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Abstract

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WEALTH ACCUMULATION AND INSTITUTIONAL CAPTURE: THE RISE OF THE MEDICI AND THE FALL OF THE FLORENTINE REPUBLIC*

Marianna Belloc[†] Francesco Drago[‡] Mattia Fochesato[§] Roberto Galbiati[¶]

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Abstract

We study mechanisms and consequences of an institutional capture using novel hand-collected data from the Florentine Republic. In the 14th-15th centuries, political offices were assigned in Florence by a system combining elections and lottery, which ensured for several decades a substantial alternation of power. During the 1420s, after a fiscal crisis, the Medici family became the first lender of the Republic, obtained a leading position in the city, and captured the office allocation mechanism, while leaving the political institutions formally unchanged. Employing individual level information on wealth, political participation, and party affiliation, we first document how the Medici manipulated office assignment and we show that, under their regime, participation into politics became a source of individual wealth accumulation. By using complementary data sources on voluntary loans to the Republic, we then provide several pieces of evidence that explain our findings in terms of rent extraction. Finally, we illustrate that individuals at the top of the wealth distribution gained from the institutional capture at the expenses of other citizens.

Keywords: Wealth, institutional capture, selection of politicians, political institutions, patronage, rent-extraction.

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1 Introduction

This paper deals with the connection between economic power and the functioning of political institutions (Acemoglu and Robinson, 2008; Di Tella and Dal Bo, 2003; Glaeser et al., 2003; Jha, 2015; Scheve and Stasavage, 2017; Zingales, 2017). Building on a major historical episode in the Renaissance Florence, we study this relation and explore its consequences in terms of wealth distribution. Our work centers around the history of one of the richest and most powerful families of the 15th century, the Medici. In addition to their well-known reputation as leading actors of the Italian Renaissance, the Medici played an important role in the transformation of Florentine political institutions: while leaving the architecture of the city government formally unchanged, they captured its functioning and exploited it for own use.

Beginning in the 12th century, Florence established Republican institutions.¹ These were based on short-term limits (involving 150 political positions to be assigned each year) and a mechanism of office allocation that mixed elections and selection by lot: first, the name of a potential officer was randomly drawn from lists created through elections by neighborhoods and guilds committees; then, the individual was assigned an office after compatibility checks (such as actual presence in the city and absence of tax arrears).² This system, called *Tratte*, ensured a relative balance of power across prominent families, and limited rent extraction for several decades (Guidi, 1981; De Rosa, 1992; Brucker, 1962, p. 70). Starting in the 1420s, Florence participated in the so-called Lombard wars, involving massive military expenses, for which traditional tax collection was no longer sufficient. Hence, to cope with the incoming fiscal crisis, the Republic resorted to two additional instruments of resource gathering. First, it decreed a wealth assessment of all the Florentine households. This event resulted in a substantial broadening of the tax base and involved, consequently, an increased demand for engagement in the city government by the new taxpayers (Molho, 1971). Second, in a context of strong wealth concentration, the Republic established a system of voluntary loans from the wealthy citizens. Among these, Cosimo de' Medici (the head of the Medici clan), who had recently accumulated considerable resources through the banking business (Goldthwaite, 1987), stood out as the first lender of the city and used his money to weave a network of patronage and credit relations (Padgett and Ansell, 1993). In so doing, he was particularly able to accommodate

¹In the following century, the independent city-state of Florence emerged as one of the leading economic urban centers of Europe (Davidsohn, 1909; Najemy, 2006). In 1330, a few decades before the devastating 1348 epidemics known as the Black Death, with an urban population of about 95,000 inhabitants, the city ranked as the fourth most populous in the Italian peninsula and the sixth in the European continent (Bairoch et al., 1988; De Long and Shleifer, 1993).

²A detailed description of the functioning of the *Tratte* system is provided in Section 3.

the need for political participation by previously disenfranchised citizens and channel it to foster political support.³ His political machine became instrumental in manipulating the *Tratte* office selection mechanism and seizing control of the city’s institutions (Rubinstein, 1966).

By investigating these events and their consequences, we offer two main contributions to the existing literature. First, we show that a strong concentration of wealth, coupled with a fiscal shock, might cause the political institutions to be captured by the wealthy elite. Second, we document how, in turn, under captured institutions, political participation might become a source of wealth accumulation through rent extraction, resulting in a substantial increase in the share of resources owned by individuals at the top of the wealth distribution.

The conditions that triggered the capture of Florentine institutions and that allowed the methodical appropriation of public resources by powerful elites are quite general and likely to be found in other contexts. The Republican institutions in Florence before the advent of the Medici are representative of an institutional design tailored to respond to a common need: in a context of harsh potential conflict among rival political factions, the lottery system of political office allocation was meant to guarantee a relatively large participation in the city government and, at the same time, to avoid allowing any family to prevail over the others for too long. Similar solutions were, at that time, adopted by other cities, such as Venice (Lane, 1978) and Siena (Ascheri, 2001).⁴ The case of Florence in the 15th century is also emblematic of the outward circumstances – a strong concentration of wealth coupled with a fiscal shock – that might favor an institutional capture and enable office holders to earn rent from public resources after the capture. Again, while the case of Florence at the time of the Medici has other unique features, these circumstances are quite common in human history (Stasavage, 2011).

To conduct our investigation, we have assembled a novel dataset by merging existing historical sources with hand-collected data from the Florentine State Archives. The resulting dataset combines detailed information on political participation between 1393 and 1479 (records of the *Tratte*, Herlihy et al., 2002) and party affiliation in 1426 (Padgett and Ansell, 1993) with individual information on measures of wealth for the universe of Florentine households at three points in time: one before the

³As an influential contemporary (Galileo Giovanni di Galileo) on the 21st of February 1431 declared: “*Since the Catasto [the wealth assessment], the taxes have been well distributed: the one defect of our city that still remains to be corrected is the unjust distribution of offices*” (Molho, 1971, p.84).

⁴Alternative institutional designs were chosen by other cities. An example is the introduction of external officials with governmental functions appointed for a limited time period: the *Podesta* (Greif, 1994). This solution, however, was subject to the risk that the *Podesta* exploited their position to establish autocratic governments, turning Republics into Seigniories. This was for instance the case in Milan with Della Torre (Demontis, 2010). As we will see in detail later, the Florentines were aware of this possibility, having risked the establishment of an autocratic government by Gauthier de Brienne before the creation of the regime of the *Tratte*. A system of lotteries thus seems to be, at least anecdotally, associated with longer self-government experiences.

Medici’s advent, 1427 (Herlihy and Klapisch-Zuber, 1985), and two after the consolidation of their power, 1457 (Archivio di Stato Fiorentino, Catasto, 1457, not available in digitalized form before now) and 1480 (digitalized version kindly provided by Anthony Molho and John Padgett).

Using these data, we first offer evidence on the capture of institutions. We document that, after the advent of the Medici, the concentration of political power did not change dramatically, but the distribution of governmental offices among families was substantially altered. In particular, individuals from more than one hundred “new” families (that did not previously participate in the city government), out of about five hundreds total families, had access to political offices for the first time. These families (especially those that entered politics at the beginning of the Medicean regime) were, on average, richer than those previously in office. As suggested by the historical sources (Rubinstein, 1966), the opening of the doors of the city government to previously excluded individuals was the intended result of the Medici’s strategy to accommodate the increased demand for political participation stimulated by the enlargement of the tax base. However, this process was uneven: our data show that, under the Medici, the surname of a family and its political affiliation were much stronger predictors of the probability of office assignment than in the period before. As we will see in detail, under the Medici, the original random nature of the *Tratte* mechanism was compromised and the office assignment system was systematically manipulated. As in other contexts in which political patronage influences access to public offices (Colonnelli et al., 2020; Xu, 2018), the families close to the Medici’s network saw their presence among governmental officers dramatically increased. In contrast, the families who belonged to the group that opposed the Medici’s ascent to power were penalized in terms of political participation or totally excluded.

Next, we study the implications of the capture of institutions in terms of wealth accumulation by political officers and the city’s wealth distribution. To do so, we study whether and how the impact of the number of terms in office and individual positions (percentile ranks) in the coeval wealth distribution changed before and after the Medici rose to power. As we discuss, this analysis is informative regarding the magnitude of the “returns to office” effect and, in addition, of the “selection on ability” mechanism under the two different political institutional settings.⁵ We show that before the Medici’s advent, the *Tratte* system limited the correlation between individual position in the wealth distribution and access to the government. In particular, an additional term in office in 1393-1426 is associated with a one percentile rank increase in the wealth distribution

⁵By “returns to office”, we mean any returns from an additional term in office irrespective of the *ex-ante* individual characteristics of the office holder. Return to office can be yielded by rent seeking activities or any skills and advantages accruing to the individual thanks to office holding (a better position in a network after an office term, for instance). We indicate by “selection on ability” the mechanism based on the characteristics identifying an individual before they had access to politics, instead.

in 1427, controlling for a number of individual characteristics. This effect drops to zero when we instrument the individual number of terms in office by the individual number of draws in the *Tratte* lottery.⁶ The correlation between individual wealth and terms in office, in contrast, is strong and positive in the period after the advent of the Medici. An additional term in office between 1427 and 1456 is associated with a 2.85 percentile rank increase in 1457, while an additional term between 1457 and 1479 is associated with a 4.54 percentile increase in the individual position in the wealth distribution of 1480.⁷

As we said, the difference in the estimated association between individual wealth positions and the number of terms in office before and after the advent of the Medici might reflect an increase in the “returns to office”, in the “selection on ability” effect, or in both. With our data, we could not find evidence supporting the selection on ability mechanism under the Medici. First, in the regression of individual wealth percentile ranks in 1457 (1480) on the number of terms in office in the 1427-1456 (1457-1479) period, the magnitude of the estimated coefficient on the latter variable does not decrease when we control for the previous wealth positions in 1427 (1457), which should account for a relevant part of the individual time-invariant heterogeneity. Second, we do not observe an increase in the second moment of the distribution of time in office in the Medicean period, as we should in such a case since high- and low-ability individuals are expected to show diverging patterns of time in office. An increase in returns to office under Medicean rule might still be attributed to a possible rise in the time in office, which could allow public officials to gather better information, develop a network of relationships, and thus extract more wealth from their political position. However, this is excluded by our data.

Hence, we turn to investigate the possibility that, in the captured institutional system, the relation between individual wealth positions and political participation reflects an increased return to office due to the joint effect of “rent extraction” (individual appropriation of public resources) and “patronage” (exchange of office-based favors within a partisan network; see Padgett and Ansell, 1993), which were limited before the Medici’s advent. Our analysis offers evidence supporting this interpretation. In particular, with reference to archival records of the voluntary loans that Florentine citizens granted to the Republic and using detailed information registered in the individual credit contracts, we observe that unlike in the pre-Medicean period, under captured institutions higher

⁶As we will see in more detail and consistently with the historical narrative, before the advent of the Medici, the lottery of names was as good as random. Hence, for this period, the individual number of draws can be used as an exogenous source of variation for the individual number terms in office.

⁷When considering the Medicean period, we could still use the number of draws as an IV for the number of terms in office because they are strongly correlated. In this case, the IV estimate of the coefficient of wealth percentile rank on terms in office is positive and statistically significant. Yet, because of the manipulation of the *Tratte* by the Medici’s regime, it is difficult to give a causal interpretation to the IV estimates for this period.

interests rates were paid to citizens who held a larger number of terms in office. In addition, while the yearly interest rate paid by the Republic to individuals before the Medici's advent was roughly the same irrespective of their political affiliation, this was not true in the following period: after the Medici seized control of the city government, the members of their faction were paid significantly higher interest rates. The public resource appropriation implied a considerable total cost for the Republic. Under the conservative assumption that only one third of the estimated association between individual wealth and the number of terms in office was due to returns to office consequent to rent extraction, our back-of-the-envelope calculation suggests that the total amount of resources diverted by the Medici's political machine was between a lower bound of 2.75% and an upper bound of 10.6% of the total amount of total direct taxes in Florence. The consequences of this on overall wealth distribution were not trivial, either. We show that the share of total wealth held by the top 10% of Florentine households substantially increased at the expense of the share held by the bottom 90% in 1457 and 1480, exacerbating the already strong concentration of wealth.

However, the system was doomed not to last long. The engine of the Medici's political machine was their banking business that provided them with the necessary liquidity to sustain their patronage activity and lending network. Thus, the power of the family over Florentine institutions was inextricably connected with the prosperity of its bank (De Roover, 1966; Padgett and Ansell, 1993). After the death of Cosimo in 1464, none of his successors (Piero the Gouty, Lorenzo the Magnificent, and Piero II) had his leadership skills or aptitude for business. The crisis of the bank led to a dramatic shock to the regime, which resulted in a change in the balance of political power and a number of revolts and conspiracies (for example, the 1478 Pazzi's conspiracy). In 1494, the Medici's leadership was interrupted by the exile of Piero II and the failure of the bank. After a number of short-lived political experiences in the following decades, in 1512, the Medici family re-established its power in the Florentine State under a completely different institutional setting, which marked the end of the Republic (Najemy, 1982, p. 426). The Medici were protectors of the arts and contributed to making Florence one of the most important cultural, economic, and political centers of Europe. Nonetheless, their legacy is also associated with the fall of the Florentine Republic.

The rest of the paper is organized as follows. Section 2 discusses the related literature and Section 3 illustrates the institutional background and the data used in the paper. Section 4 documents the empirical evidence on how the office assignment mechanism and the distribution of political power changed after the advent of the Medicean regime. Section 5 explores the consequences of the institutional capture in terms of individual wealth accumulation and investigates the underlying

channels. Section 6 investigates the impact on wealth distribution and provides an estimate of the costs of the Medici's political machine. Finally, Section 7 gives concluding remarks.

