lampe (1996, p. 23) actually confirms that "the legal rights that Muslims received in an urban milieu growing in size and sophistication during the sixteenth century made conversion advantageous" for the

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[32]The exact date when Ottomans started conquering the Albanian territory is not known, but some historians argue that it was probably in 1385, with the battle of Voissa (İnalcık, 1952), when the Ottomans defeated the troops of Balša II, Duke of Drač (1382–85). Albanian lords were able to keep their positions in exchange for the payment of taxes, by sending their sons to be educated in Istanbul and by providing auxiliary troops for the Ottoman army. According to İnalcık (1952), the establishment of such a system was probably concluded around the time of Bayezit I (1389-1403), probably after 1394, first along the valleys of middle Albania that were more easily accessible, and then the rest of the region. Important families like Balša, Dukagjini, Koja Zaharia, Musachi, Zenebissi, Araniti and Kastrioti recognized the Ottoman sultan as their sovereign.

elites, while for the local peasants, rights and tax privileges attracted few people. Islam began to spread first in populous urban centers where both the Ottoman and local elites were residing. Pulaha (1973) describes how Muslim capital holders gained important positions in cities and how the role of their Christian counterparts in key economic positions was gradually fading, starting with 15th century.

8.2 Locals from ancient families (*kadîmî*), Rent and Concessions

Some of the local nobles included in the notebook possess the title (*kadîmî*) alongside their name. Typically, Ottoman dictionaries indicate that *kadîmî* means "old". However, in the fiscal register, the status "kadîmî" is also sometimes accompanied by the mentioning "he has been in possession (of a land) for a long time" or that the timar holders' father was also in possession of the timar, during the time of the deceased sultan, Murad II (1404-1451). It is likely that the kadîmî timars have been in power and without any challenge to their rule since the time of Bayezid I (1389-1402). According to İnalcık (1954), starting with the time of Bayezid I, the Christian lords were exempt from taxes and were made responsible for the protection of citadels. With time, as the Ottomans strengthened their rule, the sultan allowed nobles to keep a lower share of rent rather than the entire share of rent, while their hereditary right to land ownership was respected. While cash itself was low, the local nobles still had the political power and prestige that came with their hereditary position.

The data collected indicates that 18 of the 44 local timars carry the title "kadîmî", which comes next to their name in the register. These 18 kadimi timars control 27 villages out of the 136 villages controlled by local timars. The villages controlled by kadîmîs are displayed in figure 12.

A typical kadîmî listing is Ostoya, son of Yorgi.

> **The Timar of Ostoya**, the son of Yorgi, kadîmî
> He took over during the time of the deceased sultan, during the time of our sultan, he gave it to his son, Ostoya, he has an authorization from our sultan.
> [...]
> Presently, the aforementioned and his brother Todor and Dimo are sharing the timar, in the month of Zilka'de, in the year 856 (1452), in Sofya. [33]

Table 4 displays the results in which I compare the average rent (how much nobles are left with after they fulfill their military obligations towards the Ottoman Empire) of local nobles who come from old families (possess the title "kadimi") against everyone else in the sample of land owners (column 3) and against other local owners (column 6). While the results are no longer as significant as the results for conversions to Islam, they indicate that nobles possessing the title "kadimi" are left on average with 10 akçe less (column 3) compared to other nobles (both local and foreign). Kadimis also on average have 19 akçe less (column 6), compared to other local nobles. While only weakly statistically significant, the

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[33]The original can be read as follows:
  Timar-i Ostoya, veled-i Yorgi, kadîmîdir
  merhum Sultan zamanında atası yermiş, Sultanımız zamanında kendü rizasiyle oğlu Ostoya'ya bildirmiş, elinde Sultanımız berâtı vardır
  [...]
  Şimdiki halde bu mezkûr ile kardaşları Todor ve Dimo müşterek yazıldılar, üçü müşterek yeyüp nötbeçe eşerler; fî evâhiri Zilka'de sene 856, der Sofya

Figure 12

Properties of nobles from old familes (kadimi)
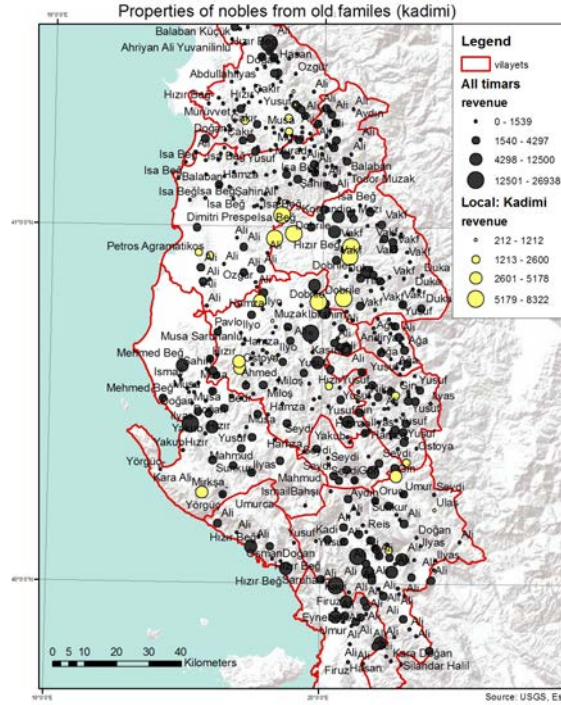
coefficient in column 2 indicates that the cost of military obligations for kadimis is 37 akçe higher than everyone else's which could be an indication for the mechanism that the sultan is utilizing to reduce the influence of ancient families in the regions - over-taxation. Examining revenue as a whole, kadimis possesses 45 akçe less in revenue when compared to all other land owner and 63 akçe less when compared to local owners.

The differences in means for kadimis as opposed to other local nobles who do not have this title for the full and local sample are also displayed in figure 13.

As far as concessions are concerned, it is difficult to draw very meaningful inferences. Many of the coefficients displayed in table 5 are statistically insignificant. Almost all of them however are negative, with the exception of the number of widows (*bive*). Comparing the number of households present in villages controlled by kadimis to the number of households present in villages controlled by other locals indicates that kadimis control villages that have 77 households less (column 7). The population approximation variable also indicates a similar relationship: villages controlled by kadimis have 83 people less (column 10), compared to other local land owners.

The differences in means for people who converted as opposed to people who did not for the full and local sample are also displayed in figure 14. In order to show the demographic density of the properties owned by kadimis, I am using an inverse distance weighting scheme (IDW). The results are displayed

Table 4: Rent sharing for Nobles from old families (kadimi)

	Full Sample			Local Sample		
	Revenue	Military Costs	Rent	Revenue	Military Costs	Rent
	(1)	(2)	(3)	(4)	(5)	(6)
Kadimi	−0.456**	0.375*	−0.107*	−0.633**	0.189	−0.199**
	(0.224)	(0.225)	(0.061)	(0.310)	(0.178)	(0.099)
Constant	7.879***	7.526***	9.100***	8.073***	7.503***	9.206***
	(0.060)	(0.045)	(0.046)	(0.182)	(0.103)	(0.087)
Observations	260	213	260	45	35	45
R^2	0.015	0.021	0.002	0.083	0.032	0.052
Adjusted R^2	0.012	0.017	−0.002	0.062	0.003	0.030

Notes: Coefficients and robust standard errors in parantheses from OLS regression. *p<0.1; **p<0.05; ***p<0.01. All the dependent variables are logged. The first models display coefficients using the full sample of land owners, while the last models display coefficients using the local sample (i.e. indigenous elites). *Income* is taken directly from the fiscal register. *Military costs* are sums of the prices of military obligations that nobles have to the sultan. *Rent* represents the difference between income and military costs.

Table 5: Concession for Nobles from old families (kadimi)

	Full Sample					Local Sample				
	Villages	Hane	Bive	Mücerred	Population	Villages	Hane	Bive	Mücerred	Population
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Kadimi	−0.159	−0.309	0.0004	−0.114***	−0.330	−0.147	−0.772**	0.176	−0.100	−0.837**
	(0.137)	(0.269)	(0.257)	(0.032)	(0.293)	(0.225)	(0.347)	(0.325)	(0.078)	(0.372)
Constant	0.504***	2.974***	0.369***	0.114***	3.649***	0.516***	3.416***	0.267**	0.100	4.128***
	(0.042)	(0.077)	(0.046)	(0.032)	(0.081)	(0.167)	(0.194)	(0.124)	(0.078)	(0.193)
Observations	275	275	275	275	275	45	45	45	45	45
R^2	0.003	0.004	0.00000	0.003	0.004	0.007	0.102	0.009	0.018	0.111
Adjusted R^2	−0.0002	0.0003	−0.004	−0.0003	0.0003	−0.016	0.081	−0.014	−0.005	0.090

Notes: Coefficients and robust standard errors in parantheses from OLS regression. *p<0.1; **p<0.05; ***p<0.01. All the dependent variables are logged. The first models display coefficients using the full sample of land owners, while the last models display coefficients using the local sample (i.e. indigenous elites). *Hane* (households), *mücerred* (bachelors) and *bive* (widows) are fiscal units that are taxed separately in the fiscal register. Population is an approximation that was calculated so: 2*$Hane+mücerred+bive$.
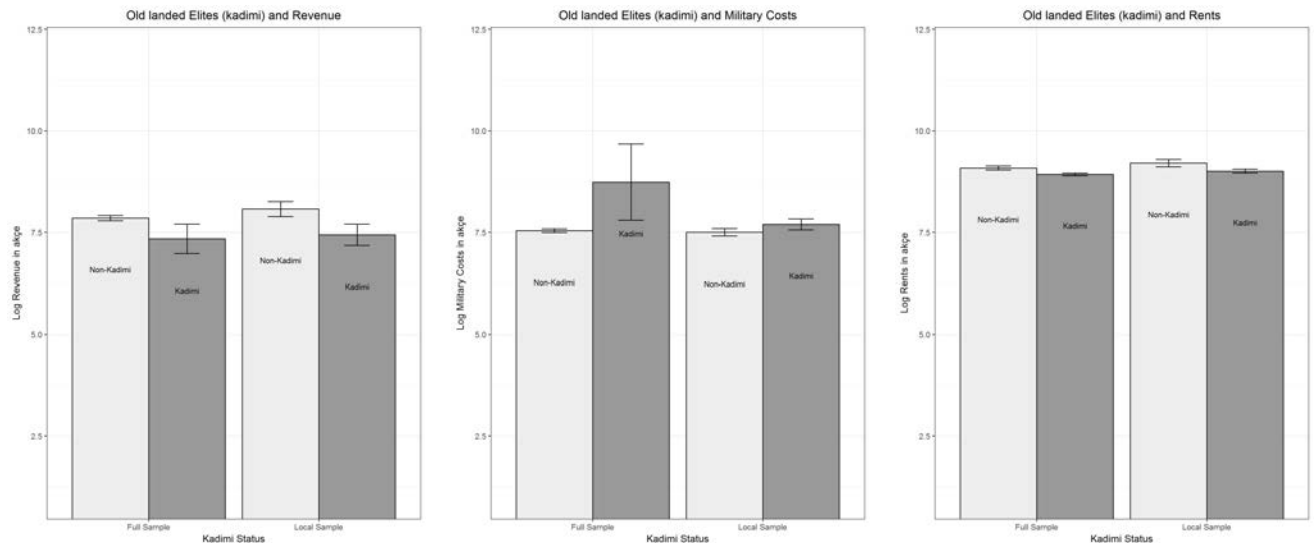
Figure 13: Rent-Sharing

in figure 15.

Making precise statements about the role of kadimis and their interaction is difficult not only because the statistical analysis indicates some weak results, but also because their origin is unclear. As İnalcık (1954) suggest, kadimis should be the old elites who had been in power at least since the time of Bayezid I (1389-1402). The results corroborate to some extent the intuition provided in the theoretical model, that old elites because they are far from the sultan's ideal point, are likely to be offered fewer concessions and be given a lower share of rent.

8.3 Locals and the Possibility of rebellion

An important equilibrium in the theoretical model is that in which local nobles cannot beat the Ottomans and the sultan only offers cooperation and no rent. Nobles revolt as a result. Local nobles who rebelled are by definition excluded from the fiscal register[34]. İnalcık (1954) mentions for example how the revolts of local nobles continued throughout the 15th century and how the rebellions of Skanderberg and Araniti (two Albanian figures whose families owned a lot of land in the region) emerged as a result of the tension between the newly installed Ottoman system and ancient Albanian land ownership.

A particular kind of local nobles were nobles who accepted Ottoman sovereignty, but did not fully adapt to the timar system. They were looking for ways to subvert the Ottoman system from within. This was a dangerous postion for the noble, as indicated in the notebook. Participating in plots would cost the timar holder their lands, and obviously, sometimes, their life. Rumors about potential involvement in a plot would entail confiscation of one's land. This is the case of Pavlo, whose land gets taken away, handed to Turahan beğ, and then returned back to him.

The Timar of Pavlo, son of Kondo Miho.

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[34]Only nobles who accepted the sultan's offer are included in the fiscal register.
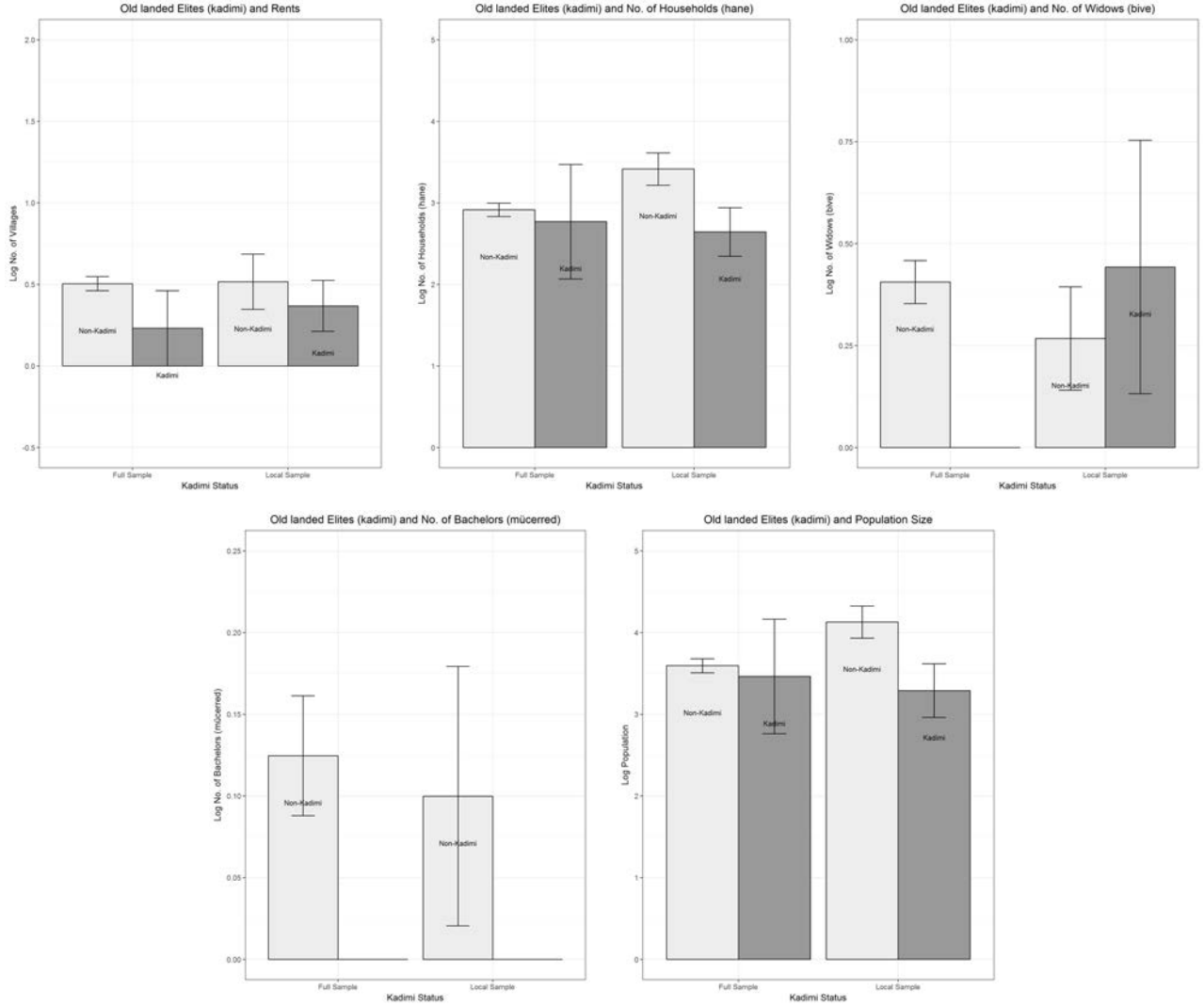
Figure 14: Concessions

During the time of the deceased sultan, the aforementioned Pavlo took over the timar, afterwards he shared his timar with Burhan; right now Dukayını Pavlo report that they have an authorization from our sultan.

