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**Habemus Papam?  
Polarization and Conflict in the Papal States**

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# Habemus Papam?

## Polarization and Conflict in the Papal States\*

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### Abstract

We study the effect of divisions within the elite on the probability of internal conflict in the Papal States between 1295 and 1846. We assemble a new database using information on cardinals that participated in conclaves during this period, and construct measures of polarization and fractionalization based on the cardinals' places of birth. The deaths of popes and cardinals provide plausible exogenous variation in the timing of the conclave and the composition of the College of Cardinals, which we exploit to analyze the causal effect of a divided conclave on conflict. We find that an increase of one standard deviation in our measure of polarization raised the likelihood of internal conflict by between 2 and 3 percent in a given year and by up to 15 percent in a given papacy. The effect is largest in the initial years after the conclave, to gradually vanish over time. Cardinals' influence on the politics of the Papal States decreased after reforms introduced between 1586 and 1588. Our measure of religious productivity, however, is negatively and significantly linked to polarization in the post-reform period. These reforms were successful in shifting the effect of divisions among the elite of one of the largest and oldest organizations from violent conflict to religious matters.

JEL codes: D72, D74, N33, N43, Z12.

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# 1 Introduction

Recent literature discusses the role of the elite on economic performance. [Acemoglu \(2008\)](#) analyzes the economic costs and benefits under both oligarchic and democratic societies and describes how an unequal income distribution may sustain inefficient oligarchic institutions. [Besley and Kudamatsu \(2008\)](#) prove that economically successful autocracies occur when the group with the ability to choose a leader (the *selectorate*) is capable of removing bad rulers. Other theoretical work focuses on divisions within the elite and the quality of the leader. For example, [Guriev and Sonin \(2009\)](#) show that a strong dictator may expropriate individual oligarchs, while a weak dictator cannot prevent expropriation within the oligarchy. Divisions within the elite may also lead to an extension of the franchise ([Acemoglu, 2008](#); [Ghosal and Proto, 2009](#)), inefficient policies ([Acemoglu, Robinson, and Verdier, 2004](#); [Padro i Miquel, 2007](#)) or to weaker states and internal conflicts ([Fearon and Laitin, 2003](#)). This literature provides abundant anecdotal evidence for their theoretical predictions. Systematic empirical evidence, however, has been elusive.

In this paper we analyze the effect of a divided elite on the likelihood of internal conflict. We argue that a divided elite might undermine the authority of the leader, who in turn might be less able to prevent or suppress revolts. To this end, we assemble a new dataset on the composition of the college of cardinals, internal conflicts (riots, revolts) and wars in the Papal States between 1295 and 1846. Three main features of the Papal States make this the ideal setting to test for this hypothesis. First, there is a well defined institutional context with the pope as ruler, a well established procedure for selecting the pope, known as *conclave*, and a small and well identified group of participants in the conclave (the College of Cardinals), which allow us to clearly identify the elite as the pope and those who select him. Second, the deaths of popes and cardinals provide plausible exogenous variation in the timing of the conclave and the composition of the College of Cardinals, which we exploit to analyze the causal effect of a divided conclave on conflict. Third, we take advantage of a set reforms to the College of Cardinals implemented in 1586–1588, which permanently reduced the influence of cardinals both in the outcome of elections and in the managing of the church ([Walsh, 2011a](#)).

Given that cardinals’ votes to elect the pope are secret, we construct our measure of divided conclaves with indexes of fractionalization and polarization based on the birth-places of cardinals attending the conclave. These indexes weigh different aspects of the degree of diversity across groups: while fractionalization is maximized when all groups are of the same size, polarization reaches its maximum when there is a half and half

split of groups. Historians have highlighted divisions among cardinals based on places of origin (Broderick, 1987; Walsh, 2003; Collins, 2009). Given that cardinals represented political interests of different states/kingdoms in Europe, we argue that these measures also reflect divisions within the conclave. A divided conclave implied that cardinals had to make concessions and find a consensus candidate. These compromise choices might have weakened papal authority, either through selecting worse popes or through changing the incentives for them to implement better policies (Caselli and Morelli, 2004; Besley, 2005), and therefore had an effect on the likelihood of conflicts.

The anecdotal evidence suggests that popes had more authority and support if they were elected in conclaves with low polarization levels. One example is the papacy of Julius II (1503-1513) who reconquered, without firing a shot, cities that were part of the Papal States but were effectively controlled by adversary families. His army was then actively involved in the war of the European and Italian alliance against Venice in 1509, the unsuccessful war of the Holy League against France and Ferrara in 1510, and the war against France in 1511–1512 that ended the presence of the French on Italian soil (Chambers, 2006; Kelly, 1986). Remarkably, Julius II was unanimously elected and the level of polarization among the cardinals during this conclave, measured by the cardinals' birthplaces, is among the lowest in our sample.

We first document a positive relationship between polarization of the College of Cardinals and the time to elect a new pope (i.e. the length of a conclave), particularly before the reforms of 1586–88, even after controlling for the number of cardinals and the length of the previous papacy, among other variables. Fractionalization also has a positive effect on the length of the conclave, but it is not statistically significant. We interpret these results as evidence of the inability of a polarized College of Cardinals to unite behind a single candidacy. Therefore, popes elected in conclaves under high polarization generated less consensus.