2 Related literature

This paper contributes to several strands of the literature. First, it relates to previous work on the functioning of political institutions and the role of economic elites in influencing the distribution of power (Acemoglu and Robinson, 2008; Bardhan and Mookherjee, 2000; Di Tella and Dal Bo, 2003). In particular, we exploit a historical case study to improve our understanding of the mechanisms and consequences of an institutional capture. The paper closest to ours is by Puga and Treffer (2014), who show that, in late medieval Venice, a group of merchant families accumulated considerable resources thanks to the increase in long-distance trade; their prominent economic position enabled them to gain political power and induce, in turn, an oligarchization of the political regime. Similarly, our paper tells a story in which wealth concentration empowered a group (the Medici and their network) to take over the city government. Unlike in the case of Venice, in Florence, the Medici family maintained the formal institutions unchanged and, *de facto*, used them to foster their private interests (Padgett and Ansell, 1993). In addition, the critical shock that triggered the institutional capture was different in the two contexts: a trade shock in Venice and a fiscal shock in Florence. The fiscal shock was turned into an opportunity to seize political control by the Medici, who also exploited the increased demand for political participation by previously disenfranchised citizens (Weigel, 2020, and Stasavage, 2011, empirically explore the relation between demand for participation into politics and fiscal contributions in other contexts).

Second, our paper speaks to the literature that studies how public officers can seize private returns from holding political positions. A number of works have explored this topic from a theoretical point of view (Barro, 1973; Besley, 2004; Caselli and Morelli, 2004; Mattozzi and Merlo, 2008); other studies have developed empirical analysis of it (Eggers and Hainmueller, 2009; Fisman et al., 2014; Querubin and Snyder, 2013).⁸ We contribute to this literature by estimating the return to office in a political system in which the individual variation in holding public office comes first from a lottery and then from manipulation by a political elite.

⁸Eggers and Hainmueller (2009) estimate financial returns to being members of Parliament in UK and find a positive effect of holding political offices on the probability of directing a publicly traded firm for Conservatives politicians but not for Labour Party members. Fisman et al. (2014) study returns to political offices of Indian politicians and find a significant positive effect on annual asset growth for the candidates that won the elections with respect to those that did not, an effect that is greater in more corrupted Indian States and when ministerial offices are considered. Similar results are found by Querubin and Snyder (2013) examining rents from a seat in the U.S. Congress for the first half of the 1860s, but not for other periods in the 19th century.

Third, our work explores the history of Republican Florence and its institutions. Related historical analyses are by Padgett and Ansell (1993), who study the network of political relations of the Medici and their “soft” power approach to the city government, De Roover (1966), who describes the rise and fall of the Medici’s bank, and Molho (1971), who investigates the Florentine public finances in the early Renaissance. A recent related paper by Abramson (2022) studies how the 14th century Florentine political elite succeeded in earning increasing returns from public offices. Interestingly, this work shows that the export orientation of the guilds, to which the members of the Florentine government belonged, was associated with the manipulation of the trading values of the city’s currency (the florin).⁹ In a recent work, Barone and Mocetti (2021) exploit the 1427 wealth assessment to investigate the long-lasting effects of the ancestors’ socioeconomic status in Florence. From a wider perspective, our paper contributes to the large body of work that focuses on the origins of pre-modern Western political institutions, of which some important examples are Acemoglu and Robinson (2006), Greif (1994, 2008), Jha (2015), and Mokyr (1990).

Finally, as in Acemoglu et al. (2015), our study deepens the understanding of how the actual functioning of political institutions may affect the distribution of wealth in a society. We also document that economic and political power can reinforce each other, generating vicious circles (Zingales, 2017), and highlight the role of wealth in sustaining institutional capture as an equilibrium outcome (Glaeser et al., 2003). To the best of our knowledge, thanks to the nature and richness of our data, we are the first to document how returns from political offices contribute to shaping the overall wealth distribution.

3 Historical background and data description

3.1 Political institutions and the *Tratte* system

Since the end of the 13th century and throughout the 14th century, executive political power of the Republic of Florence was exercised by three offices: the *Signoria*, formed by the *Gonfaloniere di Giustizia* (Standard-bearer of Justice) and the eight *Priori* (Priors), and two colleges, the 12 *Buonomini* (the Good Men) and the 16 *Gonfalonieri di Compagnia* (Standard-bearers of the Companies). These three offices, which were together also called the *Tre Maggiori*, had full control of the legislative initiative and executive functions of the city (Brucker, 1962). Since 1328, and with a more stable mechanism since 1345, the members of the three governmental offices were appointed

⁹More general references about the political, economic and social history of Florence in the period relevant to our paper are Botticini (1999), Guidi (1981), Kent (1978), and Rubinstein (1966)

through a selection process that mixed elections and a lottery. The system, called *Tratte*, involved three main steps (a summary of the political selection procedure is reported in the Appendix).

First, during the preliminary scrutiny, multiple lists of Florentine citizens were submitted by the different components of Florentine society (the neighborhoods and the guilds), and they were then examined by the scrutiny commission that approved, through a majority vote, their inclusion in the list of the citizens eligible for office holding. This commission was formed by the members of the *Tre Maggiori* and by 80 other prominent citizens selected by the members of the government (Brucker, 1962, p. 65).¹⁰

Second, the names of the approved citizens were inserted in special bags. To guarantee representativity, multiple bags were created, accounting for the office for which the citizens had to be selected, the group of guilds they were part of (*Arti maggiori* or *Arti minori*), and the neighborhood in which they resided.¹¹ Since the mid-14th century, scrutinies were usually held every five years, and the lists of approved citizens were renewed accordingly.

The last step consisted of a lottery, which was held by the notary of an administrative official (*Riformagioni*), under the supervision of the members of the *Tre Maggiori* in charge. The citizens whose names were drawn from the bags were declared *seen* for an office. The notary presiding over the drawings verified that a list of requirements were satisfied. For a drawn citizen to be actually appointed, *seated*, there must have been no objective obstacles to his appointment (e.g., death or absence from the city), he must have not incurred tax debts with the Republic (*in speculo*), he must not have been recently appointed for another main office (*general divieto*), and he must have been above the minimum age required for the office.¹² In the presence of any violation of the requirements, the drawing was repeated until a suitable citizen was drawn (Guidi, 1981; De Rosa, 1992).¹³

The length of the officials' tenure varied depending on the office: two months for the *Gonfaloniere di Giustizia* and the *Priori*, three months for the *Buonuomini*, and four months for the *Gonfalonieri*

¹⁰Florence was divided into 16 *gonfaloni*, which composed four *quartieri* of four *gonfaloni* each: Santo Spirito, Santa Croce, Santa Maria Novella, and San Giovanni.

¹¹For example, for the election of each of the eight *Priori*, eight bags were created, and these guaranteed that each of the two groups of corporations, in each of the four neighborhoods, had one representative. The name of a citizen from a given neighborhood and guild could be present in more than one bag and thus eligible for more than one office.

¹²After the end of the term, an official could not be appointed to the same office for the next 12 months nor for another *Tre Maggiori* office for the next four months. Also, his relatives could not hold office for the eight months after the end of his term. No official could hold two offices at the same time (De Rosa, 1992, p. 13). The minimum age for office holding was 40 for the Standard-bearer of Justice and 30 for all the other offices. It was common to include in the lists of the eligible citizens individuals under the minimum age, but, if their names were drawn, they were not seated.

¹³Since 1374, a citizen whose name was drawn for office could refuse to be seated under the payment of a fine (De Rosa, 1992, p. 31). The compensation for those who were seated in the *Tre Maggiori* was either null or negligible (Rubinstein, 1966, p.70).

di Compagnia. The short tenure of officials guaranteed a substantial turnover of the citizens in the government. The historical narrative suggests that, at least until the late 1420s, the draws were in fact random (Brucker, 1977; Guidi, 1981; Najemy, 1982; Padgett, 2000).

The information regarding the political participation of the Florentine citizens during the 14th and the 15th centuries has been digitized and made available by Herlihy et al. (2002). These records are based on the original documents called the registers (*Giornali*) of the *Tratte* and are held in the Florentine State Archive. For each year (with some important exceptions for the initial period), the results of the drawings for the main political offices of the city were recorded.¹⁴ In our analysis, we focus on the period of 1393-1479. The starting year is chosen because the composition of the bags and the drawings began to be run regularly in the last decade of the 14th century. In addition, 1393 was a turning point for the Republic, as it marked the end of a period of popular riots, initiated in 1378 with the revolt of the Ciompi, and the restoration of the power of the main guilds, the *Arti maggiori* (Brucker, 1977; Najemy, 2006). The ending year is chosen because it was just before the last available wealth assessment compiled under the Medici's regime. We focus on the *Tre Maggiori* offices and exclude the notaries (*Notai*), as theirs was an administrative function.

Each record reports the complete list of the names (first name, patronymic, and often avonymic) and surnames of the citizen drawn for a specific office, the date of drawing and start of office tenure, the guild membership, the neighborhood of residence, and the result of the drawing, namely whether the individual was assigned to the office (seen and seated) or seen and then rejected (just seen). In the latter case, the reason for rejection was recorded.¹⁵

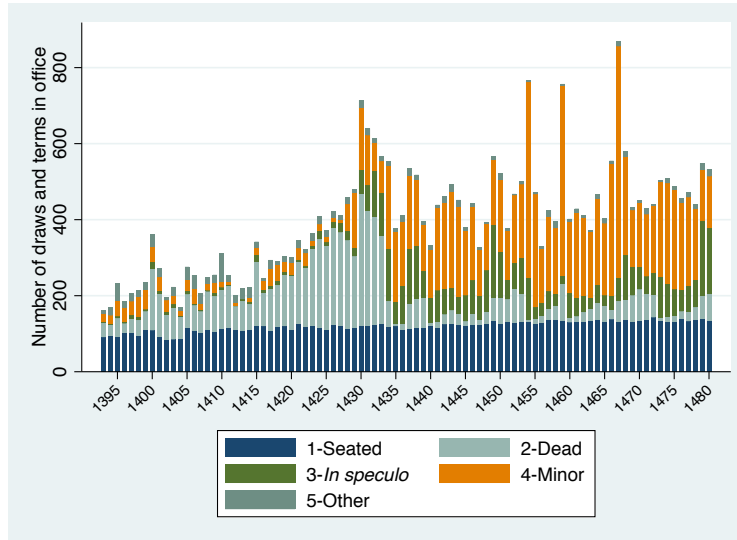
The number of offices and the repeated renewal of the bags provide a picture of wide political participation. In the period 1393-1479, we have 1,159 bags, 34,546 draws, 10,375 office terms (seats), with 5,857 individuals involved, whether seen and seated or just seen, and belonging to 748 families (surnames). Conditional on being seated at least once, the mean number of seats per individual is 3.14 (s.d. = 2.31), with a maximum of 18. Figure 1 shows the number of draws and terms in office by year over the 1393-1479 period and the reasons for rejection. In particular, each bar represents the number of draws in a given year, the blue part of the bar being the number of seats and the remaining part with other colors the rejections.

In contrast to the number of terms in office, which remained relatively constant over the entire period, the number of draws followed a different trend. In particular, the number of individuals rejected because of death grew across the first three decades of the 15th century. In fact, in

¹⁴The registers of the government officials of the city of Florence start in 1282, but until 1345 the list is the result of a different selection procedures and is largely incomplete (Herlihy et al., 2002).

¹⁵One limitation of the data is that draws that did not lead to a seat because of *general divieto* are rarely reported.

Figure 1: Draws and terms in office by year.

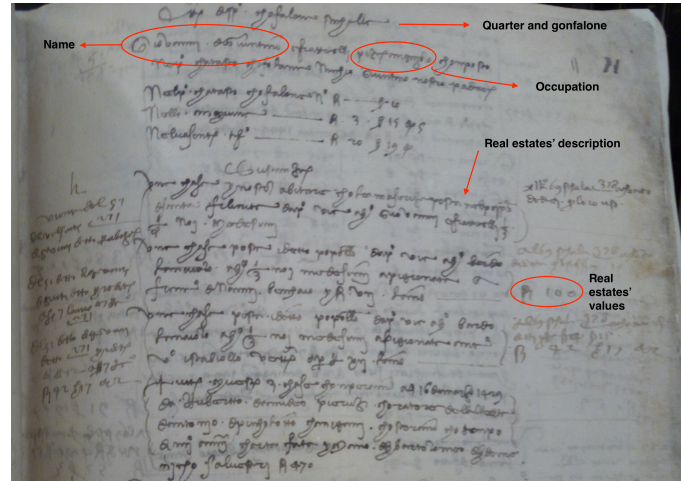


Notes: The figure shows the number of draws and terms in office for the *Tre Maggiori* by year between 1393 and 1480. Different colors of the bars denote the reasons for rejection, if any (death, *in speculo*, under minimum age, other).

this period, because older bags were often merged with new ones rather than being replaced, the occurrence of new scrutinies did not prevent the individuals who had passed earlier scrutinies from still being considered for office (Herlihy et al., 2002). This situation changed under the Medici's regime: in this period, the number of individuals rejected from office because of death dropped sharply, while the number of individuals rejected because they were under the minimum age rose. This was the outcome of the creation of entirely new bags, ordered by the Medici, and also the consequence of a practice of inflating the bags with names of individuals not eligible for office holding in order to signal that they could have been part of the elite in the future (Rubinstein, 1966). Finally, as illustrated by the figure, the increased number of individuals rejected because of tax arrears (*in speculo*) from the end of the 1420s was the result of the enhanced registry of Florentine households' wealth decreed in 1427 for tax collection (although we cannot exclude the possibility that some of the rejections *in speculo* were made *ad hoc* for reasons of political discrimination).

Information on political participation is complemented by information on political faction affiliation of the Florentine families in 1426. This was compiled by Padgett and Ansell (1993) (data reported in Table B1 of their paper), based on the historical analysis by Kent (1978), and includes the most important Florentine families in the first decades of the 15th century. The list is an attempt to reconstruct, on the basis of information regarding political interactions, formal economic relations (such as business partnerships), family ties (such as marriages), and friendship links (attested by private letters or issuance of personal surety bonds) for the single year 1426, the network of families

Figure 2: Example of declaration from the 1457 *Catasto*.