Afterwards, when Turahan beğ was in the vilayet of Arnavıd with the order from Hüdavendigâr, half of timar was given to Burhan and half to Pavlo; now our exulted sultan ordered that they should share a timar; in the last days of the month of Zilhicce in the place of Manastır.

Hamza Beğ informed that Pavlo was a traitor and for this reason (the land) was taken away from him and given to Şahin; in the middle days if the month of Zilhice in the year 853, in Edirne.

Now, the part of the aforementioned was returned to Pavlo, like in the old times; in the last days of the month of Muharrem, the year 855, in Edirne. They said that Pavlo has his property back [35]

[35]The original paragraph can be transliterated as follows:

"**Timar-i Pavlo**, veled-i Kondo Miho

Merhum sultan zamanında mezkur Pavlo yermiş, sonra Burhan'la müşterek etmişler, şimdiki halde Dukayini Pavlo ya bildirmişler, elinde sultanımız beratı vardır.

Sonra Turahan beğ Arnavid vilâyetine vardığında Hüdâvendigar emriyle bu timârın nısfın Burhan'a vermiş ve nısfın

Figure 15
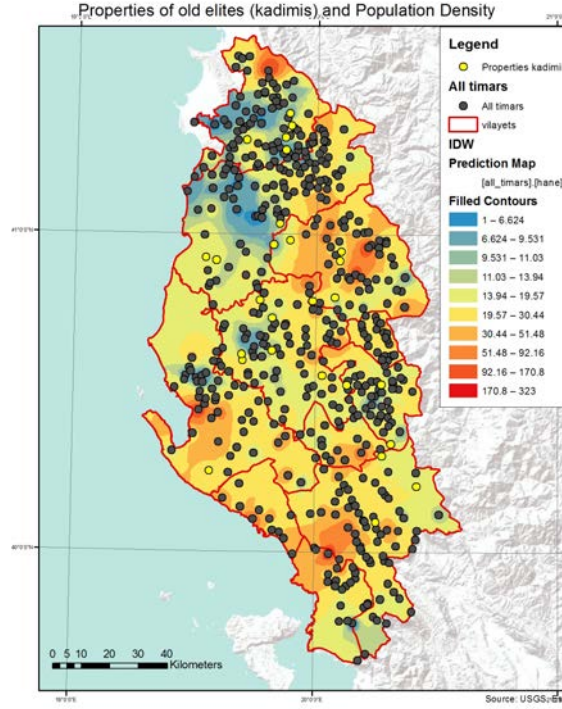
Beyond this type of qualitative evidence based on the examination of the register, it is difficult to make generalizations about nobles who rebel or who never accepted Ottoman authority.

9 External Validity

9.1 The timar system within a larger temporal context and larger Ottoman geography

The timar system was roughly in place between the fourteenth century and the sixteenth century (İnalcık, 1973; Pulaha, 1973). The system declined mostly to due to excessive demands despite attempts to split villages among multiple timars. In addition, the onset of new and cheaper military technologies and the costly wars that the Ottomans were waging with Iran and the Habsburg Empire meant that it was no longer tenable for the Ottomans to pay their military with timar possessions.

The case of the sancak of Arnavıd seems to be slightly antagonistic to the very notion of timar. The timar system was based on the prohibition of intergenerational transfer of property. However, transfer from father to son seems to have been fairly common in the sancak of Arnavıd. İnalcık (1973, p. 115)

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mezkûr Pavlo'ya verilmiş, şimdiki halde Paşamız hazretleri müşterek yesünler deyu emr etti: tahriren fi evâhiri min Zilhicce 837 der mevzi'-i Manastır.
Bu Pavlo için hâin oldu deyu Hamza beğ i'lâm ettiği sebebden alınup Şâhin'e verildi; fi evâsıtı Zilhicce sene 853. der Edirne.
Şimdiki halde bu mezkûrun hissesi gerü kadîmîsi Pavlo᾽ ya verildi; fi evâhiri Muharrem sene 855. der Edirne. Gerü Pavlo elinde olsun dediler."

argues that the possibility of timars being transferred to their sons of the owners was a transition phase in provinces where Ottoman rule had not been firmly established. With progress towards more state centralization, the non-hereditary principle wore out and timars were frequently dismissed. This meant that timar holders lost all of their control over land, peasants and their income. Nevertheless, they could still hold the title of *sipahi* and were eligible to receive another timar, if they continued to participate in battle. Therefore, the concessions that the Ottomans made in the sancak of Arnavıd were concessions that they made at the beginning of their rule. Similar concessions were happening in Bulgaria, Serbia, Albania, Macedonia and Thessaly, where members of the local military class were included within the Ottoman bureaucracy in exchange for usufructuary rights over land and tax exemption (İnalcık, 1973). Religious conversions continued throughout much of the history of Ottoman rule in Albania and other regions. For example, Pulaha (1973) explains how in the 17th century, the abandonment of Catholicism and Orthodoxy represented the key to admission in the Ottoman bureaucracy.

9.2   Beyond the Ottoman Empire

Comparing the Ottoman Empire to other empires both throughout time and history may seem like an anachronistic and essentialist endeavor whereby modern theories and concepts are imposed on the past. This concern is rooted in the fact that different empires have different underlying epistemologies for rule and conquest, different logics of government, subjectivity and religion, etc. However, almost all the elements that have to do with power (im)balance outlined in the theoretical framework of this article are transferrable to other cases. In all cases there is a *ruler* and there are *ruled* who are seeking to satisfy their interests. If she is to establish a durable regime, a ruler needs to negotiate with local authorities and offer them a share of rent and some concessions, which will differ depending on the monarch's need to cooperate, the strength of local authorities, degree of polarization in preferences of the monarch vs. local authorities, the probability of local authorities in defeating the monarch and expected punishment exerted on local authorities, should the local authorities fail. The Ottomans used a combination of direct and indirect rule in the same way many other empires did.

The early Ottoman state created a classificatory structure that contained indigenous people within multiplicities of mutually exclusive customary and religious categories (e.g. people who converted to Islam vs. other Christians, kadimis/non-kadimis). In the Ottoman Empire (in the context of the timar system), religion is a category that belongs both to Ottoman settlers and natives, while "kadimi" or noble status is a category of the natives. Ottoman indirect rule in the Balkans could be understood as a form of governmentality that both managed and shaped differences in subjects in the newly conquered territories and emerged from power exchanges between the sultan and local elites.

The British also used indirect rule in Africa, trying to exert influence through native structures of governance. The case of the Barosteland in South and Central Africa is relevant. While the British established their protectorate over their land (1890), the local king still kept his ability to rule over his people according to Lozi custom. Colson & Gluckman (1951, p. 56) specifically mention that "in

the internal structure of the Province, Lozi and British have been involved in a long struggle despite easy co-operation in many affairs" where British officers considered themselves protectors of the people against their rulers while the latter, protectors against the British. The adoption of Christianity in Barosteland under the British is also strikingly similar to the adoption of Islam in Albania under the Ottoman rule: "…the Loze have absorbed Christianity. Many chiefs and councillors who are polygynists and not members of the Church attend services and consider themselves Christians, so do many ordinary folk" (Colson & Gluckman, 1951, p. 57). Beyond Barosteland, British in Africa created a bifurcated regime of rule in the same way Ottomans did. British categorized locals based on race and tribe to differentiate between those who were subject to civil law (Europeans and other immigrants as racial outsiders) from those who were subject to customary law (Africans as tribal natives) based on race and tribe (Mamdani, 1996).

There were also power (im)balances between the British and local elites in India (especially between 1818 and 1848). The many treatises that were established between princely natives and the British regulating the tribute obligations and the size of the armed forces that they were obliged to provide to the crown in the Subordinate isolation period (1813-1857) are precisely instances of compromises defined by rent sharing and concessions (Iyer, 2010, p. 696). Related to monetary obligations are also the attempts of the British to buy off loyalty of the local rulers in India by offering them money, land and titles.

There is a plethora of examples illustrating the practice of conversion and land tenure heredity as specific concessions that the ruler is making to the ruled that go beyond the Ottoman Empire. The principle and practice of heritability were not alien either to *ikta* of the Mongolian period, or to *pronoia* of the Palaeologan era. De Las Casas (1992) mentions the missionary orders (Franciscan, Dominican and Jesuit) as having an enormous importance in the colonization of the "New World". These orders were traveling to Latin American more or less around the time when Ottomans were strengthening their rule in Albania to spread Christianity as part of the "civilizing" mission of European colonial powers[36]. In a similar way to the Ottomans, conversions occurred first at an elite level, which was the first step in confirming European sovereignty in Latin America.

10 Conclusion

The study asked the question of why empires adopt conciliatory measures in the newly conquered territories and how. The theory proposed in this paper complements literatures suggesting that empires choose strategies of imperial government that prevent the ruled from rebelling and literatures arguing that empires choose institutional arrangements that allow them to maximize their wealth. Going beyond such literatures, the article articulated in detail the micro-foundations that motivate empires to govern

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[36]The fundamental difference between religious conversion in Latin America in the context of Western European imperialism and religious conversion in the Ottoman Empire is the presence of negative constraints. Many of the local populations under European imperialism were forced to convert to Christianity using violent means. In contradistinction, local populations in the Ottoman Empire were converting to Islam by choice or due to positive constraints (e.g. lower taxes and access to high-ranked positions.)

through local elites. It explained two fundamental problems that are fundamental to imperial rule: rent extraction and avoiding rebellions. It also showed how the central power can alternate between policy concessions and rent-sharing, as a result of the central power's need to cooperate and the strength of the indigenous elite.

I argued that empires need to collaborate with the indigenous elites in order to ensure the durability of their rule. The monarch's need to cooperate depends on whether indigenous elites are strong and whether the imperial power is strong enough to quell any potential dissent. In order to motivate indigenous elites to cooperate, the monarch needs to share some rents and enact policies that indigenous elites like. The model featured three equilibria (1) indigenous elites are weak and the monarch chooses policies that maximize his utility and shares no rents with indigenous elites; (2) indigenous elites are strong and the monarch shares some rent and makes some concessions that are high enough to prevent local elites from rebelling; (3) when indigenous elites cannot eliminate the foreign power from their land, but also the foreign power cannot fully eliminate the opposition, the monarch offers few concessions and the the indigenous elites keep rebelling.

To substantiate my claims, I provided evidence using data on land ownership from one of the earliest fiscal registers in the Ottoman Empire (15th century) about Ottoman Albania. Examining the case of the sancak of Arnavıd allowed investigating the conditions that made integration within the Empire possible, while holding many factors constant. I showed that conversion to Islam and protection of the rights of the old local elites were an indication of the local nobles' preference alignments vis a vis the sultan. In the case of local nobles who converted to Islam (close to the sultan), the sultan made more concessions and allowed them to keep a greater share of rent, in contrast to local nobles from old families (far from the sultan). Local elites who converted had on average more revenue and more rent after paying their military obligations. Similarly, local elites who converted possessed many more villages and much greater population to extract taxes from. Despite slightly weaker statistical results, local nobles from old families enjoyed on average fewer rants and revenue and fewer villages and populations assigned to them.

This study explained features of state formation in Albania under the Ottoman Empire. Nevertheless, the intuition of the theoretical framework proposed in this article can be applied to many other cases of imperial rule where the center collaborates with the local elites and cases in which the imperial center needs to find the right balance between rent-extraction and durability of imperial rule.

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Online Appendix

Contents

1 Codebook

The data is obtained by examining closely the original manuscript that I collected from the Ottoman Archives. The registration code for the Ottoman manuscript is BOA, Tapu Defterleri no. 1M (eski 1081; yeni 1081). Arvanya Sancağının has defteri. Hicri Tarih: 835. I also used transliterations by İnalcık (1954), who published the transliterated notebook in 1954. The variables of interest that I used in the analysis are:

Variable	Description
Christian	This is a variable coded indirectly from the notebook (i.e. this information is not directly present in the notebook). It can be 0 if a land (timar) holder is Muslim and 1 if a land holder is Christian. Muslims and Christians in the province of Arnavıd have distinctive names. For example "Mustafa" is a distinctive Muslim name whereas "Dobrile" is a distinctive Christian name.
Converted	This is a variable coded indirectly from the notebook (i.e. this information is not directly present in the notebook). It can be 0 if a land (timar) holder did not convert to Islam and 1 if he did. I coded these based on whether the land owner has a Muslim name and their father has a Christian name. For example, Isa Beğ is Muslim, while the line "veled-i Pavlo Kurtik" indicates that his father is Christian.
Local	This is a variable coded indirectly from the notebook (i.e. this information is not directly present in the notebook). It has value 0 if a land (timar) holder is a local elite and 1 if a land noble comes from Anatolia. This is essentially Christians and people who converted alltogether.
Shared Locality	This is a variable coded as 1 if a timar (locality) is shared and 0 if it is not. This is a variable taken directly from the notebook. The Ottoman words that indicate whether timars share a village or not are *hisse* (spelled حصه), *müşterek* (مشترك) or *hâriç ez defter* (خارج از دفتر)
Income	This represents the total value that a timar is collecting in akçe. The Ottoman word that indicates revenue is *hâsıl* (spelled حاصل). This is a variable that is directly taken from the notebook and it typically appears at the end of a list of incomes from individual localities
Locality revenue	This represents the amount of money a timar is collecting from one locality in akçe. The same word in Ottoman is used for revenue from one locality as in the case of total revenue. This is a variable that is directly taken from the notebook.
Military costs	This variables measures the approximate aggregate costs of the military obligations that the timar needs to fulfill. Military obligations can be categorized as follows: slaves, soldiers, amour and tents. The prices were approximated from Fodor (2009, p. 201). See section on military obligations below.
Rent	This represents the difference between Income and military costs. This is how much the land owner is left with after paying for his military obligations
Keçim	This variable represents the number of horse armors that timar holders need to provide as part of their military obligations towards the Ottoman Empire. The variable is directly taken from the notebook.
Çadir	This variable measures the number of tents that a timar needs to provide as part of their military obligations towards the Ottoman Empire. The variable is directly taken from the notebook.
Günlük	This variable measures the number of tents that a timar needs to provide as part of their military obligations towards the Ottoman Empire. The variable is directly taken from the notebook.

Variable	Description
Hane	This variable measures the number of families within a locality. The variable is directly taken from the notebook.
Bive	This variable measure the number of widows within a locality. The variable is taken directly from the notebook.
Mücerred	The number of bachelors within a locality. The variable is taken directly from the notebook.
Bürüme	The number of plate armors that the land holders need to provide to the Ottoman army. The variable is taken directly from the notebook
Oğlan	The number of boys that a land holder needs to provide to the Ottoman army. The variable is taken directly from the notebook
Nöker	This is a servant to a leader, comparable to *commendatio* or homage of the medieval armies in Europe. The variable is taken directly from the notebook
Tenktür	This is the smallest type of tent that a land holder needs to provide to the Ottoman army. The variable is taken directly from the notebook
Gulam	Number of young servants that the land holders need to provide to the Ottoman army. The variable is taken directly from the notebook
Cebelü	Number of armed retainers that the land holders need to provide to the Ottoman army. The variable is taken directly from the notebook
Kadîmî	This is a variable defining the status of land holder. A kadîmî is land holder belonging to the old nobility. It is coded as 1 if the status "kadîmî" (spelled قديمى) is included in the listing and 0 otherwise. The variable is taken directly from the notebook.