Our main findings indicate that polarization among cardinals increased the likelihood of internal conflict: a one standard deviation increase in our measure of polarization raised the probability of an internal conflict in a given year by between 2 and 3 percent, depending on the specification. The effect is particularly strong at the beginning of the papacy, and gradually becomes statistically insignificant after the seventh year of the papacy. These results are consistent with the interpretation of an irresolute leader learning throughout his papacy, but also with the College of Cardinals losing influence through the death of its members and the strategic nomination of new cardinals by the pope. Also consistent with our results for the length of the conclave, the effect of

polarization on conflict is present particularly before the 1586-88 reforms. For conclaves after the reforms we still find a positive effect of polarization on the likelihood of conflict, but the effect is not statistically significant.

The effect of polarization on the incidence of internal conflict is robust to various alternative specifications. Birthplace is arguably not the only way to identify groups of cardinals and measure polarization and fractionalization in conclaves. Our results do not change if we instead use their workplace (the bishopry place of a cardinal). Neither do they change when we modify our polarization and fractionalization measures to consider inter-group distances between groups of cardinals, as in [Esteban, Mayoral, and Ray \(2012\)](#).

The timing of a conclave is entirely determined by the death of a pope. However, one may argue that since it is the pope who nominates cardinals, the composition of cardinals attending the conclave is not exogenous. To address this concern, we decompose cardinals attending conclaves into two groups: those that were present in the last conclave and those who were nominated during the last papacy. The composition of the former should only be affected by deaths of cardinals, while pope's nominations entirely determine the latter. We find that the index of polarization constructed using "old" cardinals has a positive and significant effect on the likelihood of conflict. Polarization constructed using "new" cardinals is also positive, but smaller in magnitude and not precisely estimated. We interpret these results as evidence that the (probably strategic) nomination of cardinals is not the driving force in our results.

Polarization also has a positive and significant effect on the intensity of conflict. Our results indicate that 1 standard deviation increase in polarization raises the intensity of conflict by 26 to 35 percent. We also find a positive effect of polarization on the incidence of war between the Papal States and other states. We interpret this result as weak leaders being more likely to be dragged into war, but it is also possible that weak leaders see war as an opportunity to increase his legitimacy and capabilities ([Chiozza and Goemans, 2004, 2011](#)).

Finally, our measure of religious productivity (nomination of saints and blessed) is negatively correlated with polarization. Moreover, the effect is particularly present in years after 1586-88, which indicate that the reforms of pope Sixtus V shifted the effect of divisions among cardinals from violent to religious conflict, suggesting some degree of substitution between war-making and saint-making.

Our paper relates to various strands of the economics literature. First, it is related to the literature looking at the the effect of divisions on ethnic or religious lines on conflict.

Some examples are [Fearon and Laitin \(2003\)](#), [Montalvo and Reynal-Querol \(2005\)](#), [Esteban and Ray \(2011\)](#), [Esteban, Mayoral, and Ray \(2012\)](#), and [Desmet, Ortuño-Ortín, and Wacziarg \(2012\)](#). We contribute to this literature by showing that in autocracies divisions among the elite can help explain conflict, particularly in contexts where noneconomic markers for the society as a whole are less relevant.

Second, since it shows that popes and cardinals had an effect in the likelihood of conflict in the Papal States, our paper complements [Chaney \(2013\)](#) who provides empirical evidence that religious leaders exercised political power, particularly during periods of economic downturn. More generally, we contribute to the literature discussing the interplay between religion and conflict ([Iyigun, 2011](#); [Aldashev and Platteau, 2014](#)).

Third, our paper relates to the literature explaining civil conflict in Europe. [Iyigun \(2008\)](#) shows that the Ottomans' military activity in Europe reduced military engagements between Protestants and Catholics between 1520 and 1650. [Gennaioli and Voth \(2012\)](#) highlight the link between state capacity (measured by the ruler's ability to control taxes and its collection) and the presence of military conflict, particularly when the cost of money (and therefore the cost of war) is high. We show that an alternative measure of state capacity (namely the cohesiveness of its elite) can be a determinant of conflict.

Recent articles have analyzed the role of leadership on various outcomes such as economic growth, stock prices and the provision of public goods.<sup>1</sup> Our findings complement those of [Jones and Olken \(2009\)](#), in showing that not only leaders, but also the support they enjoy among the elite, can have an impact on the incidence of conflict.

Finally, our paper is related to the literature on the economics of religious organizations. [Ekelund, Hébert, and Tollison \(2006, 2011\)](#) have argued that in the medieval catholic church the pope took the role of the CEO, while the College of Cardinals acted as the board of directors. Our results point to an alternative view of church organization, more similar to an international organization (such as the United Nations) or a coalition government. We are, to the best of our knowledge, the first to provide empirical evidence showing that a divided elite in one of the largest and oldest organizations can have an impact on the selection of its leader and hence on conflict.

The remainder of this paper is organized as follows. Section 2 provides the historical context, describing popes, cardinals and the conclaves. Section 3 describes the sources of

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<sup>1</sup>On leaders and economic growth, see [Jones and Olken \(2005\)](#) and [Besley, Montalvo, and Reynal-Querol \(2011\)](#). See [Johnson, Magee, Nagarajan, and Newman \(1985\)](#) on death of executives and stock prices, and [Chattopadhyay and Duflo \(2004\)](#) on the effect of female leaders on the provision of public goods at the village level.

our data, while section 4 presents the econometric framework and discusses identification. The results on conclave length and incidence of conflict are presented in section 5, while section 6 presents results for intensity of conflict and wars. Finally section 7 states the conclusion.