Notes: The figure shows an extract from the first page of the declaration of the citizen Giovanni di Giuntino and his brothers from the *gonfalone della Scala* (in the neighborhood of *Santo Spirito*). The figure is from the volume 785, p.11, *Archivio di Stato Fiorentino*.

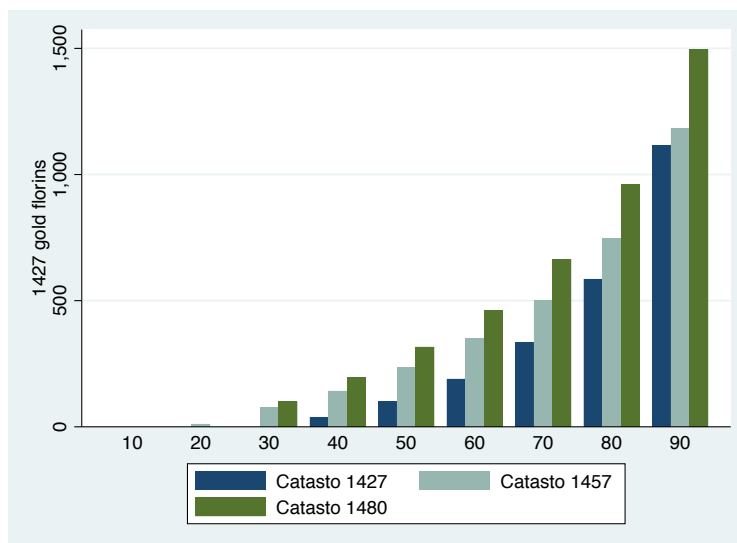
who supported the rise of the Medici, those who openly opposed it, and those whose members were split between the two main political factions. For future use, it is important to stress that this classification is time invariant and offers a picture of the main Florentine political factions in 1426, at the dawn of the Medici's rise to power.

3.2 Wealth assessments of 1427, 1457, and 1480

The first complete wealth assessment (*Catasto*), which was compiled in 1427 and whose original documents are held in the Florentine State Archive, has been made available in digital form thanks to the pioneering work of the historians David Herlihy and Christiane Klapisch-Zuber. Herlihy and Klapisch-Zuber (1985) used the extraordinarily rich demographic, social, and economic information contained in the registers and provided a full account of the economic and social conditions of Florentine households at the beginning of the 15th century. Their work was then digitized and published online by Herlihy et al. (2002), and we have used this version of the *Catasto* in our analysis.

For each citizen who was head of a house, in the city and countryside of Florence, the following demographic and social information are available: first name, patronymic, surname, gender, number of household members, and neighborhood. In addition, the *Catasto* records the complete self-reported list of individual total taxable wealth and its components, namely: real estates (excluding the first house), shares in public debt (i.e., the amount of forced loans), and private movable assets (including physical capital and credits). The assessment covered the entire population, except

Figure 3: Real estate distribution by decile in 1427, 1457, and 1480.



Notes: The bars denote the real estate percentiles according to the three wealth assessments: 1427, 1457, and 1480.

ecclesiastics and citizens with no or temporary residence. The dataset includes 9,780 records that identify the households within the walled city of Florence in 1427.

In the following decades, the government of Florence often repeated the practice of registering the wealth of the Florentine citizens. Subsequent registers, not always including the same information of the 1427 *Catasto*, were compiled in 1435, 1451, 1457/58, 1469, and 1480 (Procacci, 1996). Among these, the *Catasto* of 1457 represents the most complete and comparable tax register for obtaining information on the wealth status of Florentine households after 1427 (Conti, 1984, p. 247). For the 7,455 households recorded in the walled city of Florence, the document reports the same demographic, social, and economic information of the 1427 record.¹⁶ The document has never been made available in a readable digitized form before now. We have drawn on the information reported in the original copies of the 48 volumes of the *Catasto del 1457, Portate dei Cittadini* and edited a digital version of the 1457 wealth assessment (Archivio di Stato Fiorentino, *Catasto*, 1457). In Figure 2, we provide an example of a declaration from an original volume. We collected data at the household level (first name, surname, patronymic, avonymic, and gender of the head of the house, number of household members, and neighborhood) as well as a detailed record of the values of property items, including real estate (excluding the first house).

¹⁶According to Molho (1994), the different number of households in the wealth assessment of 1457 is due to the more restrictive rules in considering the resident population in Florence.

Finally, we use a digitized version of the 1480 *Catasto*.¹⁷ This document includes the same set of sociodemographic information reported in the 1427 and 1457 registers and, as a measure of wealth, the real estates for each of the 8,413 non-exempted urban households (Molho, 1994).

Since the real estate is the only individual measure of wealth available for all the three wealth assessments considered, it will be used as the main proxy for wealth. Figure 3 shows its distribution by decile over time.¹⁸

Details on the spelling rules for names and surnames and information on how the various datasets were merged and how individuals and households were identified are reported in the Data Appendix.

4 The fiscal crisis and the capture of the Republican institutions

4.1 The rise of the Medici to power

During the 1420s, the Republic was involved in a series of large military enterprises. First, Florence took part in the Lombard Wars, opposing the rulers of Milan, the Visconti; then, the city tried to conquer the neighboring city, Lucca (Molho, 1971). These decisions implied a sharp rise in military expenses. In 1424, 1426, and 1427, the yearly sums spent by the Republic to hire mercenary soldiers were more than four times the average yearly figures in the previous decade. This increase was due mainly to the increase in salaries paid to the military force, which in nominal terms were in 1430 four times those paid 20 years earlier (Molho, 1971, p. 11-16).

The late medieval Florentine fiscal system was based on two main sources of revenues: indirect taxes on consumption and other economic activities and forced loans. The latter were contributions lent by the citizens to the government under the promise of the principal restitution and the payment of an interest rate. However, as the sum paid was never reimbursed, these contributions generated a yearly perpetuity. The government set the overall sum to be paid by each neighborhood, which were then autonomous in distributing the burden across their households. This allocation was usually made by subjective evaluations by the most powerful families of each neighborhood and very often provoked complaints by the population.

Hence, as fiscal pressure rose, signs of distress and protests emerged in the population of taxpayers (Molho, 1971, p. 81). This discontent and the approaching fiscal crisis led the *Tre*

¹⁷Courtesy of John Padgett and Anthony Molho, an excerpt of it has been published in Molho (1994).

¹⁸To make the wealth assessments comparable, we proceeded in the following way. First, wealth from the three sources was registered in gold florins, but most of the transactions were done in silver coins. Hence, because the value ratio between gold and silver coins changed over the period, we multiplied the 1457 and 1480 real estates by the ratio between the value of one gold florin in silver coins in 1457 and 1427 and in 1480 and 1427 (Spufford, 1986). Second, wealth in original sources was at current prices, so we converted 1457 and 1480 values to 1427 prices.

Maggiori to design an objective mechanism for the allocation of forced loans, in which all the households would contribute according to their actual wealth. In 1427, the Republic decreed a wealth assessment of all the households in the city of Florence: the 1427 *Catasto* described in the previous section. From that year, forced loans required each household to pay 0.5% of the value of their assessed taxable wealth (Molho, 1971, p. 81). During the period of the Lombard wars, the forced loans were largely and repeatedly used to cover military expenses, resulting in a substantial increase in the tax burden of citizens. This effort was, however, not sufficient, and the Republic had to resort to additional sources: voluntary loans.

The high interest rates yielded by the voluntary loans and the guaranteed repayment of the principal made them a very attractive investment for disproportionately rich Florentine families. Indeed, the city's wealth distribution was remarkably unequal. Our data suggest that the top 0.1% of the Florentine households in 1427 held a share of liquid assets (total wealth excluding real estate) of about 14%, which was equal to the share owned by the bottom 90%. Similar patterns are observed for real estates and total wealth. Historians (Molho, 1971, p. 180) document that between 1430 and 1432, the city raised through voluntary loans an amount equal to about 44% of the total resources collected in the same years through ordinary fiscal means.¹⁹

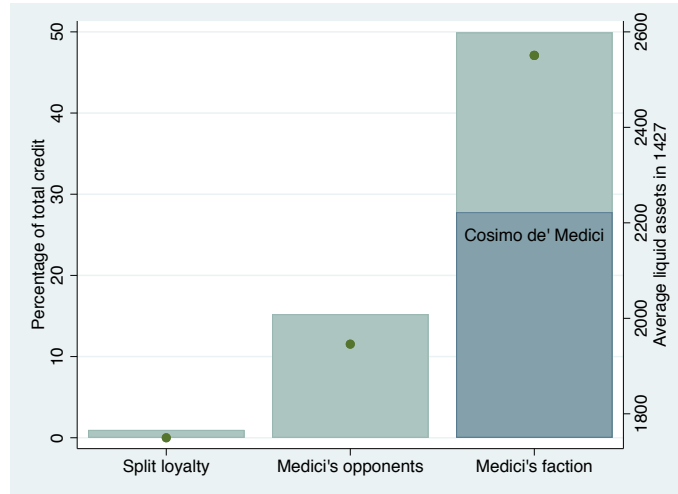
It was at that time that the house of the Medici rapidly emerged as one of the most affluent families of the city (Goldthwaite, 2009). Its recent economic success was based on the banking business, which originated in 1397 when Giovanni di Bicci de' Medici (1360-1429), formerly an agent of a Florentine bank in Rome, funded his own business headquartered in Florence.²⁰ In the following decades, Giovanni's son Cosimo (1389-1464) expanded the business of the family's company (De Roover, 1966) and increased his influence and prestige in Florence.

When the fiscal crisis loomed over Florence, Cosimo used the enormous personal liquidity that he had accumulated as a banker to lend a substantial amount of money to the Republic, his contribution being at least three times that of the second largest in the city (by Andrea Ugolino Pazzi, who was close to the Medici family). In so doing, Cosimo asserted himself as the savior of the city and linked his fortunes to those of the Republic. The histograms (left vertical axis) of Figure 4 show

¹⁹According to Molho (1971, p. 180), between the end of the 1430 and mid-August 1432 the Republic raised 561,098 florins through voluntary loans. This sum corresponds to 44% of the sum of the indirect taxes and forced loans collected in the same period, measured as their total values in 1431 and 67% of their total value in 1432 (data from Molho, 1971, p. 61-62).

²⁰Giovanni opened new branches of the company in Naples, Gaeta, and Venice, and became the depository of the Apostolic Chamber in Rome. This prestigious title allowed the Medici's bank to exclusively manage the financial resources of the Pope and to draw the financial investments of the members of his court. During the 1397-1420 period, the company tripled the total capital invested and realized an overall net profit of more than 150 thousands gold florins (roughly 15 times the initial capital invested in the bank), of which more than 50% originated at the Papal court (De Roover, 1966).

Figure 4: Loans to the Florentine Republic by political faction (1427-1434).



Notes: The bars (left vertical axis) measure the loans to the city of Florence as a share of the total credit provided in the 1427-1434 period by political affiliation. The dots (right vertical axis) denote the average liquid assets (total wealth excluding real estate) in 1427, also by political affiliation. The shaded area of the bar representing the Medici family refers to the share of credit provided by Cosimo and his son Lorenzo. The information on the amounts of money lent to the Florentine Republic is our calculation based on Molho (1971) (pp. 215-217). The information on affiliation to political factions is from Padgett and Ansell (1993).

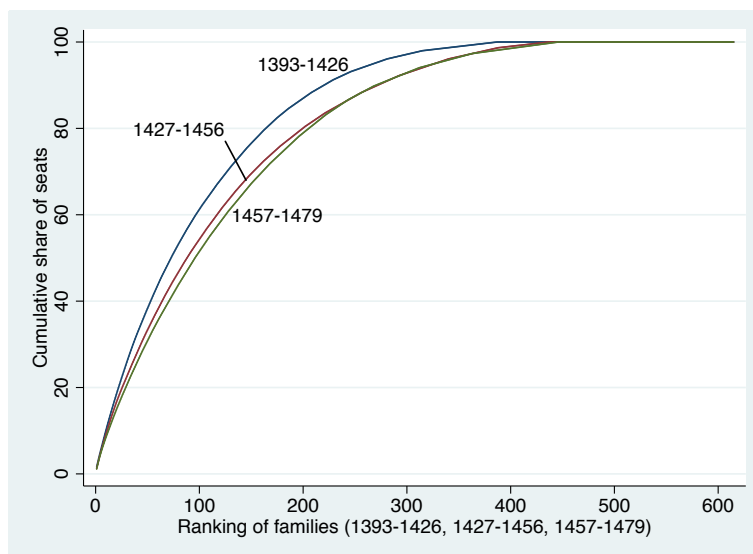
the percentages of credit lent to the Republic according to political faction of the lender in the 1427-1434 period and, in the shaded area, the personal percentage of credit held by Cosimo and his son Lorenzo de' Medici (amounting to 28% of the total). The dots (right vertical axis) indicate the average value of liquid assets (total wealth after excluding real estate) in 1427 by political faction. As shown, the availability of movable wealth is strongly correlated with the factual contribution to public debt.

The rising influence of Cosimo was opposed by the many “old” families that managed Florence before the Lombard wars and that saw Cosimo as a threat to their political role. In 1433, the increasing power of the Medici led the Florentine government, which included randomly elected members who were close to the Albizzi family (one of the most important families who opposed to the rise of the Medici), to exile Cosimo.²¹ This ushered in a political crisis in the city. During the following year, the new randomly selected members of the government, including individuals close to the Medici family, recalled Cosimo to the city and exiled the leader of the Albizzi, Rinaldo (Rubinstein, 1966).

Following his return, Cosimo took political control of Florence. In so doing, he was particularly able to weave a large network of families linked through marriage, lending, and patronage activities in which the house of the Medici had a central position (Kent, 1978; Padgett and Ansell, 1993;

²¹ Among other things, Cosimo was accused of favoring the war against Lucca and making large profits from lending money to the Republic (Molho, 1971).

Figure 5: Concentration of office terms among families.



Notes: The figure shows the concentration of office terms in the period under investigation. The horizontal axis reports the ranking of the families in each sub-period (1393-1426, 1427-1456, 1457-1479); the vertical axis reports the corresponding cumulative shares.