1.1 Military obligations of land owners

The timar system was intended to provide men for the Ottoman army[1], which was possible through a large cavalry that was controlled from the center. The timar holder was a sipahi (soldier) owning a horse, a coat of mail (*cebe*), a bow (*yay*), sword (*kılıç*), shield (*kalkan*) and other weapons. If one's timar was above a 3,000 akçe, the timar also had to wear a *bürüme* instead of cebe, which was a mail and plate armor that was attached to a leather garment and which was covering a greater proportion of that body (Beldiceanu, 1980, pp. 83-84).

Normally, the timar had to bring with him a certain number of armed retainers (*cebelü*) or sets of horse armour (*keçim*). These obligations were determined according to the revenue from his timar[2]. Richer timars were also supposed to bring with them young servants called *gulam* and various tents (*tenktür*[3], *çadır* and *günlük*). Many cebelüs were selected from the timar's sons and relatives, but also sometimes from freed slaves.

Figure 1 shows the military obligations (cebelü, tenktür, bürüme and gulam) of the highest earning timars in the sancak of Arnavıd, together with their position. The graph shows that it is the sancakbeğ - Ali, who has the highest income in the province and who needs to provide the highest number cebelüs to the Ottoman army. Second, Isa Beğ, a local noble who converted to islam, also needs to provide 14 cebelüs and 1 tent. The military obligations that timar holders can be categorized under three rubrics:

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[1] When the sultan was to start a new campaign (typically between March and October), the soldiers possessing land (sipahis) under military commanders (subaşıs) would line up under the command of the provincial governor (sancakbeğ). Troops received no payment for their military services (İnalcık, 1973)

[2] It seems that before the second half of the fifteenth century, there were no laws to specify exactly how many cebelüs, timar holders were supposed to send to the Ottoman army. It was only towards the end of Murad II's reign that the quota of cebelüs started being introduced (Beldiceanu, 1967).

[3] Tenktür was the smallest type of tent used in the Ottoman army (Fodor, 2009, p. 201).

slaves, soldiers, armour and tents.

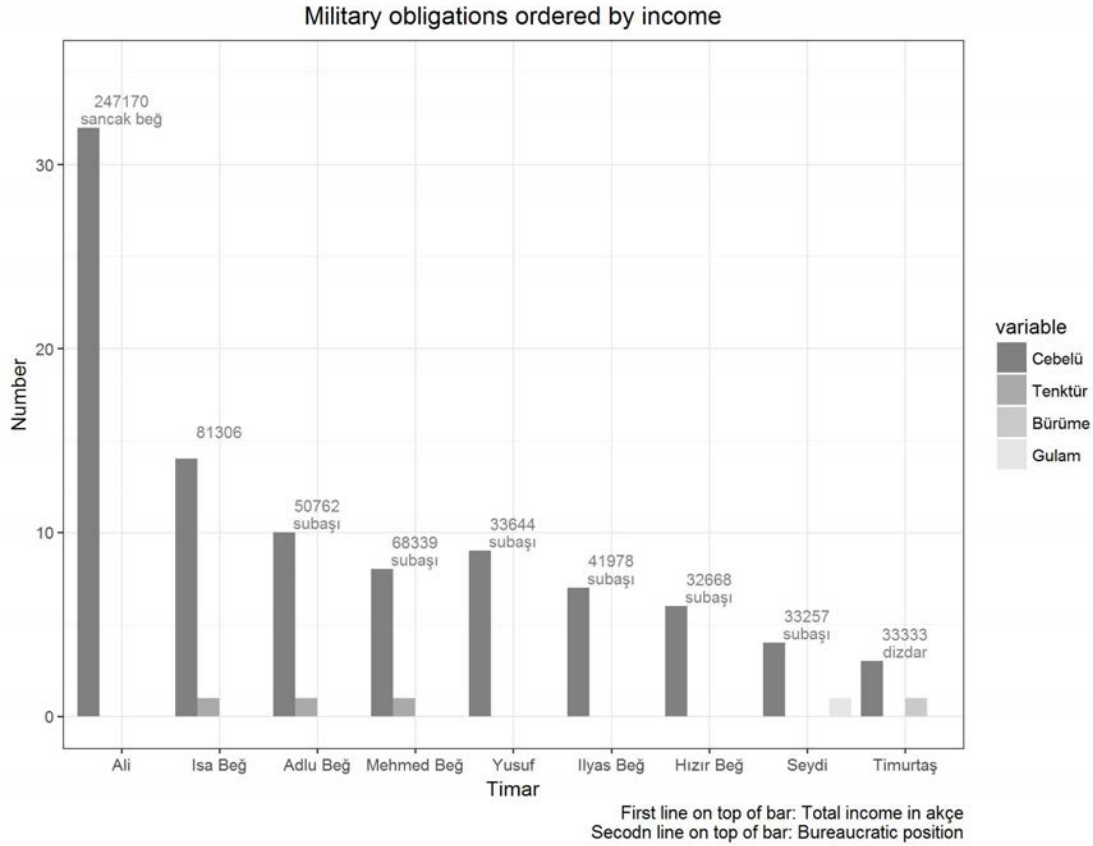Figure 1: The miliary obligations of the top-earning timar holders

Table 2 shows the military obligations for the various income categories of timars. Based on this, I calculate the approximate price for different types of soldiers, listed in table 1. What is striking about this table, which is a direct quote from Fodor (2009, p. 201) is that military obligation do not increase proportional to the amount of revenue collected. For example, comparing the first category (1,000 akçe) to the second category (2,000 akçe) reveals that the price of a gulam (young servant, male slave) is 1,000 akçe. If one compares the fifth category (5,500, 6,000 akçe) to the sixth category (7,500, 8,000), the price of a gulam should be 2,000. The asymmetry in the price for a gulam also becomes apparent when comparing the other categories. Comparing category 4 to 6, where the only difference is 1 cebelü (soldier) as opposed to 2, reveals that the price of a cebelü is now anything between 3,000 and 3,500, which is inconsistent with the price of a cebelü indicated in the first category.The price differential therefore seems to indicate that rich timars do not provide military forces to the Ottoman army in a way that is proportional to their income. In other words, rich land owners are still left with much of their revenue even after fulfilling their military obligations.

On a more general level, a simple OLS regression based on the data collected from the sancak of Arnavıd indicates that timars with military obligations (they are are marked with 1 if they provide keçim, çadır, günlük, nöker, cebelü, tenktür, bürüme or gulam and 0 otherwise) get on average 270 akçe more than timars with no military obligations (table 3, columns 1 and 2). This result is consistent with the historians' view (Delilbaşı & Arıkan, 2001, p. 206). The difference is approximately slightly more than a quarter of a standard deviation away from the mean and is significant at a 10% significance level. Such difference is also diplayed in figure 2. Columns 3-5 of table 3 also display the type of military obligations individually that some of the timar holders had to pay. I add variables iteratively to see

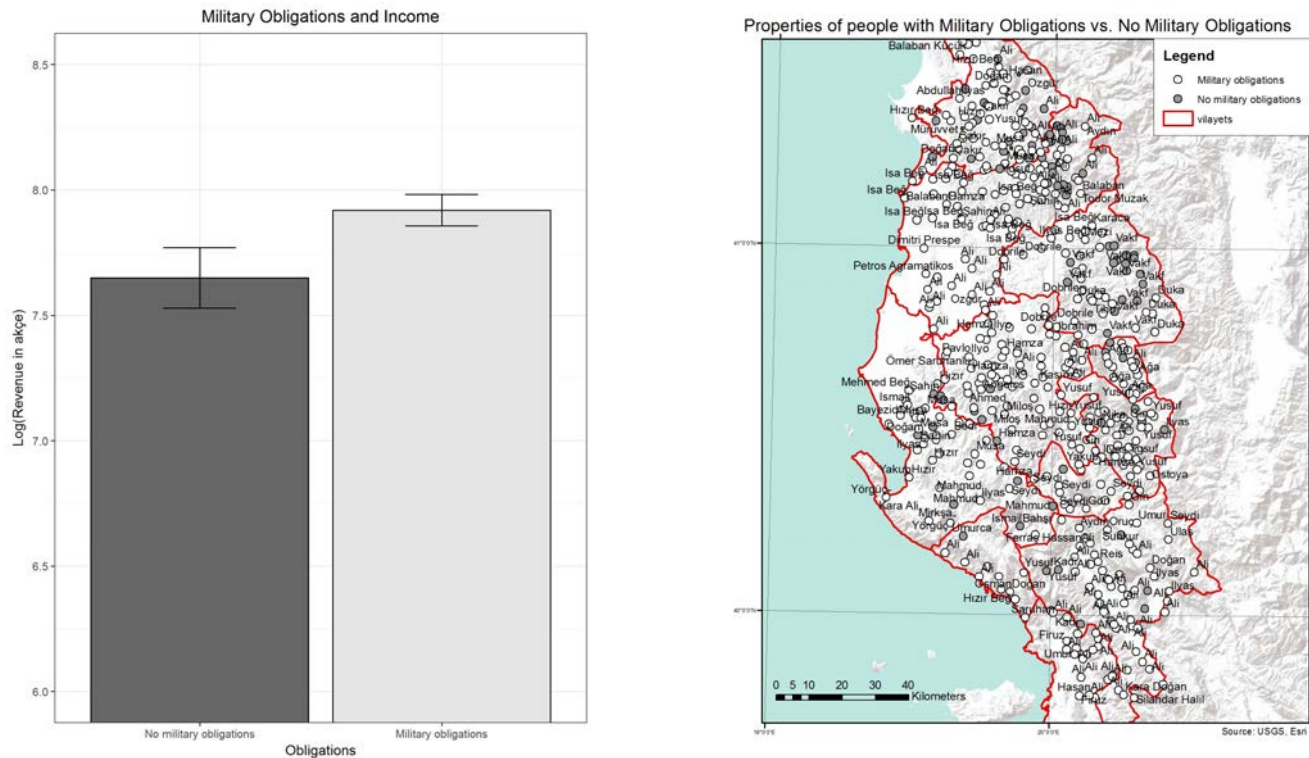Table 1: The obligations of the timariots according to the categories of revenue (mid-fifteenth century)

Category	Item	Price	Meaning	Price Source
Slaves	Gulam	1,000	young servant, male slave	Fodor (2009, p. 201)
	Oğlan	1,000	boy recruited to become part of the Ottoman army, servant	Approximated based on the meaning and the category that is part of.
	Nöker	1,000	servant to a leader, comparable to *commendatio* or homage of the medieval armies in Europe	Approximated based on the meaning and the category that is part of.
Soldiers	Cebelü	1,000	armed retainer	Fodor (2009, p. 201)
Armour	Günlük	1,000	armour	Approximated based on the meaning and the category that is part of.
	Bürüme	1,000	mail and plate armor that was attached to a leather garment and which was covering a great proportion of an Ottoman soldier's body	Fodor (2009, p. 201)
	Keçim	1,500	horse armour	Approximated based on the meaning and the category that is part of.
Tents	Tenktür	1,000	smallest tent in the Ottoman army	Fodor (2009: p.201)
	Çadır	2,000	tent, pavillion	Fodor (2009: p.201)

Table 2: The obligations of the timariots according to the categories of revenue (mid-fifteenth century) Source: Fodor (2009, p. 201)

Category	Income in Akçe	Obligation
1	1,000	Cebelü
2	2,000	Cebelü + 1 gulam
3	3,000	Bürüme + 1 Cebelü + 1 Gulam
4	4,000, 4,500, 5,000	Bürüme + 1 Cebelü + 1 Gulam + 1 Tenktür
5	5,500, 6,000	Bürüme + 2 Cebelü + 1 Tenktür
6	7,500, 8,000	Bürüme + 2 Cebelü + 1 Gulam + 1 Tenktür
7	9,000	Bürüme + 3 Cebelü + 1 Çadır
8	10,000, 10,500, 11,000	Bürüme + 3 Cebelü + 1 Gulam + 1 Çadır
9	12,000	Bürüme + 4 Cebelü + 1 Çadır
10	13,500, 14,000	Bürüme + 4 Cebelü + 1 Gulam + 1 Çadır
11	15,000	Bürüme + 5 Cebelü + 1 Çadır
12	16,500, 17,000	Bürüme + 5 Cebelü + 1 Gulam + 1 Çadır
13	18,000	Bürüme + 6 Cebelü + 1 Çadır
14	19,500, 20,000	Bürüme + 6 Cebelü + 1 Gulam + 1 Çadır

whether the results are sensitive to inclusion and exclusion of variables[4].

Figure 2: Military obligations of timars

Table 3

	Dependent variable:				
	Log Total revenue (in akçe)				
	(1)	(2)	(3)	(4)	(5)
Military Obligations	0.245*	0.245*			
	(0.140)	(0.140)			
Local		−0.001			
		(0.147)			
Keçim			1.263***		1.124**
			(0.429)		(0.482)
Çadir			1.149***	1.918***	
			(0.228)	(0.165)	
Günlük			−2.259**	1.012	
			(1.098)	(0.730)	
Nöker			−0.163	−0.100	
			(0.633)	(0.660)	
Cebelü			0.074		0.144***
			(0.046)		(0.038)
Tenktür			0.459***	0.780***	
			(0.158)	(0.149)	
Bürüme			0.483***	0.332***	
			(0.099)	(0.098)	
Gulam			−0.014	−0.075	
			(0.082)	(0.085)	
Constant	7.662***	7.662***	7.481***	7.569***	7.663***
	(0.125)	(0.127)	(0.062)	(0.055)	(0.055)
Observations	269	269	269	269	269
R^2	0.011	0.011	0.554	0.509	0.357
Adjusted R^2	0.008	0.004	0.540	0.498	0.352

Note: Heteroscedasticity robust standard errors in parantheses. $p<0.1$; $p<0.05$; $p<0.01$

A7

2 Summary Statistics

Table 4

Statistic	N	Mean	St. Dev.	Min	Max
Christian	275	0.149	0.357	0	1
Converted	275	0.011	0.104	0	1
Local	275	0.160	0.367	0	1
Shared Locality	275	0.469	0.500	0	1
Income	260	5,311.081	17,383.510	75	247,170
Locality revenue	256	1,307.328	1,208.411	50	12,500
Keçim	275	0.029	0.189	0	2
Çadir	275	0.065	0.262	0	2
Günlük	275	0.004	0.060	0	1
Hane	258	18.973	20.351	1	250
Bive	111	2.514	9.020	0	96
Mücerred	19	2.895	3.195	1	13
Log(Income)	260	7.847	0.934	4.317	12.418
Bürüme	275	0.276	0.448	0	1
Oglan	275	0.029	0.168	0	1
Nöker	275	0.004	0.060	0	1
Tenktür	275	0.091	0.288	0	1
Gulam	275	0.338	0.474	0	1
Cebelü	275	1.076	2.424	0	32
Kadimi	275	0.065	0.248	0	1

3 Robustness Checks

3.1 Converts to Islam compared to oher Muslims

Table 5

	Dependent variable:		
	Revenue	Military Costs	Rent
	(1)	(2)	(3)
Converted	2.401***	0.056	1.269***
	(0.519)	(0.051)	(0.433)
Constant	7.844***	7.545***	9.082***
	(0.062)	(0.051)	(0.050)
Observations	219	181	219
R^2	0.086	0.0001	0.039
Adjusted R^2	0.082	−0.006	0.035

Notes: Coefficients and robust standard errors in parantheses from OLS regression. *p<0.1; **p<0.05; ***p<0.01. All the dependent variables are logged. The models display coefficients using thel sample of muslims (i.e. both indigenous elites and foreign). *Revenue* is taken directly from the fiscal register. *Military costs* are sums of the prices of military obligations that nobles have to the sultan. *Rent* represents the difference between income and military costs.