## 2 Historical Background

### 2.1 The popes and the states of the church

The title *pope* is employed to denote the bishop of Rome, who as successor of St. Peter is the chief pastor of the whole catholic church (Joyce, 1911).<sup>2</sup> As other medieval bishops, the bishop of Rome possessed local states and castles, but in addition the pope claimed much more widespread *temporal* possessions (Chambers, 2006). These possessions were acquired through political donations, such as the one made by emperor Constantine I (272–337), and their successive confirmations.<sup>3</sup> The most significant donation came from Pepin, King of the Franks, in 751, and was later confirmed by his son Charlemagne.<sup>4</sup>

Over the course of the next centuries the size of the states of the church varied considerably. The pope relied heavily on the support of the Carolingian emperors, and according to Schnürer (1912) this alliance remained the necessary condition for the existence of the papal states until the end of the Staufen dynasty in 1268. During this period a more coherent papal state starts to emerge in central Italy, with some recognised boundaries (Chambers, 2006). The first king of the Habsburg dynasty, Rudolph I, renounced all imperial rights in the Romagna region in 1279, allowing it to be integrated into the papal states (Collins, 2009). Figure 1, taken from Chambers (2006), shows in white the extent of the states of the church between the thirteenth and nineteenth centuries.

Political control of the popes over the states of the church varied considerably throughout our period of analysis. Chambers (2006) argues that “it would be wrong to suppose that all papal claims of secular jurisdiction, taxation and service were exactly defined, or that local warlords and others readily conceded obedience to Rome. This was no modern state yet, no equivalent to the contemporary strong monarchies of France or England” [p. XV]. Indeed, from 1309 until 1377 the popes resided at Avi-

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<sup>2</sup>For a recent comprehensive history of the papacy and more references, see Duffy (2006) and Collins (2009).

<sup>3</sup>The “Donation of Constantine” allegedly gave the pope privileges and possessions in Italy, but there is consensus that the document is an eighth-century forgery.

<sup>4</sup>For details and more references on the states of the church, see Schnürer (1912) and Chambers (2006).

gnon instead of Rome, exercising control of the papal states through military legates who often had to compromise with those in effective control there (Chambers, 2006). The popes regained control in 1353, to face another set back during the Great Schism (1378–1417). After its end pope Martin V (1417–31) attempted to establish a centralized monarchy. Analyzing the papacy during the sixteenth and seventeenth century, Collins (2009) states that “once elected, the popes were absolute rulers within the city of Rome and the Papal States” [p. 371]. Before the outbreak of the French Revolution, the papal states comprised most of the territory that had belonged to them at the time of Charlemagne (Schnürer, 1912).

After the French Revolution the States of the Pope experienced important changes. In 1797 the pope had to give up Avignon to France, as well as other territories in Italy to the Cisalpine Republic. In 1809 the Papal States suffered from occupation by Napoleon, but were again restored in the Congress of Vienna (1815). However, the idea of national unification and the hatred against foreign rulers were already widespread in Italy (Schnürer, 1912). We end our period of analysis at the death of pope Gregory XVI in 1846, since his successor Pius IX implemented large changes in the temporal government of the Papal States. This is also the period regarded as the start of the process of unification of Italy with Count Cavour. The States of the Church were finally occupied in 1870, when France withdrew its troops because of the Franco-German war. In 1871 the law of the Papal Guarantees declared the Vatican, the Lateran Church and Castel Gandolfo as extra-territorial. However, pope Pius IX refused to accept this law, and locked himself in the Vatican. The Roman Question, as this conflict became known, was only resolved by the Lateran Treaty of 1929, establishing the Vatican City as an independent state.

Panel A of Table 1 shows characteristics of the popes in our sample. The average age of the pope when elected is 61, though it presents significant variation, from 37 to 80. Time in office also presents significant variation, from just a few days to more than 24 years, with an average of 9 years. These variables have been regarded as relevant controls for the incidence of conflict in the literature (Horowitz, McDermott, and Stam, 2005; Bak and Palmer, 2010). However, there is little evidence of whether the age or tenure of popes actually played a role in regard to conflict in the papal states. Collins (2009) reproduces a speech given by Pius II (1458–64) defining his role in military operations: “We do not go to fight in person, since we are physically weak and priest, whom it does not befit to wield the sword” [pp. 56–57].



## 2.2 The cardinals

The cardinals of the Catholic Church constitute the elite of the church. They follow immediately after the pope and are therefore considered “the Princes of the Church” (Sägmüller, 1908). They are organized in three orders: cardinal-bishops, cardinal-priests and cardinal-deacons.<sup>5</sup> Together these three orders form the College of Cardinals. Since the twelfth century the College of Cardinals has played an important role in the church, both liturgically and politically. They have been traditionally regarded as advisers to the pope (Broderick, 1987), participate in the administration of papal justice and finances, and can serve as legates of the pope (Sägmüller, 1908). More crucial for the purpose of this paper, cardinals have an important role after the death of the pope (*sede vacante*): The administration of the States of the church and the election of a new pope. We provide more details of this later in the paper.