Padgett and McLean, 2006; Jackson, 2008; Padgett, 2010).²² Yet, Cosimo remained largely behind the scenes, never holding long-lasting political office, nor formally altering the political institutional setting of the city (Rubinstein, 1966; Padgett and Ansell, 1993; Najemy, 2006). This “soft-capture” strategy may be interpreted as the result of the trade-off between different interests. On one side, the Medici wanted to concentrate political power and protect their high stakes in public debt. On the other side, a part of the Florentine society, previously underrepresented in the government of the city and suffering an increasing fiscal pressure, demanded larger political participation. The control of the city government was necessary for the Medici to take care of their business; yet, too much concentration of power would have come at the cost of losing support and tax revenue.

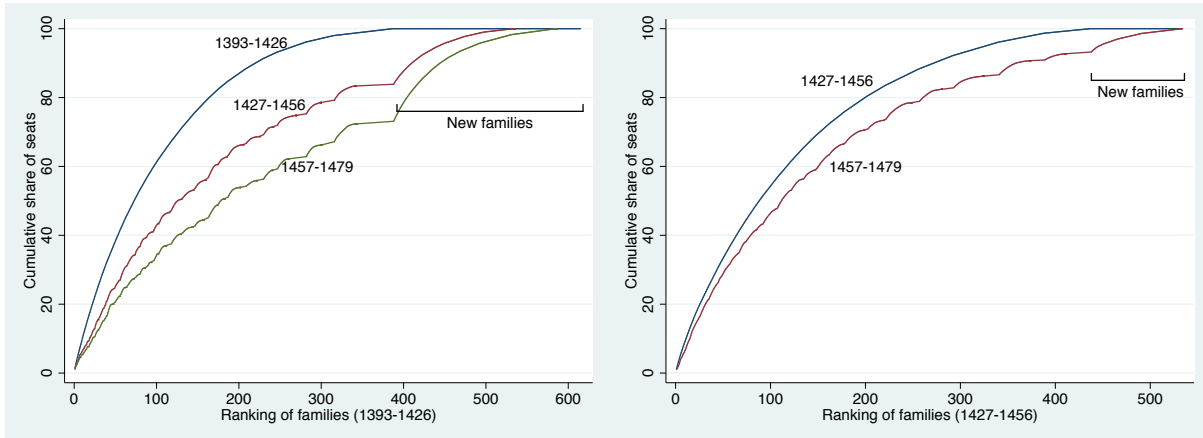
4.2 Institutional capture and political participation

How was the distribution of political power in the city government affected by the advent of the Medici? Figure 5 illustrates the concentration of power over the 80 years under analysis. On the horizontal line, we report the ranking of the families on the basis of their share of seats in 1393-1426, 1427-1456, and 1457-1479, while, on the vertical axis, we show the corresponding cumulative shares.

The concave lines indicate that the distribution of seats was uneven. For instance, looking at the

²²The relative novelty of the Medici in the Florentine political scene also favored their success. Having not been part of the social and economic elites in the previous decades was considered by the other newly rising Florentine families as an important feature for driving a credible change in the political address of the city (Brucker, 1957, 1962; Becker, 1962; Martines, 1963; Cohn, 1980).

Figure 6: Change in the concentration of office terms and “new” families.

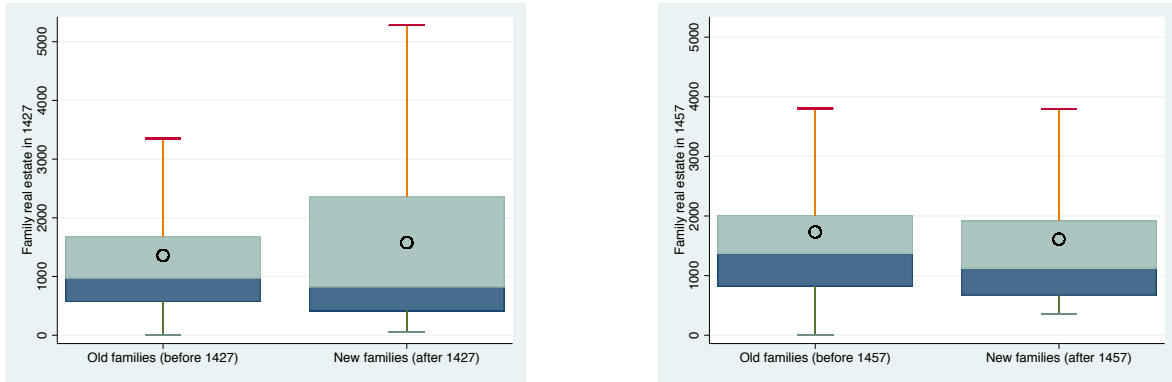


Notes: The graphs show the change in the concentration of office terms among families after 1426 and after 1456. The horizontal axis of the left (right) panel reports the ranking of families in the 1393-1426 (1427-1456) period; the vertical axis reports the share of seats in the three time intervals, 1393-1426, 1427-1456, and 1457-1479 (1427-1456, and 1457-1479).

1393-1426 line, we read that the members of the first family in the ranking, the Ridolfi, seated 56 (out of 3,574) times, which amounts to a share of 1.57%. Following the distribution, we find that 200 families held 87% of the seats and 387 families held 100% of the seats in 1393-1426. A similar interpretation can be made of the lines referring to 1427-1456 and 1457-1479 time intervals, respectively.

Overall, the distribution of power does not seem to have changed much over the entire period considered. If anything, the concentration of power decreased after the advent of the Medici’s regime. However, to understand the execution of the institutional capture and the unraveling of its consequences, it is important to examine the distribution of power, in addition to its concentration. In the left panel of Figure 6, built following Puga and Treffer (2014), we report on the horizontal axis the ranking of families on the basis of their share of seats in the 1393-1426 period and on the vertical axis the cumulative share of seats in the three time intervals, 1393-1426, 1427-1456, and 1457-1479. If after 1427, the “new” families (that held no seats before) were assigned to office, they are ranked according to the seat share of the respective period (1426-1456 or 1457-1479). For example, in the left panel, the first position is still occupied by the Ridolfi (because they were ranked first between 1393 and 1426, with a share of 1.57%), but the corresponding share of seats decreases to 1.22% in the 1427-1456 period and to 1.06% in the 1457-1479 period. The flat segments of the three lines, on the right part of the figure, refer to the families that in a corresponding period obtained zero seats. The “new” families are those that occupied zero seats until 1426 or 1456 and accessed political seats

Figure 7: Distribution of average total wealth for “old” and “new” families.

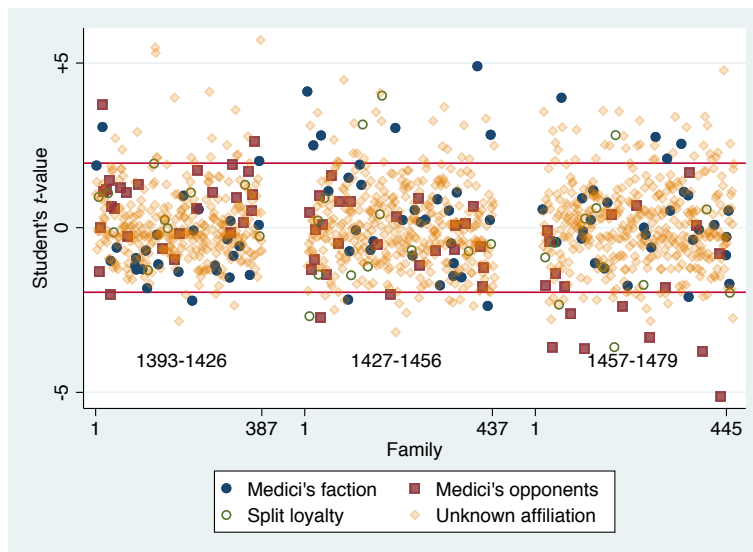


Notes: The box-plots in the left (right) panel depict the distribution of average family real estate in 1427 (1457) for the groups of new and old families. The new families are those that held no office before 1427 (1457) and at least one office after that, corresponding to the “new families” in the left (panel) of Figure 6). The old families are those that held at least one office before 1427 (1457). The dark (blue) areas of the box-plots indicate the fractions of families with average real estate between the first quartile (Q_1) and the median, while the light (green) areas indicate the fractions between the median and the third quartile (Q_3); the lower whiskers are defined between Q_1 and the minimum value of the distribution larger than or equal to $Q_1 - 1.5 \times (Q_3 - Q_1)$, and the upper whiskers are defined between Q_3 and the maximum value of the distribution smaller than or equal to $Q_3 + 1.5 \times (Q_3 - Q_1)$. The black circles denote the sample means.

after that. The first group occupy rank positions between 388 and 533, corresponding to the flat segment of the 1393-1426 line and the concave “well-behaved” section of the 1427-1456 line (these 145 families that had no seats in the first period held about 20% of the available seats between 1427 and 1456). Similarly, the rank positions between 388 and 617 identify the families that held no political office before 1427 but entered the government after 1456: they correspond to the flat segment of the 1393-1426 line and the concave “well-behaved” section of the 1457-1479 line. The right panel of Figure 6 delivers similar pieces of information, but here the “new” families are those that held no seats until 1456 and entered the government after that: they correspond to a number of rank positions between 438 and 536.

Hence, after the Medici rose to power, Florence experienced a significant turnover of the families that had access to the government of the city. As revealed by the comparison across the panels of Figure 6, the alternation of the families in power is more pronounced after 1426 than after 1456, when the Medici’s power was consolidated. What are the characteristics of the “new” entrants? Figure 7 depicts the distribution of average family real estate in 1427 and 1457 for the “old” and the “new” families (in the left [right] panel, the “new” families are those that had no access to the city government before 1427 [1457] and that held at least one term in office after that). Looking at 1427, we observe that the “new” families were on average wealthier and that the distribution of real estate for this group was skewed more upward than for the group of “old” families. This

Figure 8: Drawings and surnames by period.



Notes: The figure plots the Students t -values correspondent to the δ_z coefficients (z denoting the surname) from equation (1) in Section 4. For each sub-period, the number of families reported on the horizontal axis refers to families that held at least one office in the years 1393-1426 (387 families), 1427-1456 (437 families), and 1457-1479 (446 families). The two horizontal lines indicate the two-sided t -test critical values at the 5% level.

piece of evidence suggests that the Medici satisfied a demand for political representation by families that were richer (and thus were paying higher taxes) and nonetheless – before the Medici’s advent – were excluded from the political process. When looking at 1457, by contrast, we observe that the distributions of real estate for the “old” and “new” families are much more similar to each other.

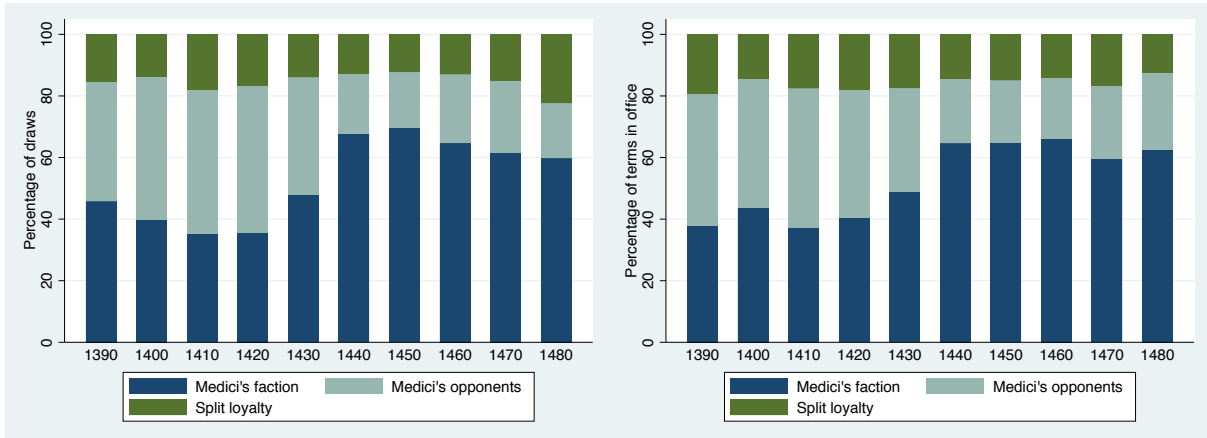
Next, we investigate whether family surnames and affiliations were important determinants of political participation and, thus, whether the degree of randomness in the *Tratte* system changed after the Medici’s advent. To see this, we treat the surname as an “observable” in the drawing process and run a battery of regressions for a number of times equal to the number of families that held at least one office over the period, as follows:

$$draws_{is} = \alpha + \delta_z S_s^z + \xi_{is}, \quad (1)$$

where $draws_{is}$ is the number of times individual i with surname s was drawn in the relevant sub-period, and S_s^z is a dummy equal to one if $s = z$ and zero otherwise.

In Figure 8, we plot the Student’s t values of the coefficients δ_z , which refer to each family in each of the three time intervals considered and denote with different colors and symbols the dots according to the political faction to which each family belonged in 1426. On the x -axis, we report the number of families in each sub-period (1393-1426, 1427-1456, and 1457-1479). The two horizontal lines denote the critical values of the two-sided t -test at the 5% level. As one may notice,

Figure 9: Fractions of draws and terms in office by 10-year interval and political faction.



Notes: The charts show the relative frequency of, respectively, draws and terms in office by family groups and 10-year intervals over the sample period. The percentages are computed without including individuals with unknown political affiliation.

the number of dots above and below the two horizontal lines is much higher in the years after the Medici began their rise to power than before. For the period between 1393 and 1426, among the dots that lie above the upper line, only three correspond to families that can be associated with a political faction: one was close to the Medici and two were their opponents, whereas the one dot below the lower line is associated with the Medici's network. Between 1427 and 1456, all dots above the positive threshold correspond to families that can be associated with a political faction belonging to the Medici's network. The same is true in the 1457-1479 interval, where we also observe that all the dots below the negative threshold (with the exception only of those marked by no affiliation) are associated with the Medici's opponents.