Table 6

	Dependent variable:		
	Revenue	Military Costs	Rent
	(1)	(2)	(3)
Kadîmî	−0.543*	1.209	−0.174***
	(0.302)	(0.768)	(0.059)
Constant	7.885***	7.526***	9.102***
	(0.065)	(0.048)	(0.051)
Observations	219	181	219
R^2	0.004	0.052	0.001
Adjusted R^2	−0.0002	0.046	−0.004

Notes: Coefficients and robust standard errors in parantheses from OLS regression. *p<0.1; **p<0.05; ***p<0.01. All the dependent variables are logged. The models display coefficients using the sample of muslims(i.e. both foreign and indigenous elites). *Revenue* is taken directly from the fiscal register. *Military costs* are sums of the prices of military obligations that nobles have to the sultan. *Rent* represents the difference between income and military costs.

3.2 Converts to Islam and Military Obligations

Table 7 lists different models with different variables and different samples to see whether the results are robust in order to examine the relationship between religious conversion and income. Colums 1 through 5 display the impact of having converted or not, together with the other variables that measure the military obligations that local nobles have (the number of soldiers that timar holders need to provide when the Ottomans are at war) using the total sample of timars (both Ottoman and locals), while columns 6 through 11 restrict the sample to local nobles only. The results indicate that having converted makes a difference in the amount of money the timar can collect from his assigned villages. Specifically, columns 1-10, which use the entire sample of local nobles, indicate that having converted increases the amount of money collected by any amount between 132 (column 2) and 289 akçe (column 8). This is almost a third of a standard deviation or almost a third of the price of an armed retainer (cebelü). Similarly columns 11-16 indicate that when comparing locals who converted to locals who did con convert, nobles who converted collect anything between 182 akçe (colum 15) and 256 akçe (column 11) more, ceteris paribus. Therefore, while the coefficient for the variable that measures whether a local nobles converted or not changes slightly depending on what independent variables are included in the model, the coefficient is always positive and statistically significant[5]. These differences are also visually depicted in figure 3.

Figure 3: Conversion

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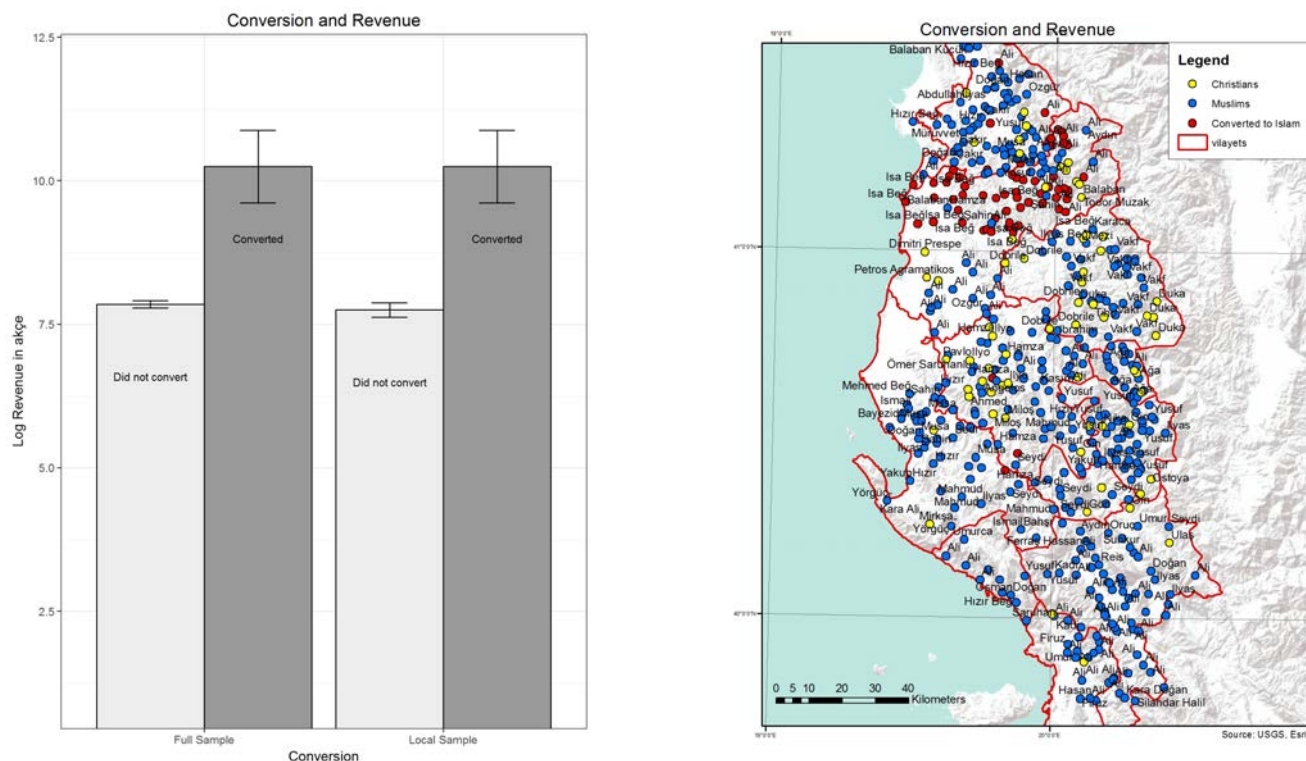
[5] While interaction effects between having converted and the number of tenktürs or having converted and having converted and the number of cebelü are the statistically significant, the few observations for timars who converted prevent reaching any meaningful conclusions about such interaction

Table 7

| | Dependent variable: Log Total revenue (in akçe) | | | | | | | | | | | | | | | |
| | Full sample | Full sample | Full sample | Full sample | Full sample | Full sample | Full sample | Full sample | Full sample | Full sample | Local sample | Local sample | Local sample | Local sample | Local sample | Local sample |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Converted	1.518*** (0.376)	1.329*** (0.376)	1.331*** (0.377)		1.896*** (0.447)	1.738*** (0.443)	1.603*** (0.473)	2.896*** (0.613)	1.603*** (0.473)	1.986*** (0.475)	2.556*** (0.504)	2.026*** (0.599)	2.047*** (0.599)	1.954*** (0.501)	1.820*** (0.585)	2.552*** (0.509)
Keçim	1.822*** (0.338)	1.527*** (0.348)	1.553*** (0.353)	1.252*** (0.445)	1.970*** (0.350)	1.680*** (0.358)	1.246*** (0.436)	1.224*** (0.428)	1.246*** (0.436)	1.272*** (0.432)		1.591 (1.014)	0.721 (1.314)	1.744 (1.123)		
Çadir	1.218*** (0.207)	1.320*** (0.207)	1.313*** (0.208)	1.133*** (0.237)	1.223*** (0.207)	1.328*** (0.206)	1.205*** (0.234)	1.125*** (0.230)	1.205*** (0.234)	1.112*** (0.233)			0.870 (0.837)	0.312 (0.711)		
Giululk	−1.159 (0.825)	−0.770 (0.824)	−0.794 (0.827)	−2.418** (1.118)	−1.461* (0.845)	−1.089 (0.841)	−1.413 (1.136)	−2.450*** (1.126)	−1.413 (1.136)	−2.811** (1.200)						
Birime	0.655*** (0.089)	0.512*** (0.101)	0.514*** (0.101)	0.497*** (0.103)	0.651*** (0.089)	0.504*** (0.100)	0.520*** (0.101)	0.515*** (0.099)	0.520*** (0.101)	0.502*** (0.100)				0.930*** (0.217)		
Oglan	0.479** (0.227)	0.498** (0.224)	0.511** (0.226)	0.515** (0.230)	0.481** (0.226)	0.501** (0.223)	0.520** (0.226)	0.536** (0.222)	0.520** (0.226)	0.527** (0.224)						
Tenktür		0.453*** (0.156)	0.442*** (0.158)	0.454*** (0.166)	0.467*** (0.156)	0.467*** (0.156)	0.414** (0.165)	0.429*** (0.161)	0.414** (0.165)	0.384** (0.162)						
Gulam			0.037 (0.083)	0.030 (0.085)			0.042 (0.083)	0.048 (0.082)	0.042 (0.083)	0.030 (0.082)					0.196 (0.270)	0.120 (0.281)
Cebeli				0.082* (0.047)			0.046 (0.048)	0.086* (0.047)	0.046 (0.048)	0.095* (0.050)					0.162** (0.072)	
Converted*Keçim					−1.276 (0.821)											
Converted*Çadir						−1.398* (0.809)										
Converted*Birime							−1.000 (0.786)									
Converted*Tenktür								−2.670*** (0.785)								
Converted*Gulam									−1.000 (0.786)							
Converted*Cebeli										−0.168** (0.065)						
Constant	7.495*** (0.048)	7.494*** (0.047)	7.481*** (0.056)	7.438*** (0.064)	7.493*** (0.048)	7.492*** (0.047)	7.448*** (0.063)	7.412*** (0.063)	7.448*** (0.063)	7.418*** (0.064)	7.689*** (0.131)	7.689*** (0.129)	7.668*** (0.131)	7.295*** (0.140)	7.497*** (0.165)	7.654*** (0.156)
Observations	260	260	260	260	260	260	260	260	260	260	44	44	44	44	44	44
Adjusted R²	0.544	0.557	0.556	0.539	0.547	0.561	0.557	0.574	0.557	0.566	0.366	0.387	0.388	0.573	0.411	0.353

*Note:* Heteroscedasticity robust standard errors in parantheses. p<0.1; p<0.05; p<0.01

A11

3.3 Income of nobles from old families (*kadimi*)

The results displayed in table 8 indicate that kadîmîs have indeed less income compared to non-kadîmîs. Specifically, kadîmîs make anything between 28 (column 1) and 91 (column 8) akçe less compared to non-kadîmîs, ceteris paribus, when looking at all timars[6]. These differences are significant at a 10% significance level. When examining only local timars, kadîmîs make anything between 51 (column 11) and 69 (column 13) less compared to non-kadîmîs, ceteris paribus. The interaction between kadîmîs and gulam on the one hand and the interaction between kadîmîs and cebelü on the other hand, seem to have positive and significant effect on income collected. The interpretation would be that the income of the timar is increasing, the more soldiers the timar is providing the Ottoman army with (cebelü and gulam). The effect is small and only significant at at 10% significance level. The existence of interaction effects is indicative of the potential trade-offs between the rents and concessions that the kadîmîs had to make.

Figure 4: Kadîmîs and military responsibilities

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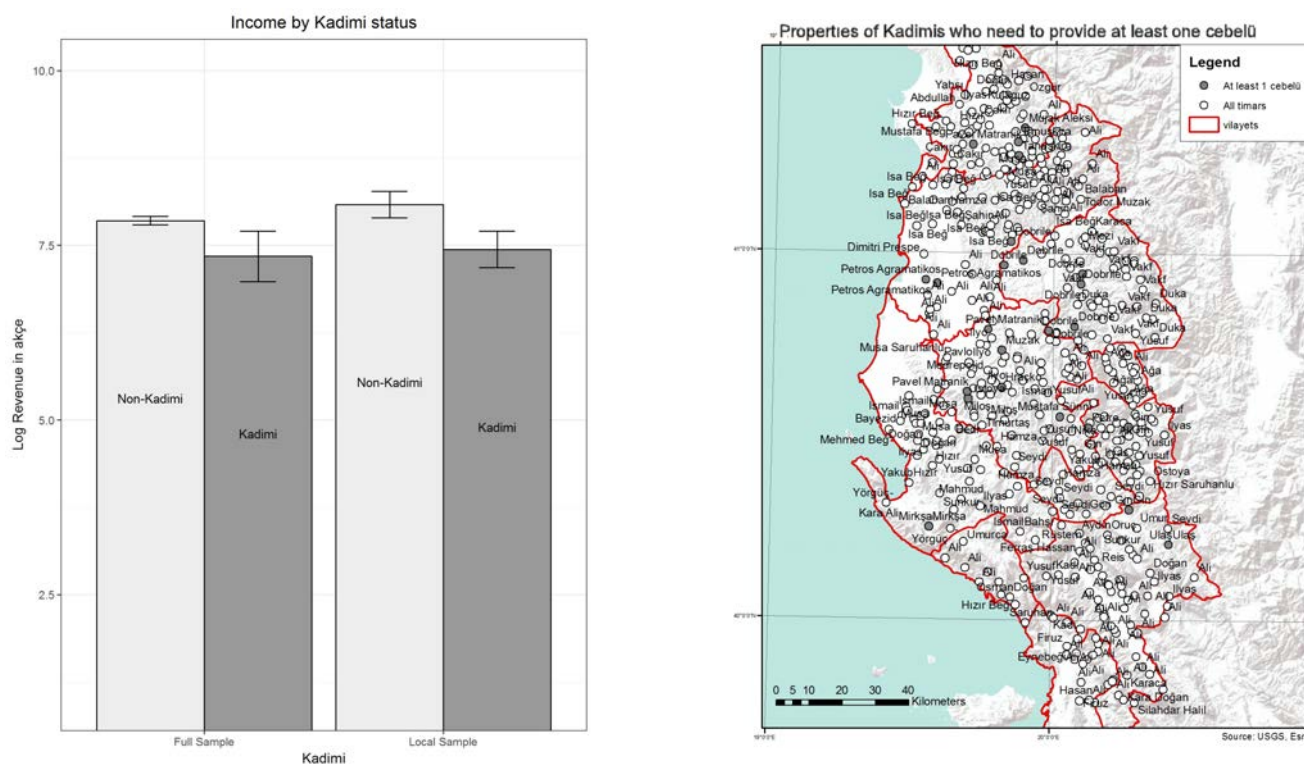
[6] The standard deviation for the log income variable is 934 as indicated by the summary statistics table in the appendix.