A new cardinal can be nominated (*created*) only by the pope. However, cardinals-to-be required the effort of other cardinals and civil rulers to secure their nomination.<sup>6</sup> Traditionally, the number of cardinals was supposed to be limited to 53, with 7 cardinal-bishops, 28 cardinal-priests and 18 cardinal deacons. However, this theoretical maximum was not met for most of the three first centuries in our sample. Panel B of table 1 shows that before 1585 the average number of cardinals participating in conclaves was 27.<sup>7</sup> There was only one conclave before 1585 with more than 53 cardinals: the election of Paul IV in 1555, where 56 cardinals participated in the conclave. According to Broderick (1987), the reason to have few cardinals during this period is attributable to the pressure of the cardinals themselves: “Motivating this policy was ambition to inflate the power and prestige of individual cardinals, and to increase their income” [p. 28].<sup>8</sup>

Two apostolic constitutions issued in 1586 (*Postquam verus*) and 1588 (*Immensa*) by pope Sixtus V (1585–90) changed the organization of the College of Cardinals and

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<sup>5</sup>The orders of cardinalate had a major impact before the two-third rule, where the cardinal-bishops were conferred “principal judgment” (i.e. having priority in the election over cardinal-priests and cardinal-deacons). After the two-third rule was established, the cardinal-bishops established themselves as leaders of factions of cardinal-priests and cardinal-deacons.

<sup>6</sup>Broderick (1987) gives the example of the Aragon kings to illustrate the eagerness of rulers to obtain places in the College of Cardinals for their subjects. Hollingsworth (2006) presents a vivid depiction of bishop Ippolito d’Este (1479–1520)’s everyday life, as well as his struggle to obtain the red hat, symbol of the cardinalate.

<sup>7</sup>In looking at cardinals participating in conclaves we follow Broderick (1987), who argues that for the Middle Ages the size of the College of Cardinals is better determined on the occasion of papal elections.

<sup>8</sup>The College of cardinals tried to limit the power of elected popes by imposing conditions to candidates, known as *capitulations* (Schaefer, 1908). One example is the election of pope Innocent VI in 1352. Schaefer (1908) states that “the conditions then laid down by the cardinals restricted the rights of the future pope, especially with regard to the nomination, punishment, or deposition of cardinals.”

reduced its power permanently (Walsh, 2011a). He established 70 as the permanent maximum number of cardinals, with 6, 50, and 14 cardinals for the bishop, priest and deacon orders, respectively. He also set up a system of congregations, which reduced the role of *consistories* (regular gatherings of the College of Cardinals with the pope), and thus the opportunities for the cardinals to meet and act as a college (Broderick, 1987; Walsh, 2011a). The role of the cardinals as papal advisors also declined as their number increased (Collins, 2009). Even though succeeding popes were as free as Sixtus V to change limit on the number of cardinals, it was kept at 70 until 1958, when pope John XXIII (1958–63) increased the number of cardinals to 75. Panel B of table 1 shows that after 1585 the average number of cardinals participating in conclaves raised to 53. However, it still displays significant variation across conclaves, with 35 and 66 cardinals as the minimum and maximum, respectively.

## 2.3 The conclaves

The conclave is the procedure to select a new pope. In this section we highlight key elements of the conclaves that are relevant for our empirical strategy. We focus on the rules that were in place during our period of observation (1295–1846).<sup>9</sup>

The duty of electing a new ruler (the pope) falls solely into the hands of the College of Cardinals. These elections occur behind closed doors (hence the name of conclave, “with key”), and only the cardinals participate. Figure 2 presents the timing of the conclave. Once the pope dies, the see is declared vacant (*sede vacante*) and limited powers are transferred to the College of Cardinals. The conclave does not start immediately, since time is reserved for the pope’s burial and to allow cardinals traveling from other states to join the conclave. We denote the time between the death of the pope and the beginning of the conclave as *interregnum*.<sup>10</sup> The conclave ends when a new pope is successfully elected.

We start our analysis with the election of pope Boniface VIII in December of 1294 because from this year onward the conclave regulations were effectively enforced.<sup>11</sup> In

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<sup>9</sup>Colomer and Mclean (1998) and Toman (2004) discuss the main features of the conclaves, as well as changes that have occurred along their history. See also Dowling (1908) and Walsh (2003) for more details and sources.

<sup>10</sup>Commonly interregnum has been used to symbolize the same period of sede vacante.

<sup>11</sup>This was not the first pope to be elected in a conclave. Pope Gregory X established the conclave in 1274, and the election of popes Innocent V, Adrian V and John XXI in 1276 lasted only for 2, 10 and 21 days, respectively. However, John XXI revoked the creation of the conclave, and the following and the following 5 elections were deadlocked for long periods. Finally, pope Celestine V in 1294 re-established the practice of the conclave (Miranda, 2012). See Colomer and Mclean (1998) for a discussion of the motives of Celestine V for adopting the conclave. He abdicated to the throne the same year.

theory, anyone (not only cardinals) could be elected as a pope, but most of the time the College ended up electing one of its own members. The election of the pope required a high level of consensus: two-thirds of the cardinals present in the conclave. The two-thirds rule was introduced in 1179 to achieve stability without having to reach unanimity.<sup>12</sup> The practice of locking cardinals was introduced later in order to speed up the election process, which suffered from long delays. Panel C of table 1 shows that the average length of a conclave in our sample is 51 days. As explained earlier, the papacy of Sixtus V made important changes to the College of Cardinals. These changes had an effect in the length of the conclave, with average lengths of 45 and 56 days for conclaves occurring before and after 1585, respectively.