Finally, to assess how the manipulation of the process of office affected the distribution of power in Florence, we look at whether the representation in the city government of the different political factions changed after their ascent to power. Figure 9 shows the relative frequency of seen (left panel) and seated (right panel) individuals by family groups and 10-year intervals over the period of interest. As one can observe, the percentage of individuals whose names were drawn from a bag and seated was roughly the same for the Medici and their opponents until the end of the 1420s. Afterwards, the fraction of office holders belonging to the Medici's faction increased, while that of their opponents was substantially reduced.

5 Consequences of the institutional capture

5.1 Political participation and individual wealth positions

We now investigate the implications of the institutional capture for the office holders' relative positions in the wealth distribution of 1427, 1457, and 1480. To mitigate possible concerns related to the presence of pre-trends in households' wealth accumulation and political participation, we study the link between individual number of office terms and percentile ranks in each wealth assessment. To this end, we run the following regression model:

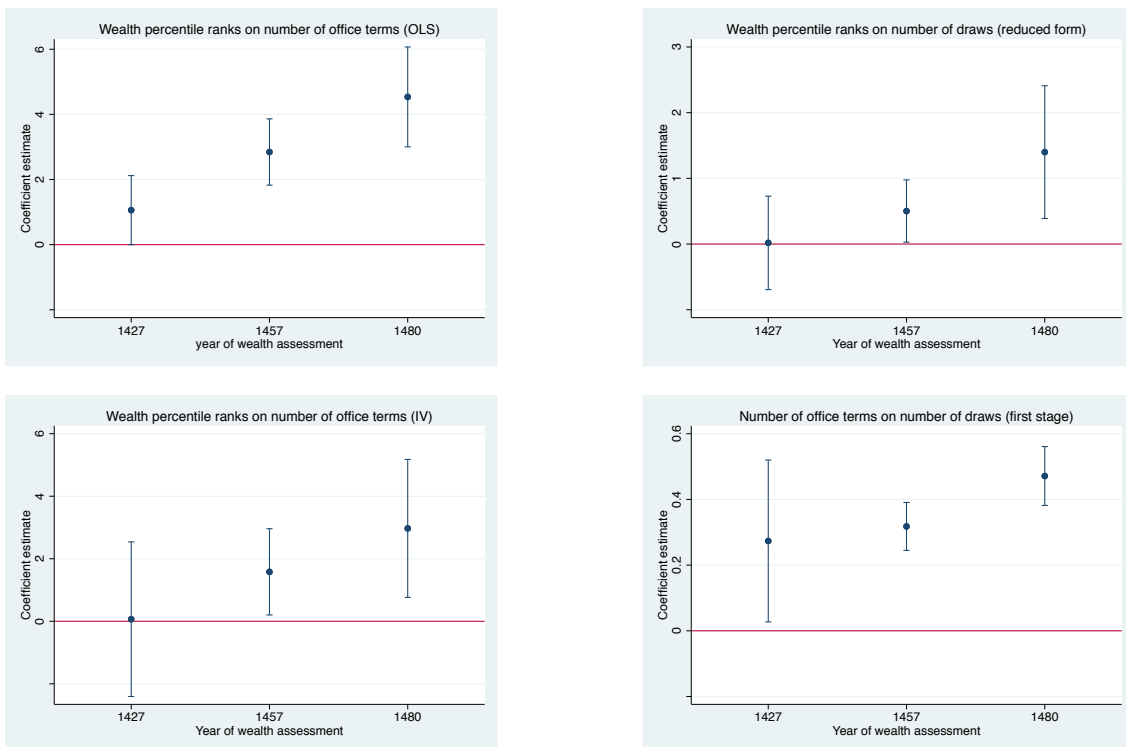
$$prank_i = \beta terms_i + \gamma_i^{neigh} + \gamma_i^{bag} + \gamma_i^{office} + \varepsilon_i, \quad (2)$$

where $prank_i$ is the percentile rank of individual i (head of the family) in the coeval real estate distribution (1427, 1457, or 1480); $terms_i$ is the individual number of terms held in the previous period (1393-1426, 1427-1456, 1457-1479); and γ_i^{neigh} , γ_i^{bag} , and γ_i^{office} are fixed effects for, respectively, the most frequent neighborhood of individual i , the most frequent type of bag from which individual i 's name was drawn (which captures the effect of the guild), and the most frequent office held by individual i .²³ Ultimately, we are interested in understanding whether the estimated β from equation (2) changes over time and, in particular, from 1427 (before the Medici's advent) to 1480 (after consolidation of their power).

Estimation results are shown in Figure 10 (detailed output is reported in the Appendix, Table A.3). The upper-left panel reports the estimated β coefficients from regression model (2) and the associated confidence intervals at the 90% significance level for the three periods considered. Visual inspection reveals that they are all positive and lie on an increasing trend between 1427 and 1480. For example, holding an additional term in office in the 1393-1426 period is associated with a 1.15 higher percentile rank in 1427, whereas holding an additional term between 1457 and 1479 is associated with a 4.58 rank higher in 1480. While only the coefficients estimated for the first period (1427 wealth assessment) and the last period (1480 wealth assessment) are statistically different, this evidence suggests that the association between an individual's political participation and his position in the wealth distribution increased after the Medici rose to power. These results are robust when we also control for measures that proxy for the ex-ante probability to be drawn (see Table A.4 in the Appendix). In particular, a second order polynomial of the time lapsed since the first

²³Bag fixed effects are a set of three dummies for *Arti Maggiori* and *Arti Minori* (the most and the least important guilds), and the so-called *Borsellino*. Notice that, since in some cases the type of bag, the neighborhood (in a few cases), and the office changed throughout the individual's political lifetime, we consider the most frequent ones for each of them.

Figure 10: Political participation and individual wealth position.



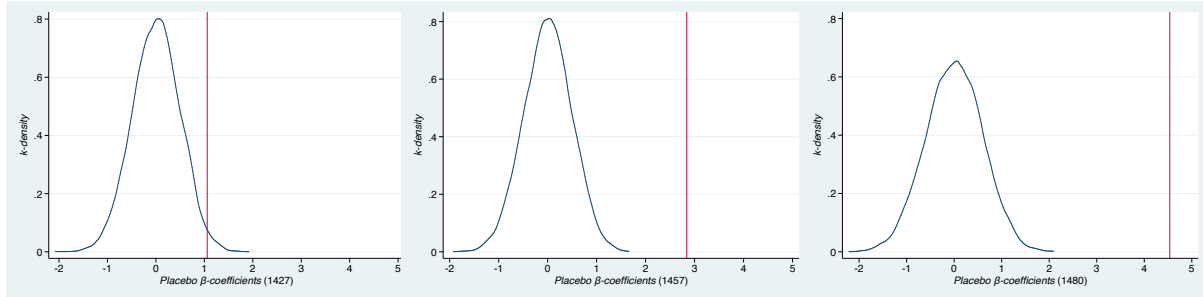
Notes: The graphs plot estimation outputs from regression model (2), for the three periods under analysis: wealth assessments in 1427, 1457, and 1480 and the office assignment in the periods of, respectively, 1393-1426, 1427-1456, and 1457-1480. The dots denote the estimated β coefficients, while the vertical lines indicate confidence intervals at the 90% level. The upper-left panel reports results from the OLS regression of wealth percentile ranks on the individual number of terms in office. The upper-right panel reports results from the reduced form regression of wealth percentile ranks on the individual number of draws. The lower-left panel reports results from the IV regression of wealth percentile ranks on the individual number of terms in office, instrumented with the individual number of draws in the same period, whereas the lower-right panel shows results from the related first stage. All the regressions control for the most frequent neighborhood, the most frequent type of bag, and the most frequent office fixed effects. Standard errors are clustered at the neighborhood (*Gonfalone*) level.

time an individual's name was drawn from a bag (the longer the time lapsed from the first time an individual was seen, the larger was the probability of being drawn again) and a set of dummies for the number of bags in which an individual name was included in each period.²⁴

One might wonder the previous findings to be an artifact of the combined effect of an increasing trend in individual wealth occurring over time and an enlargement of political participation during the Medici's regime. While this concern is attenuated by the fact that the dependent variable of our main specification is the individual relative wealth position (and not the wealth level), we also run the following placebo permutation test. We randomly assign the number of individual terms observed in each of the three periods under analysis to individuals in the correspondent samples, hence building a "fake" $terms_i$ variable. Then, we use it as an independent variable in equation (2)

²⁴Bags are identified on the basis of four variables: date of creation, type of bag, neighborhood, and office.

Figure 11: Placebo permutation test.



Notes: The graphs plot the probability density function of the estimated β coefficients from the placebo permutation test as explained in the text, iterated 10,000 times. The vertical lines indicate our true point estimates (1.0589, 2.8448, 4.5364), plotted in the upper-left panel of Figure 10, for the three periods, respectively.

in place of the actual one. We repeat for 10,000 times (employing alternative numbers of replications do not affect our results in any significant way) and save the estimated β coefficients. Figure 11 depicts the probability density function of the placebo point estimates and the vertical line indicates the true point estimates plotted in the upper-left panel of Figure 10, respectively for the three time periods. As one can see, while for 1427 the true estimated coefficient has some chances to be randomly generated by the data, for 1457 and 1480 this seems quite unlikely: in both cases, the true estimated coefficient is placed on the right of the density bell and the correspondent vertical line never intersects it.

5.2 Channels

We are now interested in understanding the channels underlying these results. To determine this, consider that the estimated β coefficients in regression model (2) capture the return to office and, in addition, the effect of possible confounding factors, the most important being selection on (ex-ante) ability. For example, if the probability of rejection after being drawn is correlated with the “unobservables” in equation (2) so that high ability individuals held more terms in office than others, the OLS coefficient would capture this selection effect too. Hence, looking at the upper-left panel of Figure 10, we are unable to say whether the increasing positive association between political participation and individual wealth accumulation observed across the three periods under examination is due to an increasing selection effect over time (i.e., the individuals involved in the political process after 1427 had a higher level of ability than those selected before), to an increasing return to office (i.e., after 1427, office holders could carry out rent seeking activities that were not possible before), or both.

We first gauge the extent to which the (low) positive correlation between political participation and wealth positions in the period before the Medici’s advent is due to selection or to return to office. In particular, we exploit the fact that being seated is conditional on being drawn. Thus, we use the number of draws as an instrument (IV) for the number of terms in office. We need two identifying assumptions in this case: the first requires that draws are random conditionally on the controls in equation (2) (exogeneity), and the second holds that the number of draws is correlated with the individual percentile rank in the wealth distribution only through the number of terms in office (exclusion restriction). These assumptions are supported by the historical narrative (Rubinstein, 1966), suggesting that randomness of the drawing process before the Medici’s advent was credible and the institutional setting in use in that period ensured absence of a direct effect of draws on office holders’ wealth accumulation. In this case, the IV parameter, $\hat{\beta}_{IV}$, can be deemed a consistent estimate of β , hence capturing the return to office.²⁵

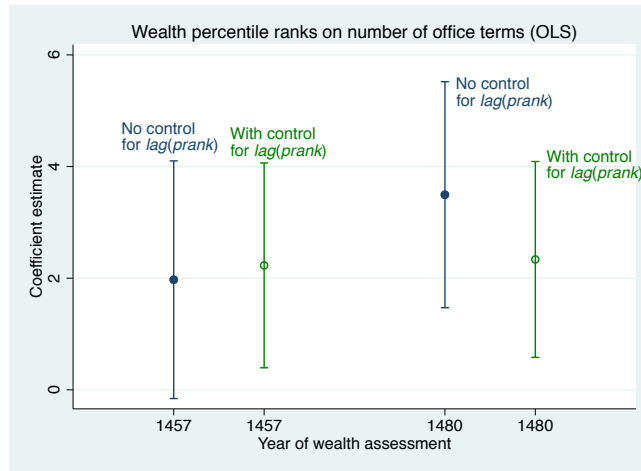
The upper-right panel of Figure 10 provides information on the reduced form regression, namely model (2), where we replace as the main regressor the number of office terms with the number of draws, which is our IV. It turns out that the point estimate on the number of draws in 1427 (of which we can give a causal interpretation, under the above assumptions) is zero, with the upper extreme of the confidence interval well below one. The point estimates for the two subsequent periods are, instead, positive and precisely estimated but, in light of the above discussion on the institutional capture (Sub-section 4.2), can hardly be interpreted as causal effects of political participation on individual wealth positions.

The bottom-left panel shows the IV (second stage) estimated coefficients for the three periods. Overall, this exercise suggests that the return to office in 1427 (IV coefficient) is null and that the small OLS coefficient estimated for the 1393-1426 period likely reflects a selection effect rather than a return to office. For completeness, the bottom-right panel of the figure reports the first stage in the three periods, namely the conditional (on the control variables of regression model (2)) correlation between the number of office terms and the number of draws.

As for the correlation between political participation and individual wealth accumulation in the Medicean period, we first re-estimate regression model (2) by including the lagged percentile rank ($lag(prank_i)$) as a control and verify whether, in consequence of that, the point estimate on the number of terms changes. (We cannot perform this exercise for 1393-1426 period because we do not have a wealth assessment registered before 1427.) Under the assumption that the lagged percentile rank captures a relevant part of the characteristics correlated with the “unobservables” in model

²⁵Figure 8 supports the notion that draws were orthogonal to unobservables in the pre-Medicean period.

Figure 12: Political participation and wealth percentile ranks (controlling for the lagged wealth percentile rank).



Notes: The figure plots estimation output from equation (2) in Section 5, for the two periods under the Medicean regime, with and without controlling for the lagged wealth percentile ranks ($lag(prank)$): wealth assessments in 1457 and 1480 and the office assignment periods in, respectively, 1427-1456 and 1457-1480. The dots denote the estimated β coefficients, while the vertical lines indicate the confidence interval at the 90% level. The number of observations for each time period is kept constant. All the regressions control for the most frequent neighborhood, the most frequent type of bag, and the most frequent office fixed effects. Standard errors are clustered at the neighborhood (*Gonfalone*) level.