Table 8

Dependent variable:

Log Total revenue (in akçe)

	Full sample (1)	Full sample (2)	Full sample (3)	Full sample (4)	Full sample (5)	Full sample (6)	Full sample (7)	Full sample (8)	Local sample (9)	Local sample (10)	Local sample (11)	Local sample (12)	Local sample (13)
Kadimî	−0.289*** (0.159)	−0.300* (0.155)	−0.302* (0.155)		−0.434** (0.182)	−0.333* (0.165)	−0.557*** (0.206)	−0.910** (0.366)	−0.643* (0.325)	−0.528* (0.288)	−0.506* (0.292)	−0.588** (0.277)	−0.685** (0.331)
Keçim	2.085*** (0.340)	1.685*** (0.351)	1.712*** (0.356)	1.252*** (0.445)	1.202*** (0.443)	1.238*** (0.443)	1.215*** (0.441)	1.299*** (0.442)		3.339*** (0.916)	2.768** (1.282)		
Çadir	1.178*** (0.213)	1.303*** (0.211)	1.296*** (0.212)	1.133*** (0.237)	1.106*** (0.236)	1.098*** (0.237)	1.110*** (0.235)	1.119*** (0.236)			0.592 (0.923)		
Günlük	−1.634* (0.836)	−1.082 (0.832)	−1.109 (0.835)	−2.418** (1.118)	−2.495** (1.111)	−2.475** (1.118)	−2.407** (1.107)	−2.312** (1.109)					
Birûne	0.668*** (0.091)	0.492*** (0.102)	0.494*** (0.103)	0.497*** (0.103)	0.466*** (0.104)	0.495*** (0.102)	0.497*** (0.102)	0.503*** (0.102)					
Oglan	0.446* (0.233)	0.470** (0.228)	0.484** (0.230)	0.515** (0.230)	0.490* (0.229)	0.493** (0.230)	0.478** (0.228)	0.491** (0.228)					
Tenktür		0.554*** (0.156)	0.542*** (0.159)	0.454*** (0.166)	0.442*** (0.165)	0.436*** (0.171)	0.463*** (0.164)	0.448*** (0.164)					
Gulam			0.040 (0.085)	0.030 (0.085)	0.040 (0.084)	0.038 (0.085)	−0.008 (0.087)	0.034 (0.084)				0.366 (0.288)	0.269 (0.344)
Cebeli				0.082* (0.047)	0.089* (0.047)	0.086* (0.047)	0.084* (0.047)	0.076 (0.047)				0.276*** (0.063)	
Kadimî*Birûne					0.444 (0.345)								
Kadimî*Tenktür						0.209 (0.497)							
Kadimî*Gulam							0.563* (0.310)						
Kadimî*Cebeli								0.722* (0.400)					
Constant	7.527*** (0.051)	7.524*** (0.050)	7.510*** (0.058)	7.438*** (0.064)	7.463*** (0.065)	7.458*** (0.065)	7.473*** (0.065)	7.464*** (0.065)	8.082*** (0.190)	7.967*** (0.170)	7.946*** (0.174)	7.641*** (0.194)	8.017*** (0.208)
Observations	260	260	260	260	260	260	260	260	44	44	44	44	44
Adjusted R²	0.521	0.542	0.541	0.539	0.546	0.543	0.549	0.549	0.063	0.275	0.265	0.342	0.054

Note: Heteroscedasticity robust standard errors in parentheses. $p<0.1$; $p<0.05$; $p<0.01$

3.4 Locals-Foreign Land Owners Comparison

Dependent variable: Log Total revenue (in akçe)

	Full sample (1)	Full sample (2)	Full sample (3)	Full sample (4)	Full sample (5)	Full sample (6)	Full sample (7)	Full sample (8)	Full sample (9)	Full sample (10)	Full sample (11)	Full sample (12)	Full sample (13)	Full sample (14)	Full sample (15)	Full sample (16)	Full sample (17)
Local	0.019 (0.155)	0.014 (0.126)	0.028 (0.125)	0.063 (0.119)	0.035 (0.116)	−0.057 (0.108)	−0.040 (0.108)	−0.035 (0.109)	−0.015 (0.108)	−0.013 (0.108)		−0.009 (0.110)	0.012 (0.111)	−0.156 (0.136)	−0.034 (0.115)	−0.090 (0.130)	−0.007 (0.125)
Local*Cebelü																	−0.005 (0.057)
Cebelü		0.220*** (0.019)	0.137*** (0.039)	0.062 (0.039)	0.166*** (0.050)	0.121*** (0.046)	0.124*** (0.046)	0.122*** (0.046)	0.083* (0.048)	0.082* (0.048)	0.082* (0.048)	0.086* (0.052)	0.096* (0.049)	0.086* (0.048)	0.080* (0.048)	0.085* (0.048)	0.084 (0.052)
Local*Keçim												−0.158 (0.767)					
Local*Çadır													−0.573 (0.514)				
Local*Bürüme														0.388* (0.222)			
Local*Tenktür															0.188 (0.342)		
Local*Gulam																0.245 (0.231)	
Keçim			1.211** (0.496)		0.600 (0.471)	1.324*** (0.448)	1.310*** (0.445)	1.320*** (0.447)	1.235*** (0.442)	1.257*** (0.447)	1.258*** (0.447)	1.257*** (0.448)	1.201*** (0.450)	1.208*** (0.447)	1.261*** (0.448)	1.220*** (0.449)	1.254*** (0.449)
Çadır				1.334*** (0.247)	1.111*** (0.251)	0.936*** (0.233)	0.943*** (0.232)	0.944*** (0.232)	1.133*** (0.239)	1.130*** (0.240)	1.132*** (0.238)	1.122*** (0.243)	1.162*** (0.241)	1.137*** (0.239)	1.131*** (0.240)	1.139*** (0.240)	1.127*** (0.242)
Günlük					−3.904*** (1.164)	−3.413*** (1.077)	−3.473*** (1.071)	−3.454*** (1.074)	−2.412** (1.124)	−2.424** (1.127)	−2.413** (1.121)	−2.531** (1.243)	−2.807** (1.178)	−2.490** (1.123)	−2.370** (1.133)	−2.469** (1.127)	−2.475** (1.254)
Bürüme						0.626*** (0.093)	0.634*** (0.093)	0.637*** (0.093)	0.500*** (0.105)	0.501*** (0.105)	0.499*** (0.104)	0.499*** (0.105)	0.497*** (0.105)	0.414*** (0.116)	0.504*** (0.105)	0.496*** (0.105)	0.500*** (0.105)
Oglan							0.484** (0.232)	0.484** (0.233)	0.501** (0.230)	0.512** (0.232)	0.514** (0.231)	0.513** (0.233)	0.517** (0.232)	0.502** (0.231)	0.508** (0.233)	0.498** (0.233)	0.512** (0.233)
Nöker								−0.232 (0.656)	−0.135 (0.648)	−0.128 (0.649)	−0.138 (0.643)	−0.127 (0.651)	−0.137 (0.649)	−0.305 (0.655)	−0.115 (0.651)	−0.060 (0.653)	−0.132 (0.652)
Tenktür									0.459*** (0.165)	0.451*** (0.167)	0.452*** (0.167)	0.452** (0.168)	0.454*** (0.167)	0.471*** (0.167)	0.415** (0.180)	0.456*** (0.167)	0.452*** (0.168)
Gulam										0.029 (0.085)	0.030 (0.085)	0.029 (0.086)	0.023 (0.086)	0.026 (0.085)	0.030 (0.086)	−0.010 (0.093)	0.029 (0.086)
Constant	7.814*** (0.064)	7.599*** (0.056)	7.652*** (0.059)	7.652*** (0.056)	7.575*** (0.060)	7.454*** (0.058)	7.431*** (0.059)	7.431*** (0.059)	7.451*** (0.059)	7.441*** (0.066)	7.439*** (0.065)	7.438*** (0.068)	7.429*** (0.067)	7.459*** (0.067)	7.445*** (0.067)	7.454*** (0.068)	7.439*** (0.068)
Observations	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260
Adjusted R²	−0.004	0.337	0.350	0.415	0.437	0.520	0.527	0.525	0.537	0.536	0.538	0.534	0.536	0.540	0.534	0.536	0.534

Note: Heteroscedasticity robust standard errors in parentheses. $p<0.1$; $p<0.05$; $p<0.01$

3.5 Christian-Muslim Land Owners Comparison

								Dependent variable: Log Total revenue (in akçe)								
	Full sample (1)	Full sample (2)	Full sample (3)	Full sample (4)	Full sample (5)	Full sample (6)	Full sample (7)	Full sample (8)	Full sample (9)	Full sample (10)	Full sample (11)	Full sample (12)	Full sample (13)	Full sample (14)	Full sample (15)	Full sample (16)
Christian	−0.188 (0.159)	−0.113 (0.129)	−0.097 (0.128)	−0.069 (0.122)	−0.069 (0.120)	−0.167 (0.111)	−0.150 (0.111)	−0.147 (0.112)	−0.117 (0.111)	−0.115 (0.111)		−0.095 (0.113)	−0.299** (0.139)			
Christian*Cebelü		0.219*** (0.019)	0.138*** (0.039)	0.064 (0.039)	0.168*** (0.049)	0.119** (0.046)	0.123*** (0.046)	0.122*** (0.046)	0.084* (0.048)	0.084* (0.048)	0.082* (0.048)	0.084* (0.048)	0.086* (0.047)	0.080* (0.048)	0.085* (0.048)	0.084 (0.052)
Cebelü												−0.782 (0.680)				
Christian*Çadır													0.499** (0.227)			
Christian*Bürüme														0.188 (0.342)		
Christian*Tenktür															0.245 (0.231)	
Christian*Gulam			1.187** (0.496)	0.743 (0.478)	0.582 (0.471)	1.320*** (0.446)	1.306*** (0.444)	1.312*** (0.445)	1.231*** (0.441)	1.249*** (0.447)	1.258*** (0.447)	1.172*** (0.451)	1.176*** (0.444)	1.261*** (0.448)	1.220*** (0.449)	1.254*** (0.449)
Keçim				1.321*** (0.247)	1.100*** (0.250)	0.927*** (0.232)	0.933*** (0.230)	0.933*** (0.231)	1.116*** (0.238)	1.113*** (0.239)	1.132*** (0.238)	1.191*** (0.248)	1.128*** (0.237)	1.131*** (0.240)	1.139*** (0.240)	1.127*** (0.242)
Çadır					−3.929*** (1.161)	−3.360*** (1.071)	−3.430*** (1.065)	−3.420*** (1.068)	−2.429** (1.118)	−2.440** (1.121)	−2.413** (1.121)	−2.445** (1.120)	−2.408** (1.113)	−2.370** (1.133)	−2.469** (1.127)	−2.475** (1.254)
Günlük						0.637*** (0.093)	0.646*** (0.092)	0.648*** (0.093)	0.514*** (0.105)	0.515*** (0.105)	0.499*** (0.104)	0.518*** (0.105)	0.407*** (0.115)	0.504*** (0.105)	0.496*** (0.105)	0.500*** (0.105)
Bürüme							0.467** (0.231)	0.467** (0.232)	0.485** (0.229)	0.494** (0.232)	0.514** (0.231)	0.496** (0.232)	0.483** (0.230)	0.508** (0.233)	0.498** (0.233)	0.512** (0.233)
Oglan								−0.147 (0.654)	−0.061 (0.647)	−0.055 (0.648)	−0.138 (0.643)	−0.077 (0.648)	−0.285 (0.652)	−0.115 (0.651)	−0.060 (0.653)	−0.132 (0.652)
Nöker									0.443*** (0.165)	0.436*** (0.167)	0.452*** (0.167)	0.436*** (0.167)	0.472*** (0.167)	0.415** (0.180)	0.456*** (0.167)	0.452*** (0.168)
Tenktür														−0.034 (0.115)	−0.090 (0.130)	−0.007 (0.125)
Gulam																−0.005 (0.057)
Constant										0.024 (0.085)	0.030 (0.085)	0.018 (0.085)	0.024 (0.085)	0.030 (0.086)	−0.010 (0.093)	0.029 (0.086)
Constant	7.877*** (0.063)	7.620*** (0.056)	7.671*** (0.059)	7.672*** (0.056)	7.591*** (0.060)	7.469*** (0.058)	7.447*** (0.059)	7.447*** (0.059)	7.464*** (0.059)	7.456*** (0.067)	7.439*** (0.065)	7.454*** (0.067)	7.479*** (0.067)	7.445*** (0.067)	7.454*** (0.068)	7.439*** (0.068)
Observations	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260	260
Adjusted R²	0.002	0.339	0.351	0.415	0.438	0.524	0.530	0.528	0.539	0.538	0.538	0.538	0.545	0.534	0.536	0.534
Note:														Heteroscedasticity robust standard errors in parentheses. p<0.1; p<0.05; p<0.01		

4 Statistical Diagnostics

Table 9: Diagnostics for Military Obligations Regressions

	Variable Sq. VIF
Keçim	2.146
Çadir	1.618
Günlük	1.753
Nöker	1.010
Cebelü	2.978
Tenktür	1.246
Bürüme	1.181
Gulam	1.029

Table 10: Variance Inflation Factors for models where Christians are included

	Variable Sq. VIF
Christian	2.195
Cebelü	1.622
Keçim	1.761
Çadir	1.183
Günlük	1.012
Bürüme	1.011
Oglan	1.247
Nöker	1.035
Tenktür	2.994
Gulam	2.195

Table 11: Variance Inflation Factors for models where Locals are included

	Variable Sq. VIF
Local	1.028
Cebelü	3.009
Keçim	2.197
Çadir	1.630
Günlük	1.768
Bürüme	1.193
Oglan	1.016
Nöker	1.019
Tenktür	1.249
Gulam	1.036

Table 12: Variance Inflation Factors for models where people who converted are included

	Variable Sq. VIF
Converted	1.031
Keçim	1.770
Çadir	1.446
Günlük	1.324
Bürüme	1.176
Oglan	1.012
Tenktür	1.203
Gulam	1.035

Table 13: Variance Inflation Factors for models where kadîmîs are included

	Variable Sq. VIF
Keçim	2.193
Çadir	1.622
Günlük	1.761
Bürüme	1.174
Oglan	1.013
Tenktür	1.245
Gulam	1.034
Cebelü	2.993

5 Plots

5.1 Coefficient Plots

Figure 5: Regression results
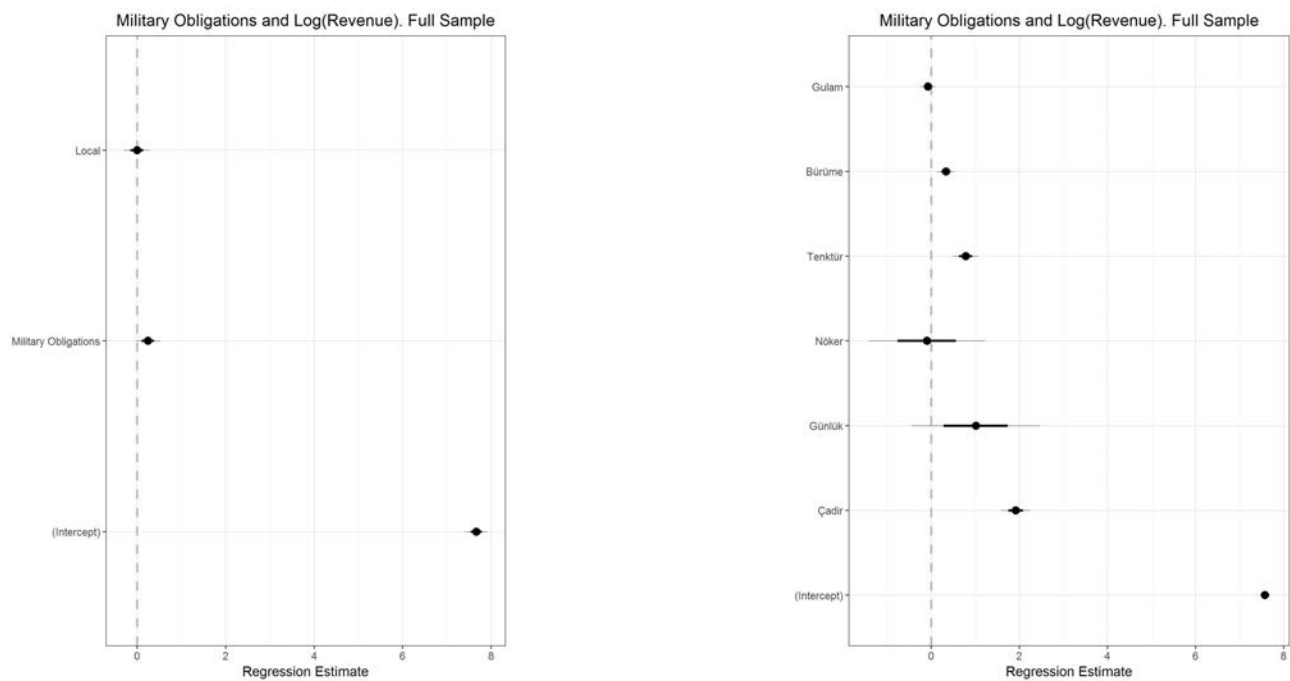
Figure 6: Regression results
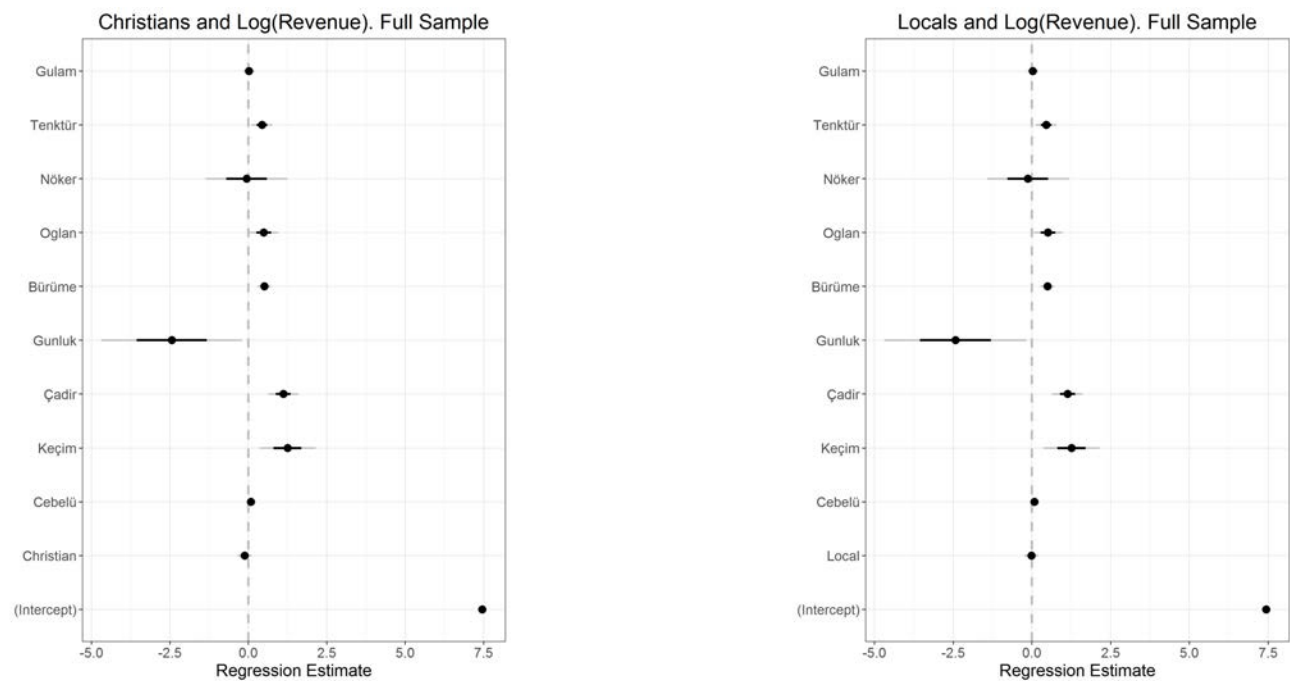
Figure 7: Regression results