Only two votes per day were allowed, and even though the secret vote was formally adopted in the sixteenth century, Colomer and Mclean (1998) assert it was used in earlier conclaves. They also state that from 1294 to 1621 the ballot used in the conclaves was a form of approval voting: the voter can choose either one or several candidates. Cardinals were advised though not to choose too many candidates.<sup>13</sup> The ballot was changed to a categorical ballot (single choice for a candidate) after 1621. Finally, there was no elimination of candidates between one round and the following, and candidates were always eligible even if they did not appear in previous rounds.

## 3 Data sources

### 3.1 Conclaves, popes and cardinals characteristics

Our list of officially recognized popes, together with the length of the papacy comes from Duffy (2006).<sup>14</sup> Our primary sources of information regarding the length of conclaves and vacant see, and cardinals' birthplaces are Miranda (2012) and Cheney (2012). We classify cardinals' birthplaces according to the following guidelines: Before 1469, when the cardinal is reported as Spaniard we code him as Castilian. Aragon, Valencia and Catalonia are coded as Aragon. After 1469 we code all Spaniards together. In Italy we create three groups: North (Venice, Milan, Genoa, Modena, Trento, and Parma), Center (Papal States and Tuscany), and South (Sicily and Naples). In our main specification we consider groups based on the cardinals' birthplace. Alternatively, we construct groups

<sup>12</sup>See Colomer and Mclean (1998) for a discussion of the introduction of this rule and how, under concavity in voter preferences, the rule is invulnerable to cycles.

<sup>13</sup>Colomer and Mclean (1998) find that the average number of candidates voted by a cardinal during this period was between 1.5 and 2.

<sup>14</sup>We exclude anti-popes and pseudo-cardinals (cardinals created by anti-popes) from this analysis. During the Great Schism (1378–1417) we consider the popes of the Roman Obedience.

based on their workplace. Our results are robust to a more refined classification that we discuss later.

Table 2 shows our resulting groups. Our sample consists of 1,291 cardinals 23 different birthplace-groups. Italians constitute 69% of the sample, with 37% for the Center, 24% for the North and 9% for the South. French cardinals constitute 16% of the sample, while Spanish cardinals as a whole amount to 7%.

Additional information for cardinals (year of birth/death, and year of elevation to the cardinalate) comes from [Miranda \(2012\)](#).

## 3.2 Conflict

Our main source of information for internal disturbances within the Papal States is [Sorokin \(1937\)](#). The third volume of his book “Social and Cultural Dynamics” is devoted to the fluctuation of social relationships, war, and revolution, and it includes most of the recorded internal disturbances of importance in Europe. Internal disturbances are defined as disorders, riots, revolts or revolutions. Relying on various sources, he argues that the fact that these disturbances are mentioned in the annals of history is considered a sign of its importance.<sup>15</sup> He also constructs a measure of the intensity of the disturbance, which relies on four elements: the extent of the area of the disturbance, the population involved, its duration, and the amount of violence. The index ranges from 0 to 100.

[Sorokin](#) does not distinguish between disturbances in the Papal States and other states within Italy. Therefore we classify the disturbances according to the place where they occurred. Of the 98 disturbances that [Sorokin](#) registered for Italy between 1295 and 1846, 18 occurred within the Papal States territories. It is somewhat surprising that [Sorokin](#) did not record any disturbance in the Papal States between 1511 and 1796. However, [Sorokin](#) does record internal disturbances for the rest of Italy for the period of 1511–1796 (used as a control in our regressions), although less frequent and smaller in magnitude than those before 1511. Therefore, there is no evidence that disturbances in the Papal States during the 16th and 17th centuries were overlooked by Sorokin. We nonetheless enlarge these data with information on internal conflicts from [Alfani \(2013\)](#). This author does not report conflict intensity (at least comparable to Sorokin’s measure), therefore we only include these data when looking at incidence of conflict. Table A-1 in

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<sup>15</sup>Sorokin argues that many insignificant disorders “pass by without leaving any traces in the records of history. Even if they are mentioned by some of the contemporaries who happen to witness such disturbances . . . they are soon forgotten and have little chance of being passed on to subsequent generations” ([Sorokin, 1937](#), p. 385).

the Appendix lists all internal disturbances included in our analysis.

Panel A of Table 3 shows our descriptive statistics for internal conflict. The incidence of conflict in the Papal States is 5.2 percent, since we observe 24 years with disturbances. Average intensity, conditional on the existence of conflict, is 13.37. As a comparison, Sorokin gives the Glorious Revolution in England (1688) an intensity of 25.59, and the French Revolution (1789) an index of 79.43.

Information regarding wars fought by the Papal States and other European powers was obtained from Brecke (2001), Lee (2012) and Ganse (2012). The inclusion of wars allows us to control for the possibility that revolts might be more likely to occur when the sovereign has focused his military resources on fighting wars (Vidal-Robert, 2013). Panel D of Table 3 shows that the Papal States were at war with other states 26 percent of the time in our sample.