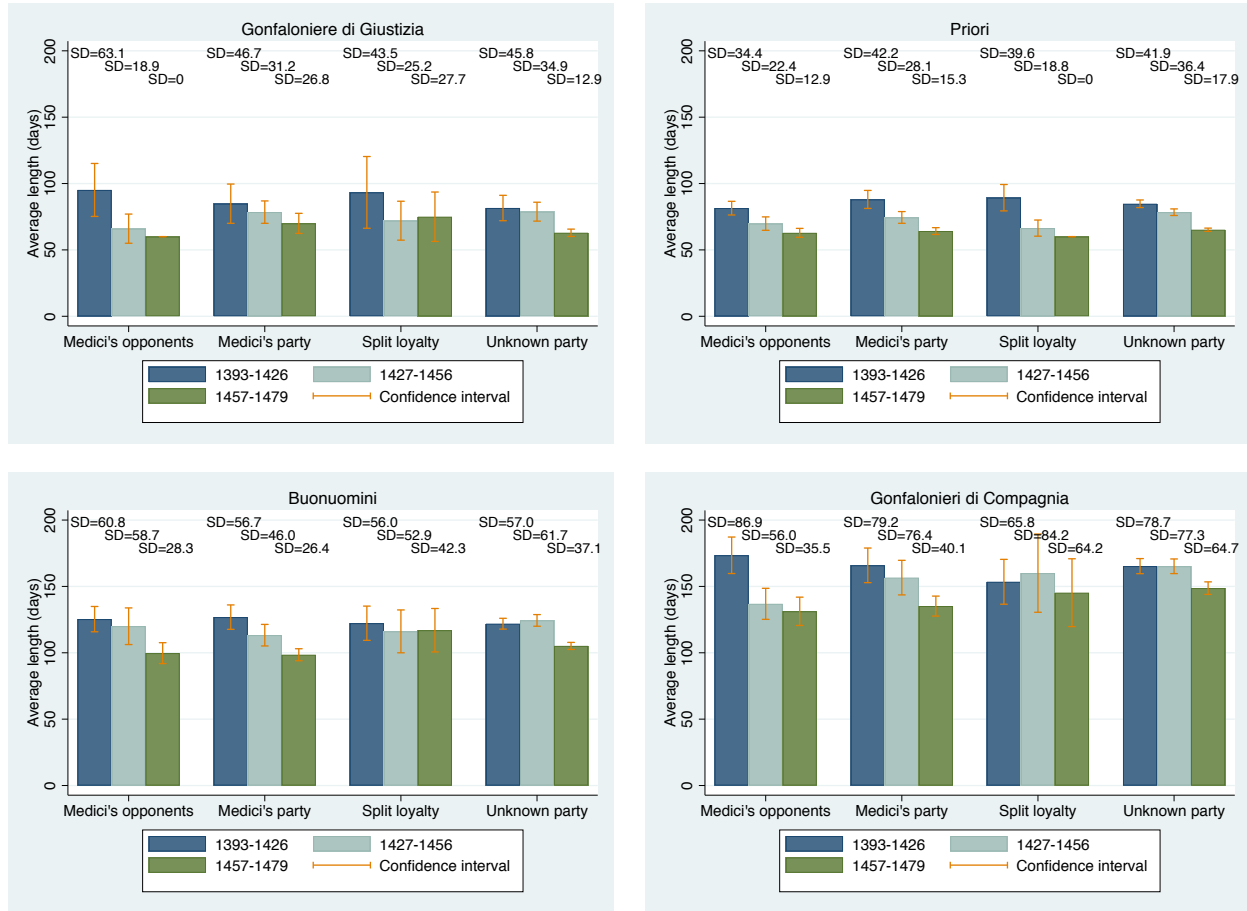
(2), from this exercise, we gauge the effect of whether the results in the upper-right panel of Figure 10 are due to selection (should the estimated coefficient drop significantly) or to a positive return to office (in the opposite case).

Figure 12 compares the estimated coefficients from equation (2) with (empty dots) and without (full dots) controlling for $lag(prank_i)$, keeping constant the number of observations in the 1427-1456 and 1457-1479 periods (estimation output is reported in Table A.5 in the Appendix).²⁶ As we can see from the figure, the correlations between political participation and the individual position in the wealth distribution is not significantly lessened by the inclusion of the lagged percentile rank in the regression model. This suggests that the estimated association between office terms and wealth accumulation is unlikely to be entirely due to a selection effect, while a positive return to office operating after the ascent of the Medici to power can explain our baseline results.

This interpretation is corroborated by the information provided in Figure 13, reporting the average time in office in number of days and the correspondent 90% confidence interval by period, by political affiliation, and by type of office. Under a selection on ability mechanism, the Medici, who had high stakes in the public debt, should have been interested in appointing capable individuals

²⁶Compared with the results reported in Figure 10, the sample size is reduced because there is a smaller number of individuals (whose name was drawn from the lottery for political participation) registered in both the 1457 and the 1480 wealth assessments.

Figure 13: Time in office before and after the institutional capture.



Notes: The charts show the average time in office (days) and the corresponding confidence interval at the 90% level for the three time periods: 1393-1426, 1427-1456, and 1457-1479. Above each bar, we also report the corresponding standard deviation (SD).

to take care of the government and of the economic affairs of the city. However, should this be the case, we would observe an increase in the dispersion of the time in office before and after the rise of the Medicean regime as high-ability citizens are expected to stay in office longer than average- and low-ability citizens. As one can see, this is not supported by Figure 13, where we also report the corresponding confidence intervals at the 90% level and the standard deviations.²⁷

Overall, while the selection on ability cannot be completely excluded as a channel, it does not seem to fully explain the different results between individual wealth positions and political participation before and after the Medici's rise to power.

²⁷Notice that the standard deviation of the number of terms as *Gonfaloniere di Giustizia* for the Medici's opponents in the 1457-1479 period is equal to zero because only five individuals in this group held such an office in that period and all for a single term.

5.3 Returns to office

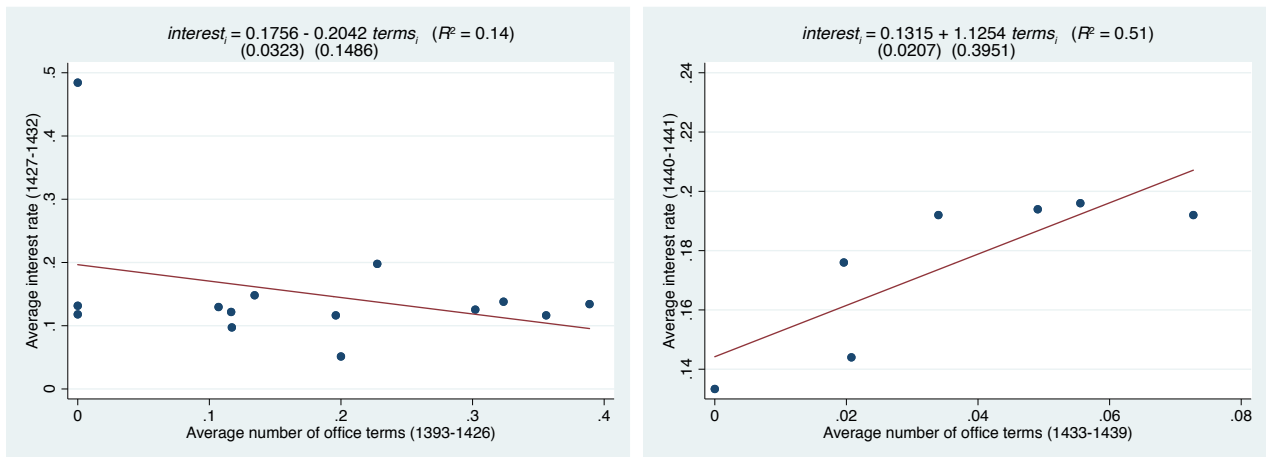
A possible mechanism underlying the difference between conditional correlations of individual wealth positions and political participation across time periods could be that, in the Medicean period, office holders managed to maintain control for longer periods than before. This would give them the opportunity to gather better information, develop networks of relationships, and thus accumulate more individual wealth by exploiting their political positions. This hypothesis seems, however, to be rejected by our data summarized in Figure 13. As one can observe, time in office, if anything, decreased after the advent of the Medici for almost every office and political faction.

A second mechanism potentially driving an increased return to office under the Medicean rule is that individuals accessing the government after 1427 were allowed to extract rents by seizing public resources, while this was somehow impeded in the previous period. This could be the joint result of the selection of office holders based on their proximity to the Medicis network (patronage) and of individual appropriation of public resources (rent extraction). Rent extraction can take several forms, including bribery and corruption, and it is usually difficult to document empirically. In this section, we look into a possible way through which appropriation of public resources might have occurred in the Medici's Florence: voluntary money-lending to the Republic. In particular, we are able to exploit a unique source of data documenting the terms of individual lending contracts and their evolution over time in our period of interest.

As we have explained in Sub-section 3.2, during the 1420s, the city of Florence was involved in a series of wars, first against Milan and then to conquer Lucca. This intense military activity challenged the fiscal capacity of the Republic and made it necessary to find additional sources of revenue, besides indirect taxes and forced loans. Voluntary loans, which had been occasionally used in the previous century, became a more important source of liquidity in these years. In addition, the generous interest rates that they paid, higher than those on the forced loans, and the guaranteed repayment of the principal by the earmarking of revenues from indirect taxation, made such a fiscal instrument an attractive investment for the wealthy citizens. They were administered by the *Ufficiali del Banco*, who were appointed by the *Signoria*: they managed the collection of public resources and, starting from 1424, were also asked to find voluntary lenders.

We have collected data from selected available yearly registers of the *Ufficiali del Banco* (1427-1455). These registers are held in the Florentine State Archive, *Camera del Comune* (Archivio di Stato

Figure 14: Interest rates and number of terms in office before and after the consolidation of the Medici's power.



Notes: The left panel plots the linear fit between the family average interest rate of the voluntary loans in 1427-28 and 1430-31 and the average number of terms between 1393 and 1426. The right panel plots the linear fit between the family average interest rate in the 1440-41 period and the average number of terms between 1433 and 1439. The figures also report the estimated coefficients of the corresponding linear regressions.

Fiorentino, Camera del Comune, 1432).²⁸ Complementing the work by Molho (1971), who collected the total amounts of credit for a number of lenders, we selected and digitized three registers that contain the largest availability of data on voluntary loans for the 15th century and cover the three periods of 1427-28, 1431-32, and 1440-41. These registers include the names of the officials who managed resource collection, the amount of voluntary loans provided by citizens, the corresponding interest rates, the lengths of the loans, and the payments made to soldiers and mercenary troops.

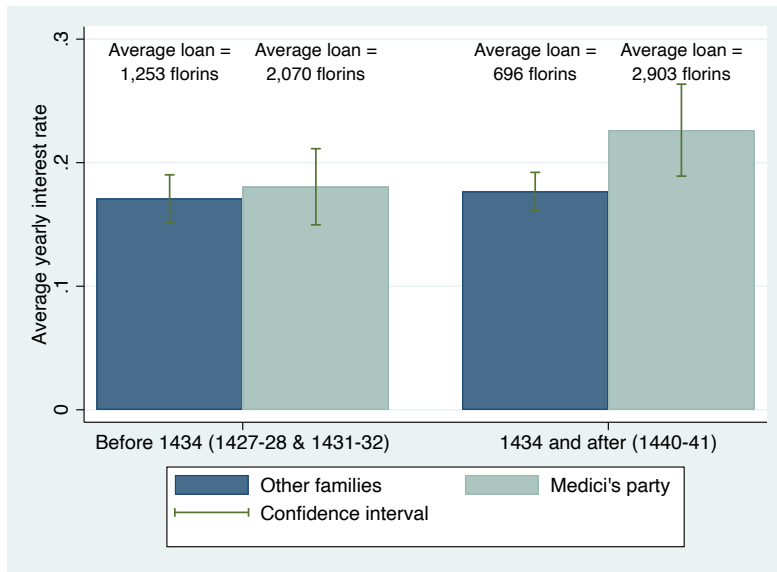
From the three registers, we collected information on 159 loans provided by the citizens in the corresponding year-intervals (1427-28, 1431-32, and 1440-41).²⁹ These are all the loans for which we could identify the political faction to which the lender belonged (Medici's network, Medici's opponents, and individuals with split loyalty). In the registers, these loans had lengths varying from one to seven months (average of 3.21 and standard deviation of 1.17) and implicit yearly interest rates varying from 5% to 50% (average of 18% and standard deviation of 11%).³⁰ The total

²⁸From a formal point of view, the *Ufficiali* had to abide by the usury legislation that was in force in the private credit market, and which implied an interest rate no higher than 5-10%. However, they often bypassed these restrictions, setting up "dry exchange" practices (*cambium secum*). This mechanism implied that the original loan, paid in Florentine gold florins, was denominated in a foreign currency, e.g. the Venetian *lira di grossi*. Then, at the time of the restitution, the foreign currency was claimed to be appreciated against the Florentine florin. The currency appreciation resulted from a manipulation of the exchange rate such that it turned out to be equal to the interest rate agreed between the *Ufficiali* and the voluntary lenders. While no formal interest was paid (dry exchange), a premium was disguised through the variation of the exchange rate (Molho, 1971, p.172-173).

²⁹In two out of 159 cases, we found no information regarding the length of the contract and the interest paid for the loan.

³⁰Very high interest rates were paid during the war and are comparable to the ones documented by Molho (1971).

Figure 15: Average interest rates by group of families before and after the consolidation of the Medici's power.



Notes: The figure shows the average interest rates for the group of families belonging to the Medici's political faction and for the group of other families before and after the consolidation of the Medici's power. Implicit interest rates are computed based on the *cambium secum* mechanism described in Sub-section 6. Confidence intervals are at the 90% level. Above each bar, we also report the average amounts of loans in florins for the two groups of families (data described in Sub-section 6).

number of lenders, identified by the surname, and first and second names, is 28; the total number of families, identified by surname, is 21.