Conversion and Log(Revenue). Full Sample

Locals and Log(Revenue). Local Sample

Figure 8

Kadimis and Log(Revenue). Full Sample
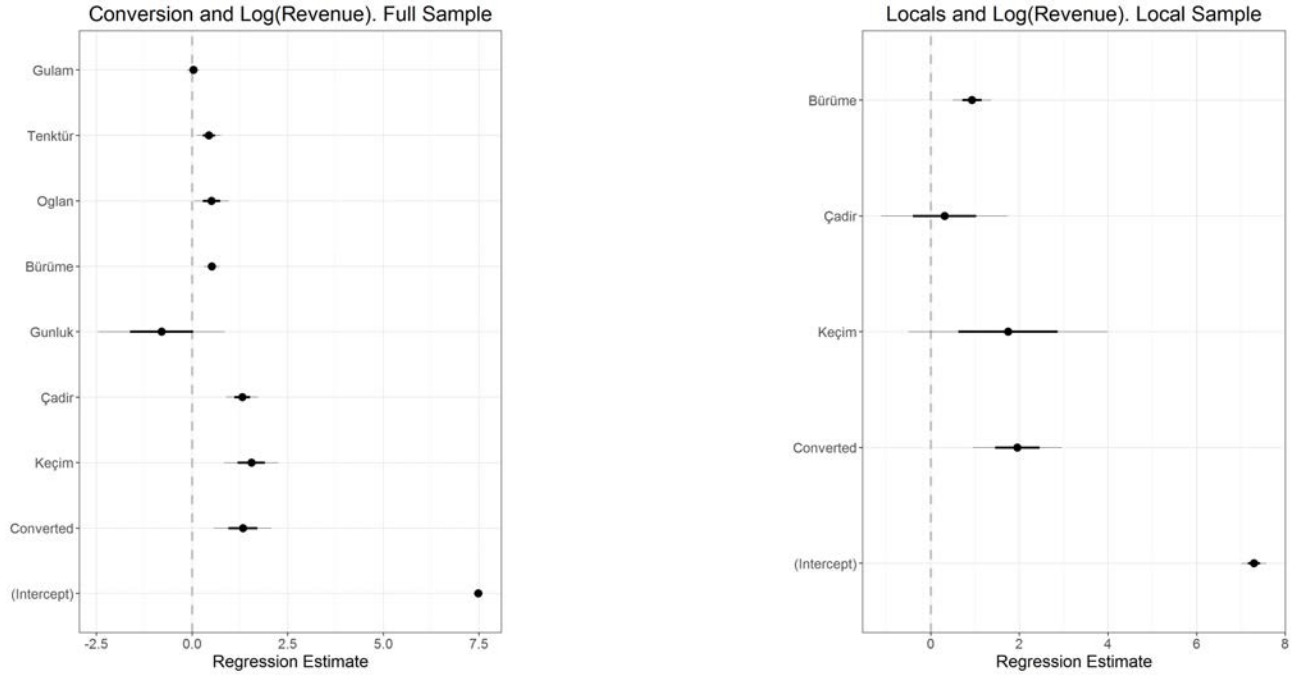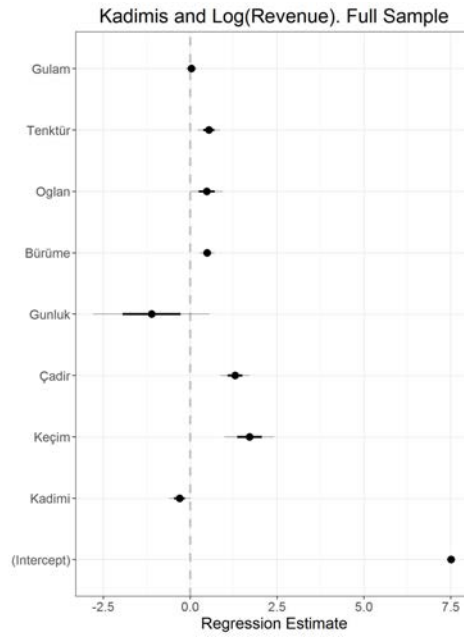
5.2 Scatter Plots

Figure 9: Relationship between revenue and different types of soldiers provided to the Ottoman Army
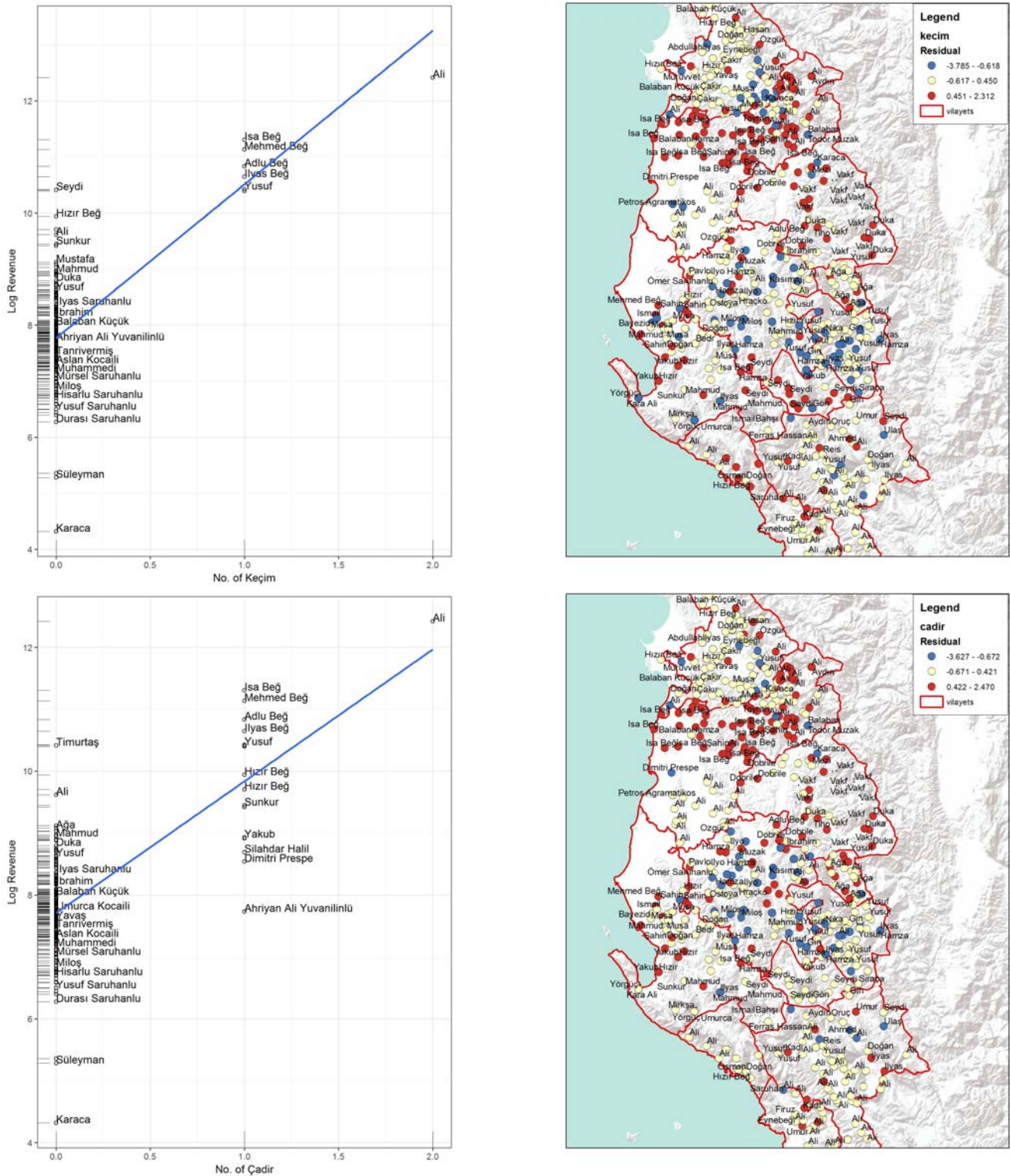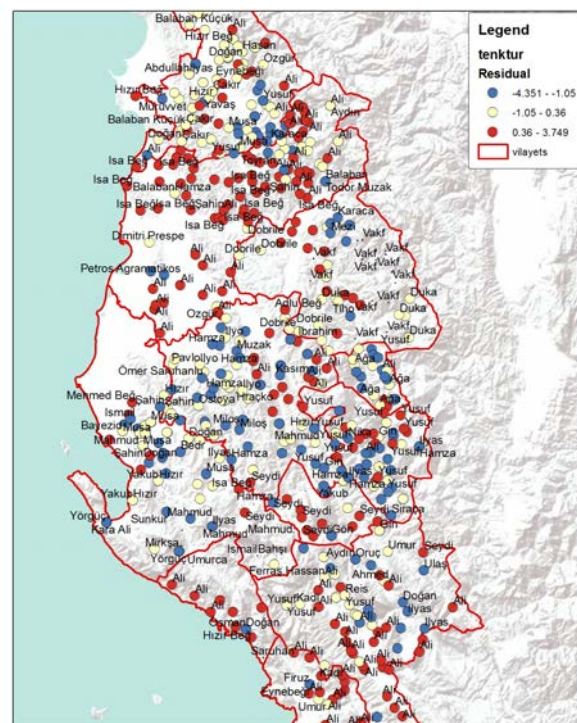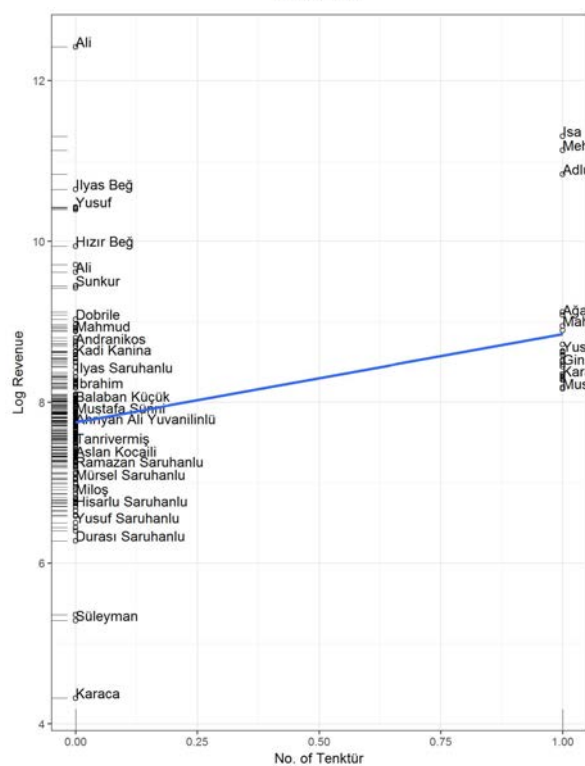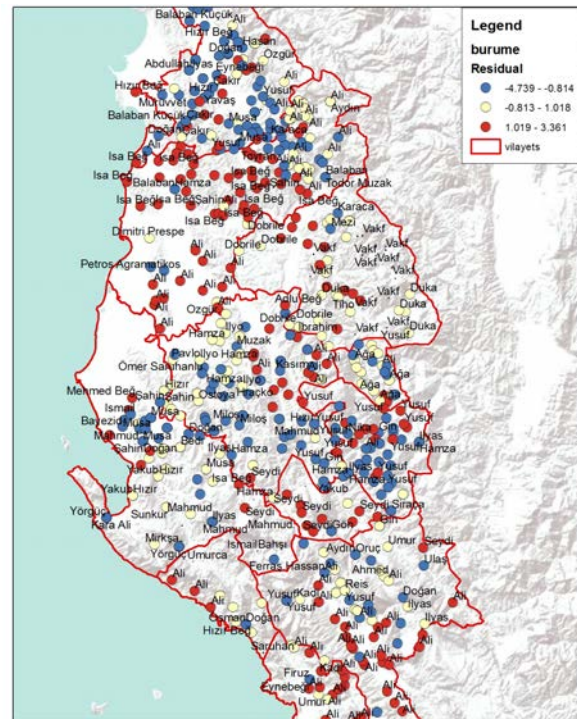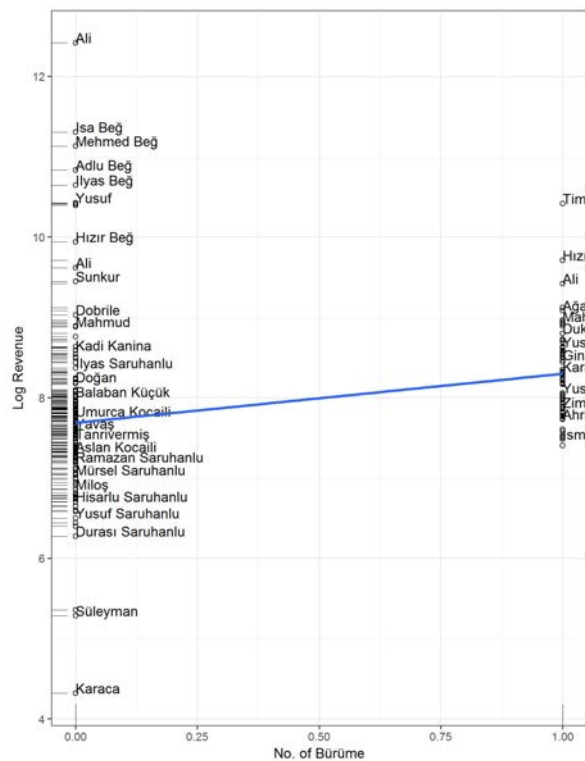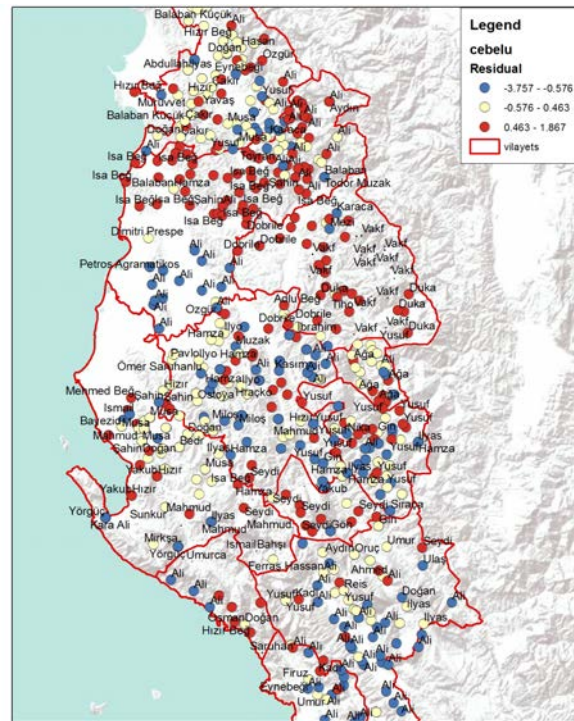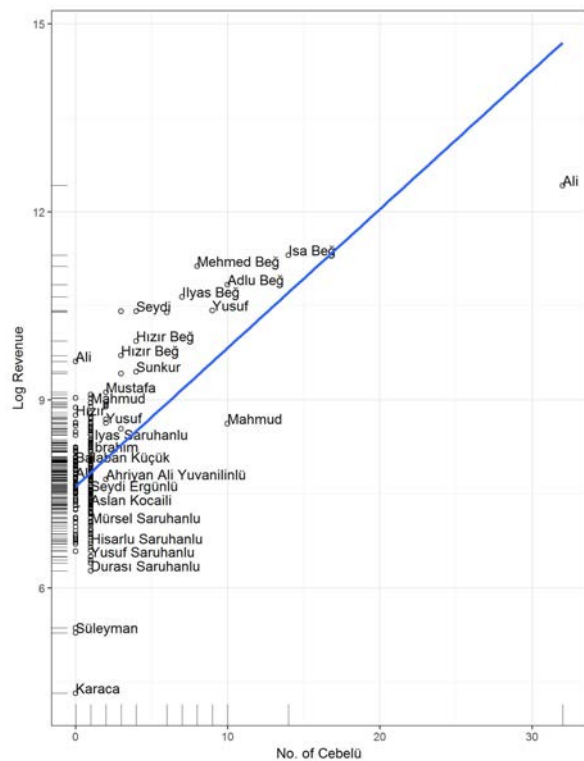
6 Cartography