### 3.3 Additional controls

Recent evidence shows that climate can be a relevant factor of civil conflict, particularly in Europe (Tol and Wagner, 2010; Hsiang, Burke, and Miguel, 2013; Lee, Zhang, Brecke, and Fei, 2013). To account for this, we use data from Germany and Central Europe temperature anomalies during our period of study (Glaser and Riemann, 2009).<sup>16</sup>

We construct a dummy variable that takes the value of 1 if the year is a holy year of jubilee. This celebration, instituted by pope Boniface VIII in year 1300, granted a plenary indulgence (forgiveness of sins) to pilgrims to the four Basilicas in Rome during this year. The great influx of pilgrims during these years was an additional source of income for the papal finances (Collins, 2009). Panel D of Table 3 presents summary statistics for these variables.

In alternative specifications (not shown) we control for the price of wheat in Tuscany taken from Arroyo Abad and Lindert (2005) who constructed it from Malanima (2002), or for the consumer price index for Center and North Italy taken from Malanima (2013). The results are similar but we lose precision, since these variables are not available for all years we consider.<sup>17</sup>

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<sup>16</sup>Glaser and Riemann (2009) define a temperature anomaly as the 11 year-moving average temperature difference versus the reference period (1761–1970). Following Lee, Zhang, Brecke, and Fei (2013), in alternative specifications we have included data for the North Atlantic Oscillation (NOA) from Trouet, Esper, Graham, Baker, Scourse, and Frank (2009). We do not present the results since they are very similar.

<sup>17</sup>None of these controls is statistically significant when included in the regressions, and both are fairly correlated with weather anomalies (-0.22 for the consumer price index and -0.18 for the price of wheat).

## 4 Empirical Strategy

### 4.1 Measures of divisions among the cardinals

Our measures of disagreement among the cardinals are constructed based on the cardinals' birthplaces. This choice is motivated by anecdotal evidence discussed in the introduction, as well as by [Colomer and Mclean \(1998\)](#), who contend that a relevant source of division among cardinals was their allegiance to each of the Christian kingdoms in Europe. We capture these allegiances by constructing distributional measures of the cardinals' birthplaces. We follow [Montalvo and Reynal-Querol \(2005\)](#) to construct the following indexes:

$$FRAC = 1 - \sum_{i=1}^N \pi_i^2 \quad (1)$$

$$POL = 4 \sum_{i=1}^N \pi_i^2 (1 - \pi_i) \quad (2)$$

where  $\pi_i$  is the proportion of cardinals attending the conclave that belong to the same birthplace group  $i$ . The fractionalization index (FRAC) can be interpreted as the probability that two randomly selected individuals in a given conclave will not belong to the same birthplace group. The polarization index (POL) corresponds to the index RQ in [Montalvo and Reynal-Querol \(2005\)](#), but it is also the index P used in [Esteban, Mayoral, and Ray \(2012\)](#) when the inter-group measure is binary. POL captures how far the distribution of groups is from a bipolar distribution (i.e. a distribution with its mass concentrated in two poles), which has the highest level of polarization.<sup>18</sup>

The distributional measures for the cardinals' birthplace are labeled as FRACBIRTH and POLBIRTH for fractionalization and polarization, respectively. In alternative specifications we use the cardinals' working place to construct FRACWORK and POLWORK. Panel C of Table 3 shows descriptive statistics for these variables. In Appendix B we further describe these variables, as well as provide additional details on their construction.

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<sup>18</sup>See the discussion in [Montalvo and Reynal-Querol \(2005\)](#) and [Esteban, Mayoral, and Ray \(2012\)](#). [Esteban, Mayoral, and Ray](#) argue that POL and FRAC are based only on group sizes, and do not exploit variations in inter-group distances. Therefore they consider FRAC, a version of POL with a non-binary distance, and the Greenberg-Gini index as their distributional measures. They proxy for inter-group distance (which in their model is the inter-group difference in preferences over public goods) by using the groups' linguistic distance. We discuss this issue in the robustness section.

## 4.2 Identification

We estimate the following linear probability model:

$$Pr(disturbances_t) = \alpha + X_p\beta + Z_p\lambda + W_t\eta + \mu_{century} + \epsilon_t \quad (3)$$

where  $disturbances_t$  is our measure of internal conflict in the Papal States in year  $t$ .  $X_p$  are the measures of disagreement among the cardinals (FRACBIRTH and POLBIRTH in our main regressions),  $Z_p$  are a set of controls at the papacy level (e.g. number of cardinals present in the conclave, length of the previous/current papacy),  $W_t$  is a set of year-varying controls (e.g. disturbances in other Italian regions, wars against other European states, weather, jubilee year), and  $\epsilon_t$  is the error term. We allow for  $\epsilon_t$  to be autocorrelated up to 10 lags and heteroscedastic (Newey and West, 1987).<sup>19</sup>

Our coefficient of interest is  $\beta$ , namely the effect of FRACBIRTH and POLBIRTH on internal disturbances. As discussed earlier, we expect both to have a positive effect on the incidence of conflict. The identification assumption is that, conditional on papacy and time controls,  $X_p$  is uncorrelated with the error term  $\epsilon_t$ .