Exploiting these data, we investigate the presence of a relation between interest rates paid by the Republic and political participation. In particular, we compute the average interest paid to citizens with the same family surname and we regress this on the average number of times the members of that family were in office before the interest rates were paid. We conduct this exercise before and after the institutional capture. In Figure 14, we report these correlations.³¹ Each dot is associated with a family. While the number of data points is admittedly too small to draw clear-cut conclusions, the negative and not statistically significant correlation for the period before the institutional capture (left panel) and the positive statistically significant correlation for the period after the consolidation of the Medici's power (right panel) supports the interpretation that rent extraction from public office is potentially a prominent channel driving the relation between political participation and wealth accumulation.

Did this positive association affect individuals belonging to different political factions equally?

Figure 15 shows the average interest rates for the members of the Medicean network and for other

³¹An analysis at the individual level was not possible because, in our data, the number of lenders holding political offices in the two periods covering the loans is small.

individuals, before and after the consolidation of the Medici’s power. As a cutoff year, here, we take 1434, when Cosimo returned to Florence from exile.³² As one can see, before 1434, the interest rate was on average the same for the two groups of lenders. By contrast, starting from 1434, it increased for individuals belonging to the Medici’s group but not for the others, and the mean difference is statistically significant at least at the 5% level (p -value of the t -test is equal to 0.0142). From the figure, we also see that, in the first period considered, the average amount of loans for contracts signed by families belonging to the Medici’s political faction was slightly larger than that signed by other families, and this difference dramatically increased after the consolidation of the Medici’s power.

One possible mechanism sustaining this equilibrium outcome is that the Medici’s opponents could not access information about the interest rates paid to the Medici’s network members. A second mechanism is that, even if they had such information, they could not deal an interest rate as high as that negotiated by the Medici because of the structure of their network. This second hypothesis is coherent with the findings by Padgett and Ansell (1993) and Jackson (2008): the high betweenness centrality of the Medici made collusion and control much easier for them than for their opponents.

6 Impact on wealth distribution and costs of the Medici’s political machine

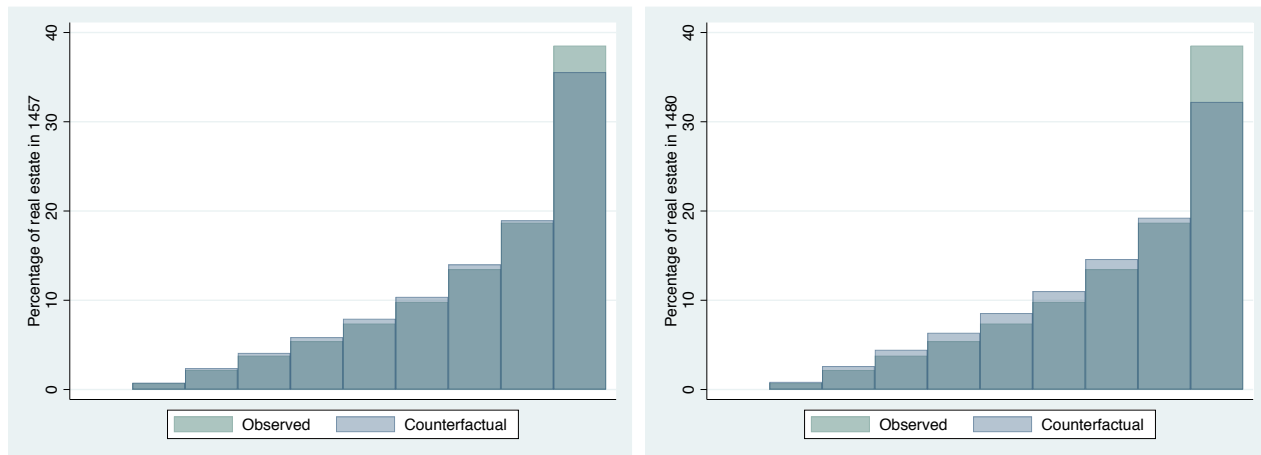
We now investigate how this appropriation of public resources by the office holders affected coeval wealth distribution. To do this, we build the series of “counterfactual” real estate, that is, the real estate that individuals would have owned in 1457 (1480) in the absence of the institutional capture. Accordingly, we first estimate the following modification of model (2):

$$\log(\text{realestate})_i = \beta \text{terms}_i + \gamma_i^{\text{neigh}} + \gamma_i^{\text{bag}} + \gamma_i^{\text{office}} + \varepsilon_i, \quad (3)$$

where $\log(\text{realestate})_i$ is the log of real estate of individual i in 1427 (1457, or 1480), terms_i is the individual number of terms held in the period before wealth registration, 1393-1426 (1427-1456, or 1457-1479), and γ_i^{neigh} , γ_i^{bag} , and γ_i^{office} are neighborhood, bag, and office fixed effects, respectively. Then, the counterfactual real estate in 1457 (1480) is given by $\text{realestate}_i + (\hat{\beta}_{1427} - \hat{\beta}_{1457}) \times \text{terms}_i \times \text{realestate}_i$, where realestate_i is the real estate of individual i in 1457 (1480), $\hat{\beta}_{1427}$ and $\hat{\beta}_{1457}$ ($\hat{\beta}_{1480}$)

³²We did not find any significant difference in the loan lengths between the two periods or across political factions.

Figure 16: Effects of the institutional capture on wealth distribution.



Notes: The left (right) panel plots, for each decile of the wealth distribution, the correspondent fraction of actual real estate and of the “counterfactual” real estate in 1457 (1480).

are the estimated coefficients from equation (3) for each period (results reported in Table A.6 in the Appendix), and $terms_i$ is the number of terms in office held by individual i in 1427-1456 (1457-1479).

For each decile of the observed wealth distribution in, respectively, 1457 and 1480, we compare fraction of real estate that individuals actually owned and fraction of counterfactual real estate. Figure 16 plots these comparisons (left panel for 1457 and right panel for 1480). As is evident, for both years, individuals in the top decile gained from the institutional capture (their fraction of the actual real estate is larger than the “counterfactual”) at the expenses of individuals in the other deciles. This effect of redistribution from the bottom and middle wealth classes to the top of the real estate distribution is more evident for 1480, after the consolidation of the Medicean regime.³³ Note that, should we assume that the difference between $\hat{\beta}_{1427}$ and $\hat{\beta}_{1457}$ is due in part to an increase in selection rather than rent extraction between the two periods, the effects of the institutional capture on the distribution would not change (only the size of the redistribution would be different).

How costly was this resources appropriation in terms of dead-weight loss of total wealth? To answer this question, we run the following back-of-the-envelope exercise. First, we re-estimate model (3), employing the log of individual total wealth in 1457 (as explained in Sub-section 3.2, we do not observe total wealth in 1480) as a dependent variable and the individual number of terms held in 1427-1456 as the independent variable. Results (reported in Table A.7 of the Appendix) suggest that an additional term in office was associated with an increase in total wealth of about 17%. Considering that each year a total of 150 offices were assigned (one *Gonfaloniere di Giustizia* and eight *Priori* lasting for two months, and 12 *Buonomini* and 16 *Gonfalonieri di compagnia* lasting

³³Results would not change should we assume the extracted resources to be equally redistributed across deciles.

for three and four months, respectively), the average total wealth at the beginning of the Medicean period (1427) was 4,785 florins. Second, using the conservative assumption that only one third of the association between individual wealth and office holding was due to returns to office driven by rent extraction, we estimate the total amount of resources extracted per year, that turns out equal to 40,672.5 florins.³⁴

To gauge the magnitude of these amounts of resources in economic terms, we can look at the estimates provided by Conti (1984), who was able to calculate the total amount of forced loans in the years 1429-1432 and 1435. These figures increased over time because of the Lombard wars.³⁵ Considering the years associated with the lowest and the highest total tax revenue, our calculations suggest that the yearly total cost of the Medici's political machine was between 5.8% and 22.6% of the total amount of forced loans in Florence in a given year. These lower and upper bounds give an idea of the burden of the capture of the political system captured by the Medici on the city of Florence.³⁶

7 Conclusions

From the foundation of the independent city-state in the 12th century until the 15th century, the city of Florence was governed by political institutions characterized by a relatively extensive franchise and a system of checks and balances on political power. In particular, in the period between the early 14th century and the end of the 15th century, the city government was appointed by the means of a selection mechanism granting representativity to citizens belonging to the major guilds and the neighborhoods of the city. The Florentine government was also characterized by short office terms and the allocation of political offices by a combination of election and lottery. Such a political system was able, for about one century, to grant diffuse access to governmental offices and limit the possibility of exploiting political positions for personal interests.

In this paper, we show that the crises of Florentine public finances triggered by the Lombard wars gave the opportunity to the Medici family to exert influence on the city government and

³⁴This result is obtained by the following computation: $150 \times 4,785 \times 0.17 \times (1/3)$.

³⁵More precisely, we obtain: in 1429, 193,231 florins; in 1430, 628,758 florins; in 1431, 690,293 florins; in 1432, 527,209 florins; and in 1435, 179,212 florins.

³⁶An alternative approach to assessing the magnitude of the total cost of the institutional capture is to provide an estimate of the size of the rents directly extracted by the Medici's faction. An overall assessment of these rents would require data that, to the best of our knowledge, are not available in the archives. However, we can attempt to provide an estimate of the rents extracted by the Medici through the voluntary loan contracts stipulated with the Republic. As we have reported in Figure 15, after the consolidation of their power, the Medici's faction benefited from an average interest rate of 5 percentage points higher than the one granted to other creditors. If we take as an example the 1441, the cost of such an extra reward amounts on average to 1,261 Florins for a contract with an average maturity of 2.3 months, it corresponds to about 0.7% of the forced loans raised by the Republic in a year (about 3% of a quarter tax revenue).

ultimately to capture the system of office allocation. Moreover, using original primary sources about political participation and individual wealth assessments, we document that, before the rise of the Medici to power and under the Florentine Republic, an increase in the access to political offices was not associated with better positions in the coeval wealth distribution until the late 1420s. Instead, the association between political participation and individual wealth positions was positive and statistically significant after the rise and the consolidation of the Medici's power. In our back-of-the-envelope exercise, we also show that the political machine built by Cosimo de' Medici, based on patronage and rent extraction, allowed the individuals at the top of the wealth distribution to further improve their position at the expenses of the other individuals and that this diversion of resources was socially costly.

Taken together, our findings suggest that, in contexts of high wealth concentration, political institutions may become vulnerable to the wealthy elites when their resources become instrumental to the provision of essential public services. Under these circumstances, the wealthy might be able to influence the political process and, as a consequence, exploit political positions to further increase their resource accumulation, thereby triggering vicious cycles (Zingales, 2017).

The informal mechanisms of political consensus that supported the Medici's regime became much weaker after Cosimo's death. Under the brief rule of his son Piero (1464-1469) and the longer reign of his grandson Lorenzo the "Magnificent" (1469-1492), the Medici maintained their power but also faced growing difficulties stemming from the decline of their banking activity (De Roover, 1966), as well as new external and internal political threats, such as the war against Volterra (1472) and the Pazzi's conspiracy (1478). Lorenzo was certainly capable of affirming his political and cultural influence on the city, but nonetheless, during his government, the private financial troubles of the family had repercussions both on its capacity to draw political consensus and on the overall fiscal health of Florence (Brown, 1992).

In 1492, Lorenzo was succeeded by his son Piero II, the "Unfortunate". Two years later, under the expansionary threats of the King of France, Piero made a series of foreign policy decisions that posed a serious risk to the independence of the Republic and, therefore, the prosperity of the city's elites. Under a political system that was formally still a Republic, the members of the *Tre Maggiori* were effectively able to oppose Piero's policies and interrupted his regime. Piero held no institutional power to resist their decision and was condemned to exile (Rubinstein, 1966, p. 279-286).

After the flight of Piero, the *Tratte* and the *Tre Maggiori* were suspended and a new regime was established, the so-called *Governo Popolare*. Its functions were centered around a new council

of 3,000 citizens, the Great Council (Najemy, 2006) that held *de jure* power. However, about 20 members (*pratiche strette*) belonging to the political factions against the Medici exercised *de facto* power (Rubinstein, 1963; Cooper, 1984). This new regime was, in fact, the epilogue of the once glorious Florentine Republic. When in 1512 the Medici, with the help of Pope Julius II, restored their power, they re-established the offices of the *Tre Maggiori*, but this time under their full control, laying the cornerstone for the creation of the long-lasting Grand Duchy of Tuscany.

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A ONLINE APPENDIX

Data details

Merging datasets for regressions

The original *Tratte* dataset covers information on 8,416 individuals for the period 1393-1480; this number shrinks to 6,614 after we drop individuals with no surname, to 6,485 after we drop individuals with no patronymic, to 6,435 after we drop individuals with no indication of the neighborhood (*quartiere/gonfalone*), and to 6,221 after we drop notaries (that, as we said in Sub-section 3.1, are excluded from our analysis). The originally digitized 1427 *Catasto* includes 9,780 individual observations; after dropping individuals with no surname and duplicates we remain with 3,609 data points with a valid wealth entry. The 1457 *Catasto*, which we digitized, contains 7,455 individual observations, that become 3,625 data points with a valid wealth entry after we drop individuals with no indication of the neighborhood (*quartiere/gonfalone*). The 1480 *Catasto* includes 8,412 individual observations that give 4,038 valid real estate entries.

After spellings checks (see below) and the merging procedure among the various datasets, we end up with 484 individuals whose name was drawn at least once between 1393 and 1426 and that have a valid entry for wealth in 1427, 861 individuals whose name was drawn at least once between 1427 and 1456 and that have a valid entry for wealth in 1457 (of these 200 also have also a valid wealth entry in 1427), and 1,083 individuals whose name was drawn at least once between 1457 and 1479 and that have a valid entry for wealth in 1480 (of these 280 also have also a valid wealth entry in 1480).