6.1 Map of Europe in 15th Century

The map of central and Eastern Europe shown in the introduction to thie arcticle was taken from the "Historical Atlas of Central and Eastern Europe: 1326-1922" (Popescu, 2017), which is a project that follows the territorial changes from 1326 to 1922 of various historical sovereign entities. The GIS data was created using tens of historical maps and atlases in English, German, French, Serbo-Croatian, Hungarian, Italian, Turkish, Ottoman Turkish, Latin, etc. Different maps were compared against each other, which is why this data is probably some of the most accurate compared to many maps and the few sources online. Some of the political entities that are present in this project are:

- The Ottoman Empire
- The Republic of Venice
- The Habsburg Empire and its components: Bohemia, Hungary, Habsburg
- The Poland-Lithuania Commonwealth and its components: Poland and Lithuania
- Tsardom of Russia (European border changes)
- Various political rules of the Aegean Islands

In order to create the map of Central and Eastern Europe for 1442, I used the following sources: Balta (1989, 1992); Barnes (2015); Nüssli (2002); İnalcık (1954); Kiel (1989); Magocsi (2002); Pitcher (1972); Sarınay *et al.* (2007); Ward *et al.* (1912).

Figure 10

Central and Eastern Europe in 1442

Legend

- ☐ Sancak of Arnavıd
- ☐ Venice
- ☐ Hungary
- ☐ Bohemia
- ☐ Habsburg
- ☐ Lithuania
- ☐ Poland
- ☐ Ottoman

087.575 350 525 700
Kilometers
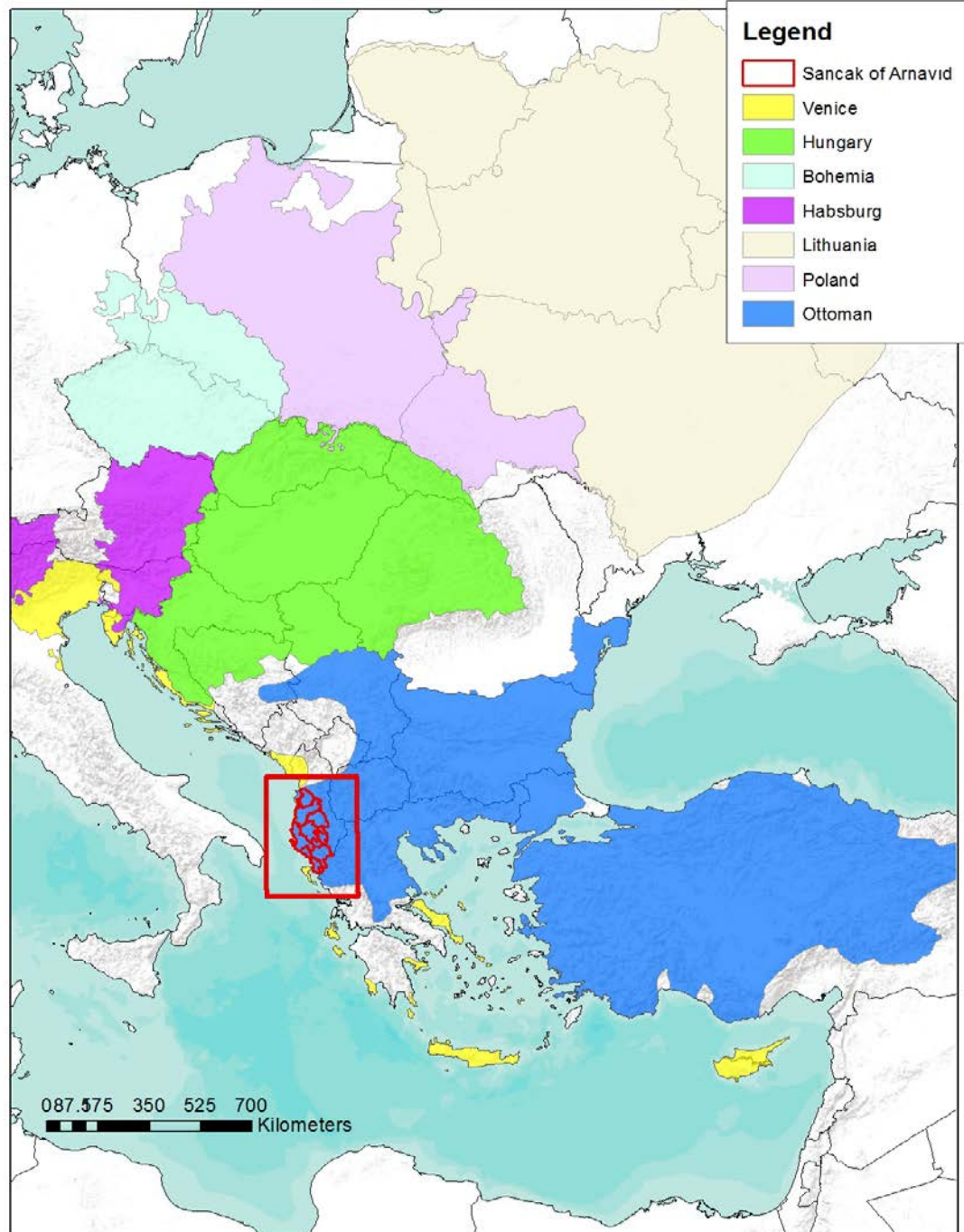
6.2 Map of the Sancak of Arnavıd

In order to geolocate the timar holders, I utilized three cartographic sources: Başbakanlık Osmanlı Arşivleri (1870); Herbert (1939); İnalcık (1954); Sarınay *et al.* (2007). They were all first digitized in a high-resolution format and then georeferenced using ArcGIS, using epsg projection 32634 - WGS 84 / UTM zone 34N, which corresponds to the area where Albania is located. Rather than manually defining coordinate points for the locations, where the timar holders are, I utilized modern-day data and subsequently made selections to match historical data in the following way:

First, I downloaded the OSM (Open Street Map) data for Albania from: http://download.geofabrik.de/europe.html in February 2017 and extracted the point features from the dataset with the following tags: "city", "locality", "village", "hamlet". Using both the manuscripts and İnalcık's (1954) transliterations on the one hand and the georeferenced maps on the other hand, I was able to identify all the localities that still exist today or that existed at some point in 1870 (the date of the oldest Ottoman detailed map that shows localities in Albania and that I was in possession of). I then manually deleted all the localities that did not correspond to any of the historical places. The names of some of these localities are displayed both in Turkish and Albanian in figure 11.

Figure 11
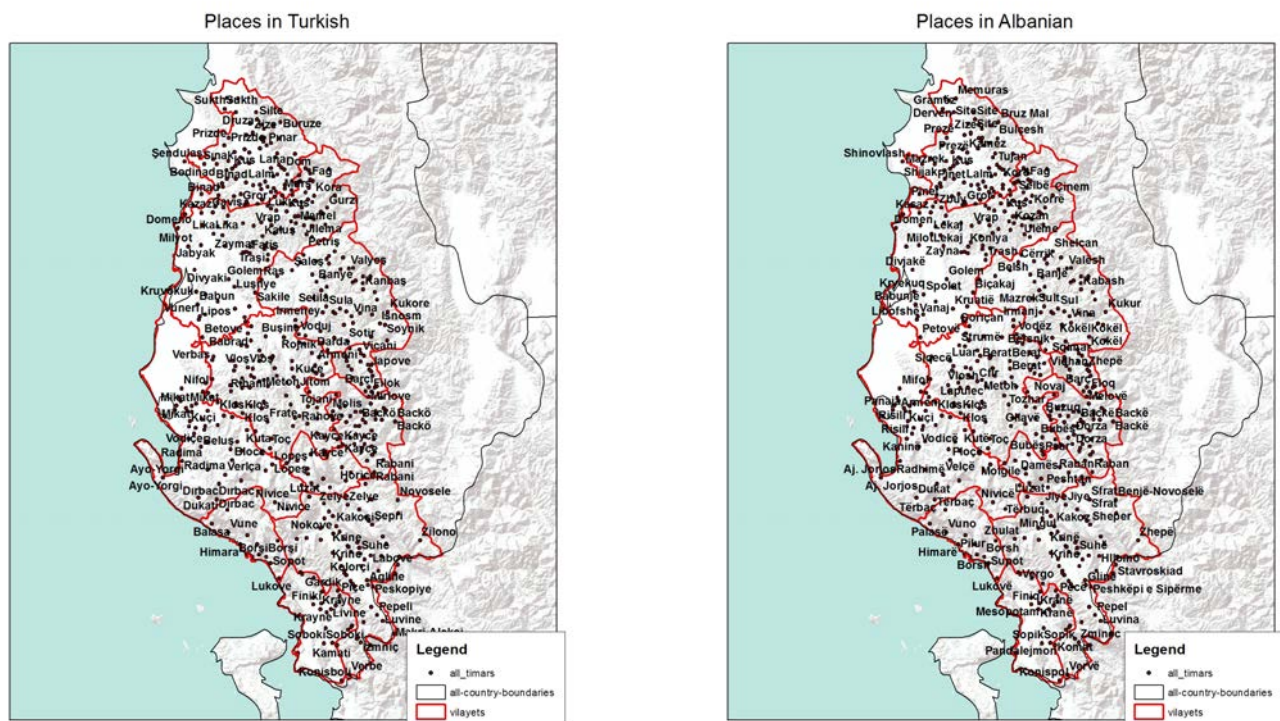
In the original manuscript, timar holders are grouped geographically, which allowed me to contour the provinces that existed in the sancak of Arnavıd. At the highest level of geographic aggregation there are *vilayet*s or provinces, followed by a *nahiyet*s or a sub-provinces and then, the *kura* or villages. Figure 12 displays the main provinces in the sancak of Arnavıd in 1432. These are: the Vilayet of Aryurikasri, Nahiyet of Sopot and Himare, Vilayet of Klisura, Vilayet of Kanina, Vilayet of Belgrade, Vilayet of Tomorince, Vilayet of Iskarapar, vilayet of Pavlo Kurtik, Vilayet of Çartalos and the Vilayet of Akçahisar.
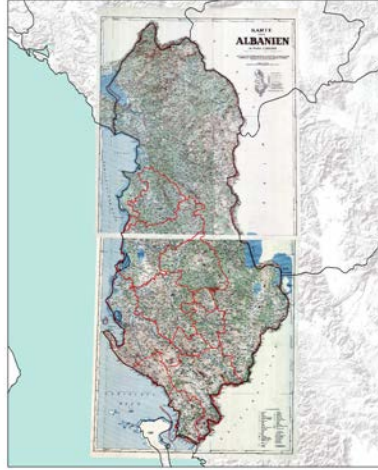
Figure 12

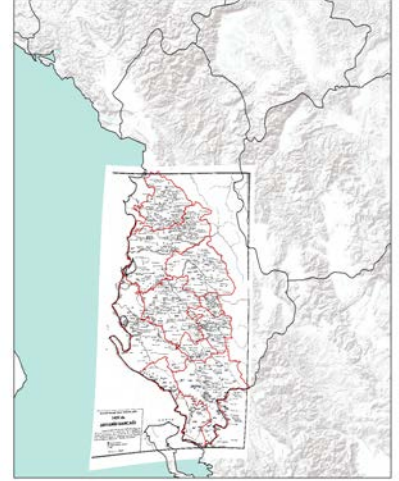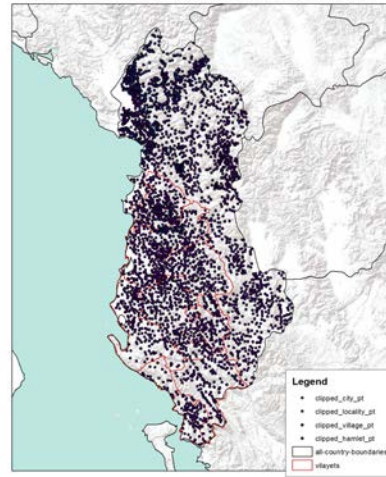Main Vilayets in the Sancak of Arnavıd

Figure 13: Figure caption

7   The Fiscal register

Land was an important source of wealth for the Ottoman state, which is why it was very important for the Ottomans to assess correctly the potential revenue that could be collected from the land under its control. Such asessesment was based on meticulous surveying of villages, vineyards, pastures and the potential fiscal revenue to be collected from these.

Approximately, every three decades, when tax revenues seemed to be changing, an Ottoman bureaucrat would be sent to the field to evaluate the sources of revenue. He would record the name of every head of family (*hane*) in a detailed register called mufassal defteri. In addition, he would record the amount of money to be collected from the tithe and other types of taxes for marriage or fines. After the conclusion of the detailed register, a summary register - içmal defteri would be prepared, where the distribution of all the fiefs would be listed, in addition to names of the localities, provinces and specific demographics: the number of households (*hane*), bachelors (*mücerred*) and widows (*bive*). Similarly, much information was also provided in this summary register about the number of vineyards, mills, orchards, fruit production etc. Typically, the Ottoman center would hold a copy of these registers and then, the governor of the region would receive another copy.

One of the earliest examples of an *icmal deferi* is the notebook, based on which this article is based, which can be found at the Ottoman Archives in Istanbul ("BOA, Tapu Defterleri no. 1M (eski 1081; yeni 1081). Arvanya Sancağının has defteri. Hicri Tarih: 835"). I collected the data based on a close examination of the facsimiles and transliterations by İnalcık (1954). I used three dictionaries for this project: Devellioğlu (2013); Redhouse (1880, 2002).