As previously discussed, the death of popes, together with deaths of cardinals, provide plausible exogenous variation in the timing of the conclave and in the composition of the College of Cardinals, and therefore in our measures of disagreement among them. However, cardinals are named by the pope himself, and popes with long tenures might have been able to replace a significant number of cardinals (conditional on their predecessors' deaths).<sup>20</sup> In addition, the naming of cardinals changes the pool of potential candidates in the subsequent election. We address this issue in two ways. First, we control in our main specifications for tenure length of the previous pope. Second, in a robustness check we exploit changes in the composition of the college of cardinals due to deaths and designations of cardinals separately. In doing so we can attribute the effect of changes in our measures of disagreement among cardinals on conflict only to either plausible exogenous deaths of cardinals or endogenous designation of these by the pope.

Deaths as a source of exogenous variation has been already employed in the literature (e.g. Jones and Olken, 2005; Fracassi and Tate, 2012). Our exogeneity assumption might be violated if many cardinals died of unnatural causes. Fornasin, Breschi, and

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<sup>19</sup>We choose 10 lags since the average tenure for popes is 10 years. Our results are unaffected if we allow for more lags.

<sup>20</sup>Analyzing the U.S. Congress, Dal Bó, Dal Bó, and Snyder (2009) find that legislators with longer tenure are more likely to have relatives entering Congress in the future. Mosca (1939) argues that celibacy has prevented the church to become an hereditary aristocracy. There are, however, well known examples of political dynasties in the church. Mosca also points out that great families almost always had some member in the College of Cardinals.



Manfredini (2010) analyze mortality patterns of cardinals between the sixteenth and twentieth centuries and report that poisoning is suspected as the cause of death for ten or more cardinals. However, Bellenger and Fletcher (2001) mention that stating poisoning as the cause of death was used to cover medical incompetence. Of the 1,291 cardinals in our sample, Miranda (2012) only states poisoning as the certain cause of death in 8 of them. There are other 26 cardinals described as “probably poisoned”, though some of them also list other probable causes of death.<sup>21</sup> Therefore we do not regard deaths by poisoning as a concern to our empirical strategy.

## 5 Conflict in the Papal States: Evidence

### 5.1 Length of the conclave

Before turning to conflict, we explore whether disagreement among the cardinals had an effect on the length of the conclave. Evidence shows that U.S. juries deliberate longer when the cases are more complex (Brunell, Dave, and Morgan, 2009). Moreover, Hannaford-Agor, Hans, Mott, and Munsterman (2002) show that trials for which the jury is hung on any count have a much higher average juror response for “time and effort spent trying to convince others”. Therefore, the length of the conclave can be seen as an indicator for the struggle of the cardinals to find a consensus candidate, but it can also indicate the complexity of the screening process.

In Table 4 we assess whether our measures of polarization and fractionalization influence the length of the conclave. In the first three columns we estimate an OLS model with the log of conclave length,  $\log(lconclave)$ , as our dependent variable. Column 1 shows that polarization measured using cardinals’ birthplaces (POLBIRTH) has a positive and significant effect on the length of the conclave: 1 standard deviation increase in POLBIRTH increases the length of the conclave by 25 percent. To analyze whether the changes to the College of Cardinals implemented by pope Sixtus V had an effect on this relationship, we split the sample into papacies pre-1585 and post-1585 (columns 2 and 3, respectively). The relationship between polarization and conclave length only holds for papacies in the first half of our sample, with 1 standard deviation increase in polarization extending the conclave by 44 percent (column 2). After 1585 polarization has no statistically significant impact on the conclave length. However, the variable *interregnum* has a positive and significant effect: a delay of 15 days to start the conclave

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<sup>21</sup>For example, for cardinal Jacques de Via, who died in 1317, Miranda (2012) states that “Some sources have indicated that he may have died because of ‘witchcraft’ or due to being poisoned; others (...) indicate that he died of natural causes”.



(equivalent to 1 standard deviation) increases the length of the conclave by 46 percent.

We corroborate these findings in the last three columns of Table 4, where we estimate a duration model with the length of the conclave as our dependent variable. We present the coefficients estimates instead of the hazard ratios since we have continuous covariates. As in the linear model, we find that POLBIRTH significantly decreases the hazard of an end of the conclave. With the estimates of column 4, one standard deviation increase in polarization decreases the hazard of an end of the conclave by 39 percent. Similar to before, columns 5 and 6 show that this relationship between polarization and conclave length is driven by our pre-1585 sample. After 1585 we find polarization increases the hazard of a conclave end, but only significant at 10 percent. Except for one specification, we do not find a significant effect of fractionalization on the length of the conclave. By and large, these results indicate that a more polarized College of cardinals faced a longer conclave, particularly before year 1585.

## 5.2 Main result: polarization and conflict

Table 5 presents the results of estimating a linear probability model for equation (3) to analyze the effect of polarization and fractionalization in the College of Cardinals on the incidence of internal conflict. In column 1 we include the measures of fractionalization and polarization constructed considering cardinals' birthplaces (FRACBIRTH and POLBIRTH, respectively), and only controlling by the number of cardinals attending the conclave,  $ncard$ . It is commonly believed that after long papacies the cardinals would choose older popes to have a *transitory regime*. Therefore in column 2 we add controls for the length of current and previous papacy ( $lpapacy_t$  and  $lpapacy_{t-1}$ ), as well as the number of days to start the conclave (*interregnum*) and the age of the pope when elected (*ageelected*). In column 3 we include controls for disturbances in other parts of Italy ( $italy_t$ ), and wars of the Papal States with other European powers ( $wars_t$ ). In column 4 we include controls for weather anomalies ( $weather_t$ ) and jubilee years ( $jubilee_t$ ). Finally, in columns 5 and 6 we include century and half-century dummies, respectively.