Finally, notice that, as said in the text, bags are identified on the basis of four variables: date of creation, type of bag, neighborhood, and office. The date of creation is sometimes missing and, for this reason, it is possible that we sometimes attached the same identification number to bags existed in different time periods.

Spelling rules

In preparing the five datasets (1427 *Catasto*, 1457 *Catasto*, 1480 *Catasto*, *Tratte*, dataset of the *Ufficiali di Banco*) for the merging procedure, we verified that the spelling of names and surnames followed the same rules. As a preliminary analysis, we used an excel similarity macro to compare the name strings and establish a degree of similarity across them

(<https://www.credera.com/insights/excel-tips-fuzzy-lookup/>). Then, we visually inspected the most similar records and evaluated their correspondence case by case, to identify the rules. When it appeared that the same name or surname was written with a different rule, we followed the spelling used in the *Tratte* dataset.

Surnames

As regards surnames, we implemented the following rules.

1. Variants and information on multiple surnames followed Herlihy et al. (2002). Accordingly, when a family had two or more surnames as reported in Herlihy et al. (2002), we associated individuals always with the same single surname, that coming first in alphabetic order. For

instance, ALDOBRANDINI, NERI and DELNERO according to Herlihy et al. (2002) were the same family, in our dataset NERI and DELNERO became ALDOBRANDINI.

2. Surnames were always truncated to 11 digits, and changed accordingly whenever in the original dataset this rule was not followed (this is true both when the surname reported in the original dataset was longer than 11 digits and when it was shorter -in general 10 digits long- with the last letter missing). For instance, ARDINGHELLI was changed in ARDINGHELL; BOLDRONCINI was changed in BOLDRONCIN; BRACCIOLINI was changed in BRACCIOLIN; DELLANTELL was changed in DALLANTELLA.
3. When multiple variants appear or in case of suspected typo mistakes, surnames were changed to follow the spelling rules in the *Tratte* dataset. A list of cases is reported below:
 - (a) A letter of the surname is in a different position: for instance, BELFRADELLI and BELFARDELLI.
 - (b) There is a double consonant instead of a single consonant (this can happen even twice in the same word): for instance, CERRINI and CERINNI; DAVIZZI and DAVIZI.
 - (c) The *H* appears in some variants and not in others: for instance, DELTEGHIA and DELTEGLIA; BARDUCCHI and BARDUCCI.
 - (d) There is a different vocal in the same position within the word: for instance, CAVICCIOLI and CAVICCIULI; CEFFINI and CEFFONI; CAMPIOBBESI and CAMPIUBESI.
 - (e) There is an extra vocal, in general the *I*: for instance, DELCECE and DELCIECE; TERI and TIERI.
 - (f) The vocal *O* appears in the place of the diphthong *UO* (following the *Tratte* we always kept *UO*): for instance, BONFIGLIO and BUONFIGLIUO.
 - (g) The prefixes *DE*, *DEGLI*, *DELLA*, etc not always appear: for instance, MEDECI and DEMEDICI; BAGLIONE and DELBAGLIONE.
 - (h) The letter *J* is used instead of *I*: for instance, JACOPI and IACOPI.
 - (i) A diminutive of the word is used: for instance, SASSOLI and SASSOLINI.
4. In few cases, we suspected typo errors in the *Tratte* dataset and changed them. These are:
 - (a) Both MATTEO BUONACCORSO GIANNI ALDEROTTI and MATTEO BUONACCORSO GIOVANNI ALDEROTTI appear in the dataset. We changed GIANNI in GIOVANNI.
 - (b) Both GIOVANNI PIERO VANNI MANNUCCI and VANNI PIERO VANNI MANNUCCI appear in the dataset. We changed VANNI in GIOVANNI.
 - (c) Both BUONACCORSO PAOLO CORBELLINI and BUONACCORSO PAOLO CORBELLINI appear in the dataset. We changed CORSELLINI in CORBELLINI.
 - (d) Both MAFFEO CANTE CATTANO PITTI and MAFFEO CANTE GUATANO PITTI appear in the dataset. We changed CATTANO in GUATANO.
 - (e) Both IACOPO GIOVANNI CIAIO ARRIGUCCI and IACOPO GIOVANNI CIARO ARRIGUCCI appear in the dataset. We changed CIAIO in CIARO.

Names

As regards names, general rules are more difficult to identify because names appeared in several different variants in the five datasets. A non exhaustive list of cases is reported below (the total list of case changes is available upon request):

1. The name has a number of diminutives: for instance, GUCCIO, GUCCIONE and GUC-CIOZZO.
2. The name appears with double or single consonants: PIEROZZO and PIEROZO, MARCHIONNE and MARCHIONE.
3. *J* is used instead of *I* and *viceversa*: for instance, JACOPO and IACOPO.
4. An extra consonant appears between two vocals in some variants of the name: for instance, PAOLO and PAGOLO.
5. An extra vocal, in general *I*, appears in some variants of the name: for instance, RICCARDO and RICCIARDO.
6. A different consonant appears in the same position within the name: for instance, BERTO and BETTO.
7. A different vocal appears in the same position within the name: for instance, VETTORIO and VITTORIO.
8. The prefix of the name is sometimes omitted: for instance, SALA and DELSALA.
9. *U* is used instead of *O* and *viceversa*: RUBERTO and ROBERTO.
10. The vocal *O* appears in the place of the diphthong *UO* (following the *Tratte* we always kept *UO*): for instance, BONANNO and BUONANNO; AMBROGIO and AMBRUOGIO.
11. There is an extra *H* (sometimes followed by an *E*): INGHELESE and INGLESE; BELCARO and BELCHARO.
12. Since woman could not be assigned an office, we suspected female names were typo errors, and changed them in the male version: PIERO and PIERA; ANTONIO and ANTONIA.
13. We always implemented truncation at 11 digits: ALDOBRANDINO and ALDOBRANDIN.

Supplementary material

Figures and tables

Table A.1: Electoral procedure before and after the advent of the Medici

Phase	Before the Medici (-1433)	The Medici's regime (1434-)	
	<i>Tre Maggiori (Collegi+Signoria)</i>	<i>Collegi</i>	<i>Signoria</i>
<i>Scrutiny:</i> The names of the potential candidates for the offices approved under majority vote.	It was held by: The <i>Tre Maggiori</i> officers and 80 citizens representing guilds and neighborhoods.	It was held by: The <i>Balia</i> named by the <i>Tre Maggiori</i> .	
<i>Imborsazione:</i> The approved names were included in the bags according to the office for which they could be elected, neighbourhood (<i>quartiere/gonfalone</i>), and the guild association.	It was held by: The <i>Accoppiatori</i> , they strictly executed the decisions of the scrutiny committee in the bags formation. Once prepared, the bags were closed and kept by the friars of <i>Santa Croce</i> .		It was held by: The <i>Accoppiatori</i> , they had large discretionary power in the bags formation. Once prepared, the bags were kept by them and brought to the elections when needed.
<i>Drawing:</i> The names were drawn from the bags, and seen and then seated after compatibility checks.	It was held by: The notary of the <i>Riformagioni</i> .		It was held by: The notary of the <i>Riformagioni/Accoppiatori</i> .

Notes: Information taken from Rubinstein (1966). The two *Collegi* are the group of *Buonomini* and the group of *Gonfalonieri di Compagnia*. The *Signoria* is composed by the eight *Priori* and the *Gonfaloniere di Giustizia*. The *Signoria* and the two *Collegi* together are called the *Tre Maggiori*.

Table A.2: Individual loans to Florentine government by political faction (1430-1432)

Individual	Loan (florins)	Faction
Cosimo Medici	155,887	Medici
Andrea Ugolino Pazzi	58,524	Medici
Bernardo Lamberto Lamberteschi	34,825	Medici's opponents
Lorenzo messer Palla Strozzi	33,951	Medici's opponents
Pierozzo Francesco Dellaluna	27,156	No affiliation
Antonio Salvestro Serristori	26,527	Medici
Donato Ugolino Bonsi	26,405	No affiliation
Antonio Jacopo Pitti	26,106	Medici
Jacopo Piero Baroncelli	18,362	No affiliation
Gianozzo and Filippo Manetti	15,345	No affiliation
Bernardo Antonio Uzzano	13,854	No affiliation

Notes. The information on the amounts of money lent to the Florentine Republic is our calculation from Molho (1971). The information on affiliation to political factions is from Padgett and Ansell (1993).

Table A.3: Political participation and wealth percentile ranks.

Panel A	Wealth percentile rank (OLS)		
	1427	1457	1480
Number of office terms	1.0589* (0.5411)	2.8448*** (0.5193)	4.5364*** (0.7826)
Observations	484	861	1,083
R-squared	0.0650	0.0816	0.0912
Panel B	Wealth percentile rank (reduced form)		
	1427	1457	1480
Number of draws	0.0181 (0.3628)	0.5029* (0.2417)	1.3997** (0.5153)
Observations	484	861	1,083
R-squared	0.0558	0.0468	0.0514
Panel C	Wealth percentile rank (IV)		
	1427	1457	1480
Number of office terms	0.0663 (1.2614)	1.5824** (0.7041)	2.9706*** (1.1259)
Observations	484	861	1,083
R-squared	0.0569	0.0742	0.0858
Panel D	Number of office terms (first stage)		
	1427	1457	1480
Number of draws	0.2735** (0.1256)	0.3178*** (0.0372)	0.4712*** (0.0457)
Observations	484	861	1,083
R-squared	0.2667	0.2623	0.3699

Notes: Estimation output from model (2) in Section 5 (Fig. 10), for the three periods under analysis: the dependent variable is the top wealth percentile rank. The three columns refer to wealth assessments in 1427, 1457, and 1480 and the office assignment periods in 1393-1426, 1427-1456, and 1457-1480, respectively. Panel A reports results from the OLS regression of wealth percentile ranks on the individual number of terms in office. Panel B reports results from the reduced form regression of wealth percentile ranks in 1427, 1457, and 1480 on the individual number of draws. Panel C reports results from the IV regression of wealth percentile ranks on the individual number of terms in office, instrumented with the individual number of draws in the same period; whereas Panel D shows results from the related first stage. All the regressions control for the most frequent neighborhood, the most frequent type of bag, and the most frequent office fixed effects. Standard errors clustered at the neighborhood (*Gonfalone*) level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.4: Political participation and wealth percentile ranks (controlling for the ex-ante probability to be drawn).

	Wealth percentile rank (OLS)					
	1427		1457		1480	
Number of office terms	1.2563 (1.0178)	1.5969 (1.5063)	2.4207*** (0.4982)	3.0620*** (0.6347)	4.6063*** (0.7930)	4.4160*** (0.8348)
Polynomial in time	YES	NO	YES	NO	YES	NO
Number of bags FE	NO	YES	NO	YES	NO	YES
Observations	484	484	858	858	1,083	1,083
R-squared	0.0654	0.0861	0.0838	0.0974	0.0916	0.0970

Notes: Estimation output from model (2), for the three periods under analysis: the dependent variable is the top wealth percentile rank. The three couples of columns refer to wealth assessments in 1427, 1457, and 1480 and the office assignment periods in 1393-1426, 1427-1456, and 1457-1480, respectively. Polynomial in time is a second order polynomial of the time lapsed since the first time individual drawn from a bag (the longer the time lapsed from the first time an individual was seen, the larger was the probability of being drawn again). Number of bags FE refer to a set of dummies for the number of bags in which an individual name was included in each period. All the regressions control for the most frequent neighborhood, the most frequent type of bag, and the most frequent office fixed effects. Standard errors clustered at the neighborhood (*Gonfalone*) level. *** p<0.01, ** p<0.05, * p<0.1.

Table A.5: Political participation and wealth percentile ranks (controlling for lagged wealth percentile ranks).

	Wealth percentile rank (OLS)			
	1457		1480	
Number of office terms	1.9725* (1.0170)	2.2294** (0.8763)	3.4952*** (0.9672)	2.3362** (0.8382)
Lagged wealth percentile rank		0.3515*** (0.0873)		0.5433*** (0.0642)
Observations	200	200	280	280
R-squared	0.0985	0.2117	0.1355	0.4024

Notes: Estimation output from model (2) in Section 5 (Fig. 12), for the two periods under the Medicean regime, with and without control for the lagged wealth percentile ranks: the dependent variable is the top wealth percentile rank. The first two columns refer to wealth assessment in 1457 and office assignment in 1427-1456, the last two columns refer to wealth assessment in 1480 and office assignment in 1457-1479. The number of observations for each time period is kept constant. All the regressions control for the most frequent neighborhood, the most frequent type of bag, and the most frequent office fixed effects. Standard errors clustered at the neighborhood (*Gonfalone*) level. *** p<0.01, ** p<0.05, * p<0.1.

Table A.6: Political participation and log real estate.

	Log real estate (OLS)		
	1427	1457	1480
Number of office terms	0.0692* (0.0350)	0.1765*** (0.0296)	0.2739*** (0.0482)
Observations	484	861	1,083
R-squared	0.0768	0.0563	0.0644

Notes: Estimation output from a modified model (2) in Section 5, for the three periods under analysis: the dependent variable is the log of real estate. The three columns refer to wealth assessments in, respectively, 1427, 1457, and 1480 and the office assignment periods in, respectively, 1393-1426, 1427-1456, and 1457-1480. All the regressions control for the most frequent neighborhood, the most frequent type of bag, and the most frequent office fixed effects. Standard errors clustered at the neighborhood (*Gonfalone*) level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.7: Political participation and log total wealth.

	Log total wealth (OLS)	
	1427	1457
Number of office terms	0.0628** (0.0281)	0.1708*** (0.0212)
Observations	484	861
R-squared	0.0545	0.0880

Notes: Estimation output from model (3) in Section 6, for the three periods under analysis: the dependent variable is the log of total wealth. The three columns refer to wealth assessments in, respectively, 1427, 1457, and 1480 and the office assignment periods in, respectively, 1393-1426, 1427-1456, and 1457-1480. All the regressions control for the most frequent neighborhood, the most frequent type of bag, and the most frequent office fixed effects. Standard errors clustered at the neighborhood (*Gonfalone*) level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.