The notebook is written in Ottoman Turkish, which was the official language of the Ottoman Empire, containing a a vast mixture of both Arabic and Persian grammar and vocabulary. The notebook contains approximately 150 folios and offers important information on the Ottoman timar system prior to 1453. The notebook was started in the Hegira year 835 (approximately 1431/1432 in the Gregorian calendar) by Umur Bey, son of Saruca Paşa who as an important military commander and state bureaucrat during the time of Murad I (1362-1389). It was sultan Murad II (1421-1444; 1446-1451), who ordered Saruca Paşa to write this fiscal register.
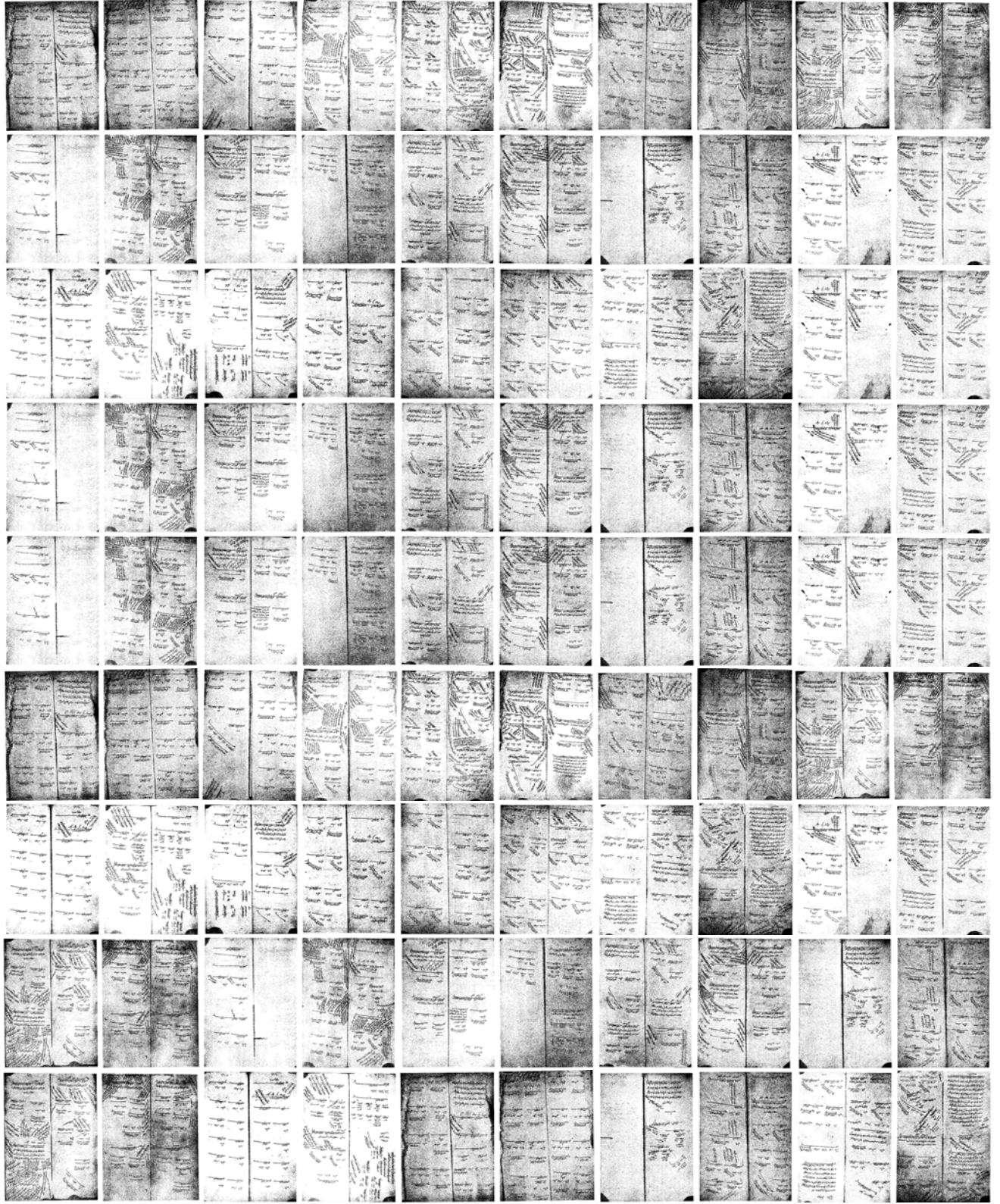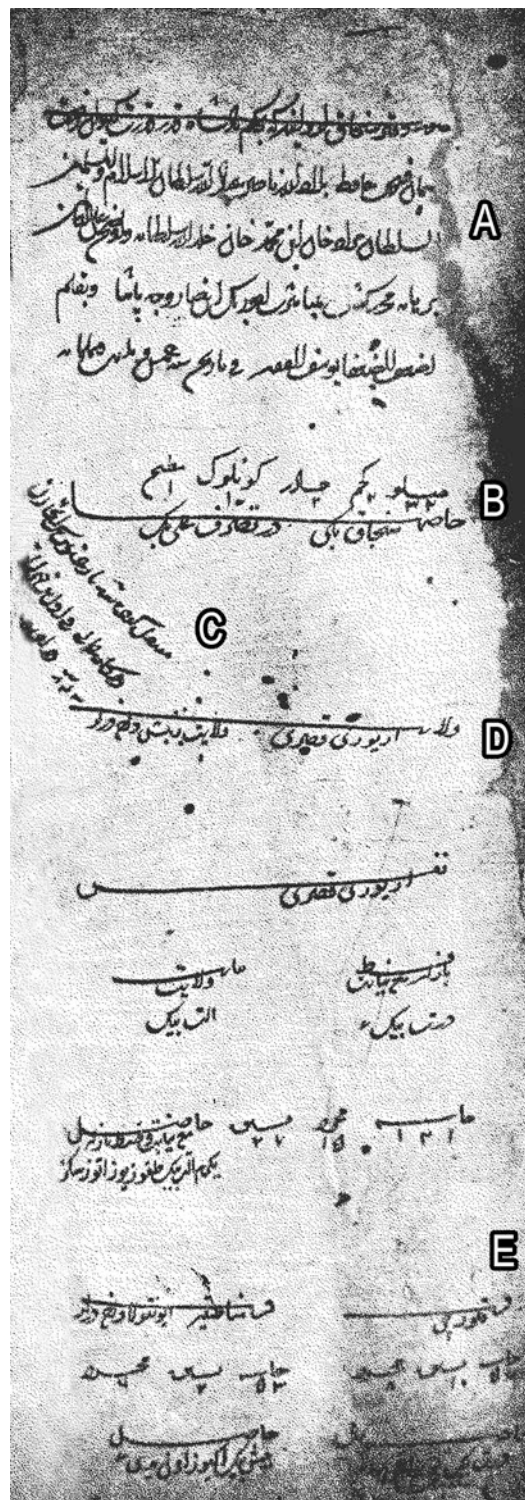
7.1   Facsimiles and Transliteration

Figure 14: Examples of folios from the fiscal register
Source: BOA, Tapu Defterleri no. 1M (eski 1081; yeni 1081). Arvanya Sancağının has defteri. Hicri Tarih: 835

Figure 15: Facsimile example

Transliteration

A

Suret-i defter-i sancağ-ı Arvaniye ki be-hükm-i padişah-ı kader kudret keyvan-i rif'at (a)sman-ı fushat hâfız-ı biladullah nasir-ı ibadullah sultanü'l-Islam vel-Müslümin es-Sultan Murad Han Ibn Muhammed Han halidullah-i sultanuhu ve evzah-ı ale'l-alemin-i burhanehu muharer gişt be-mübaşeret-i Umur Bey ibn Saruca Paşa ve be-kalem-i ez'afi'l-za'fa Yusuf'ül-fakir fi tarih sene hamse ve selasin ve semaniyemie

B

Hasha-i Sancak Beğ-i de tasarruf-ı Ali Beğ

- cebelü 32
- keçim 2
- çadır 2
- günlük 1
- matbah 1

C

Müntakil kerde şod be-Zaganoz Beğ el'hâzin dergâh-ı 'âli fi evâil Zilka'de sene-i 843 der-Edirne

D

Vilayet-i Argirikasrı, vilayet-i Zenebiş dahi derler
Nefs-i Argirikasrı - kıstı bazar ma'niyabet: kırk bin; niyabet-i villayet: altı bin
hane: 121; mücerred: 15; bive: 27
Hasıl ma'niyabet ve kıst-ı bazar: yiğirmi altı bin sekiz yüz otuz sekiz

E

Kariye-i Kolorçi: hane 56, bive 10, mücerred 8, hasıl: dört bin elli yedi
Kariye-i Manastır, Ayo Nikola dahi derler: hane 53, bive 2, mücerred 6, hasıl: beş bin iki yüz on yedi

Translation

A

Copy of the notebook of the sancak of Albania which, by the power of fate, by the height of the star of Saturn, by the width of the sky, the protector of God's land, the sultan of Islam and Muslims, the son of Mehmed Han, Murad Han - may Allah make his rule eternal and may his presence be known to the world. According to the sultan's command, this was started by the son of Saruca Paşa, Umur Beğ and continued with the pen of the humble Yusuf.

B

The Domanin of the Sancak Beğ, Ali Beğ

- cebelü 32
- keçim 2
- çadır 2
- günlük 1
- matbah 1

C

Was moved to Zaganoz Beğ, the Sultan's court treasurer in the first days of the month of Zilkade of the year 843

D

The Vilayet of Argirikasrı, also called Zenebiş
Population Argirikasrı - the market portion together with the portion of the deputy judge: 4000; Office of the deputy judge of the villayet: 6000
hane: 121; bachelor: 15; widows: 27
Revenue from the market portion together with the portion of the deputy judge: 25938

E

Village of Kolorçi: hane 56, widows 10; bachelors 8, revenue: 4157
Village of Manastır: also called Ayo Nikola: hane 53, widows 2; bachelors 6: revenue: 5217.

Figure 16: Facsimile showing properties of Isa Beğ, the son of Pavlo Kurtik
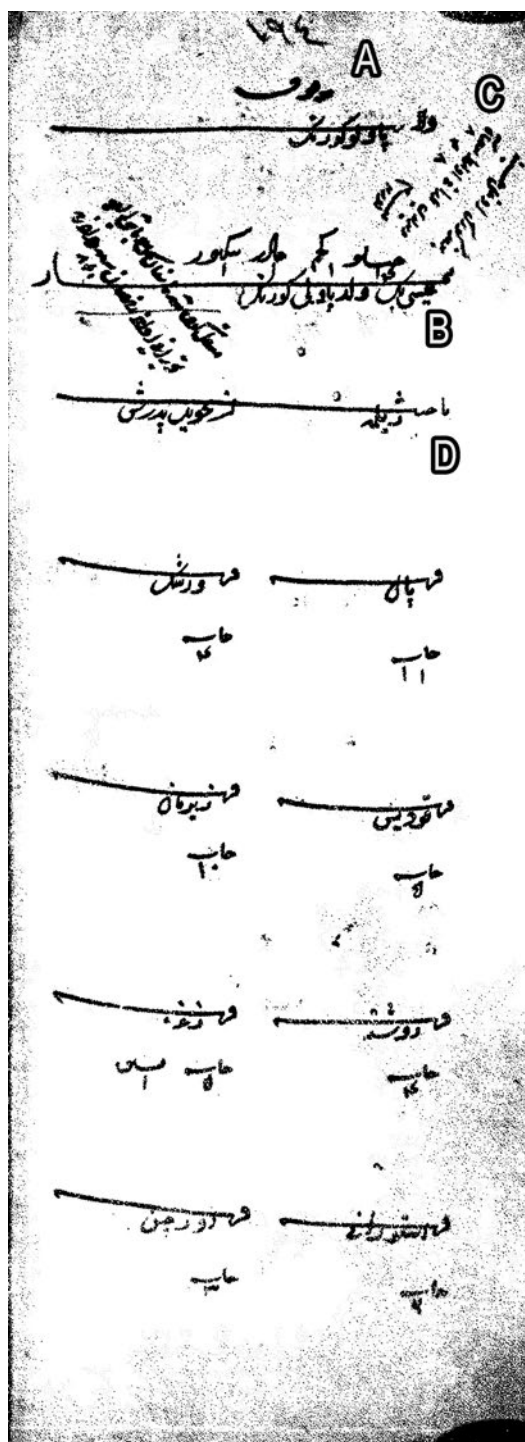
Transliteration

A
Mevkuf
Vilayet-i Pavlo Kurtik

B
Timar-i Isa Beğ, veled-i Pavlo Kurtik

- cebelu 14
- keçim 1
- çadır 1
- tenktür 1

C
Bu mezkûrun oğlu Hüsseyn'e verildi, tahîren fî evâsıtı Şa'ban sene 848, bi-makamı Edirne
Müntakil kerde şod be-Sinan Beğ subaşı-i Alice tahîren fî evahir Ramazan sene 841 der-Edirne

D
Nahiyet Jilema ez-tahvîl-i pedereş
Karye-i Pal - hane 11
Karye-i Virşek - hane 4
Karye-i Kudis - hane 5
Karye-i Zirman - hane 10
Karye-i Raviçte - hane 4
Karye-i Zagra - hane 5, bive 1
Karye-i Iskurani - hane 6
Karye-i Urçen - hane 3.

Translation

A
Vakf
Vilayet of Pavlo Kurtik

B
The Timar of Isa Beğ, son of Pavlo Kurtik

- cebelu 14
- keçim 1
- çadır 1
- tenktür 1

C
This was given to Hüsseyn, the son of the aforementioned, around the middle of the month of Şa'ban, in the year 848, in the place of Edirne
Was moved to Sinan Beğ, the subaşı for Alice in the latter days of the month of Ramazan, in the year 841, in Edirne

D
The neighborhood Jilema, from the appointment of his father
Village of Pal - hane 11
Village of Virşek - hane 4
Village of Kudis - hane 5
Village of Zirman - hane 10
Village of Raviçte - hane 4
Village of Zagra - hane 5, bive 1
Village of Iskurani - hane 6
Village of Urçen - hane 3.

8 Glossary

ahl al-zimma=protects subjects of the Ottoman Empire
akçe = Ottoman currency
berat = authorization
bey = lord, ruler
bive=widow
bürüme=mail and plate armor that was attached to a leather garment and which was covering a great proportion of an Ottoman soldier's body
cebe=coat of mail
cebelü = armed retainers
çadır = tent
ehl-i timar=timar holder
ferman = edict
gönüllü = military volunteer
gulam = young servant
gulam-i mir = salaried court troop
günlük = type of armour
haracgüzâr re'âyâ = non-Muslim tax paying population
hane=household (fiscal category)
haraç=poll-tax paid by non-Muslims
kadi = judge
kadîmî = old, originating in old nobility
kalkan=shield
kânûnnâme = Ottoman legal code
keçim = horse armour
kethüda = Ottoman government official; deputy of provincial governor
kılıç=sword
kul = slave
miri =belonging to the state
mücerred=bachelor
mülk = freehold ownership
nöker = servant to a leader, comparable to commendatio or homage of the medieval armies in Europe
oğlan = boy recruited to become part of the Ottoman army
pronoia = grant of land which at times involved military service
reaya=tax-paying populatin who were not members of the military class
sahib = owner
sancak=sub-province
sancag beğ=governor of a sub-province
ser'asker=commander of the army
sipahi=mounted soldier
süvari=timar holder
subaşı = military commander
Şeyhülislam = Islamic authority in the Ottoman Empire posessing power to confirm new sultans, but once the sultan was affirmed, it was the sultan who retained a higher authority
tenktür=tent
tezkere = the central government's recommendation for a timar
timar=revenue allocation in return for military service
timar eri=timar holder
timar hor=timar holder
uç-beğ=marcher lord
vakf = pious foundation
veled = father
villayet=province
yay=bow
zagarcı = hound keeper
zeamet = land worth between 20,000 and 100,000 akçe

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