The estimates for POLBIRTH are positive and statistically significant at 1 or 5 percent across all specifications. An increase of 1 standard deviation in POLBIRTH (0.097) raises the probability of conflict by between 2.3 and 2.9 percent, depending on the specification. On the other hand, FRACBIRTH is statistically insignificant in all specifications.

Most of our controls are statistically insignificant, specially after including century and half-century dummies, as it is the case for  $ncard$ . One standard deviation increase in

wars with other states significantly increase the probability of internal conflict 4 percent, while being in a holy year of jubilee decreases the probability of conflict by 4.4 percent (column 4).

### 5.3 Discussion of Magnitudes

Our results indicate that increasing polarization in the conclave by 1 standard deviation raises the likelihood of conflict by at least 2.3 percent. But our hypothesis suggests that conflict should arise earlier in the papacy, since a weak or inexperienced pope might learn from his mistakes over time. In Table 6 we include as a control the number of years since the conclave took place (columns 1 and 3), and we interact it with our measures of disagreement among cardinals (columns 2 and 4). The results show that polarization had a larger effect in the year of the conclave (the probability of conflict increases by 4 percent for a 1 standard deviation increase in POLBIRTH in column 4), but it progressively decreases in magnitude for later years. In Figure 3 we plot the effect of a 1 standard deviation increase in POLBIRTH on the probability of internal conflict for up to 10 years after the conclave, which is the average conclave length in our sample. We also include the 95 percent confidence interval. The effect is positive throughout all years but decreasing in magnitude, and statistically significant only up to the seventh year after the conclave. These results are compatible with our learning hypothesis, but it is also possible that the College of Cardinals lost influence during the papacy due to strategic nomination of new cardinals by the elected pope. We discuss this possibility later.

As explained earlier, during the papacy of Sixtus V there were a number of reforms that changed the size and role of the College of Cardinals. Similarly to what we did to analyze the length of the conclave, in Table 7 we now split the sample into pre-1585 (columns 1 to 3) and post-1585 (columns 4 to 6). Looking at the pre-1585 sample, we find that the effect of POLBIRTH on conflict is almost twice as large than in the pooled sample (Table 5, column 5). A 1 standard deviation increase in POLBIRTH (0.121) raises the probability of conflict by 3.8 percent (column 3). In contrast, columns 4-6 show that both FRACBIRTH and POLBIRTH do not have a significant effect on conflict. Therefore the effect of polarization in the College of Cardinals on conflict is present only in the first half of our sample.

Finally, to analyze the overall effect of POLBIRTH on the probability of internal conflict we estimate equation (3), but now using the data at the papacy-level, instead of year-level. We present these results in Table A-2 in the Appendix. In columns 1 and

2 we include the dummy variable DIST as dependent variable, which takes the value of 1 if there was an internal disturbance during the papacy. In columns 3 and 4 we only consider disturbances that took place in the first 5 years of the papacy (DIST5), while in column 5 and 6 we consider the fraction of the papacy under disturbances (PROPDIST) as the dependent variable. By and large these results confirm our previous findings: an increase in polarization during the conclave, measured by POLBIRTH, has a positive effect on the probability of observing a disturbance in the following papacy. Regarding the magnitude of the effect, a 1 standard deviation increase in POLBIRTH (0.104) raises the probability of conflict in the papacy by 15 percent (column 1), and disturbances in the first 5 years of the papacy by 16 percent (column 3).

## 5.4 Robustness and placebo tests

In this section we describe several regressions we perform to assess the robustness of our results.

### 5.4.1 Disturbances in the rest of Italy

If division among the cardinals had an effect on internal conflict only in the Papal States because it proxies for the quality of the pope as a leader, we should not observe an increase in disturbances elsewhere. In Table A-3 in Appendix A we perform this placebo test, with a dummy for disturbances in Italy excluding the Papal States ( $italy_t$ ) as our dependent variable. We find that polarization has no effect on the likelihood of disturbances in the rest of Italy, neither in the full nor in the pre-1585 samples. Fractionalization, on the other hand, has a negative and significant effect on the probability of conflict, but this effect disappears once we include century dummies. These results indicate that it is unlikely that polarization in the College of Cardinals is proxying for conflict throughout all Italy. They also provide evidence against an increase in the incidence of conflict because of the weakness of the popes on religious grounds. If this were the case, conflict should be observed elsewhere in Italy, and not only within the Papal States.

### 5.4.2 Workplace instead of birthplace

As mentioned earlier, cardinals needed the support of civil rulers for their nomination, and therefore their workplace could play a relevant role. In Table A-4 we replicate our main result of Table 5 but now constructing our measures of polarization and fractionalization using the cardinals' place of work instead of their birthplace. These variables are

labeled as FRACWORK and POLWORK for fractionalization and polarization, respectively. Throughout all specifications we find that polarization in the College of Cardinals significantly increased the likelihood of conflict, while fractionalization is statistically insignificant. The magnitude of the effect is comparable to the one in Table 5, with 1 standard deviation increase in polarization raising the likelihood of conflict by between 2 and 2.7 percent.<sup>22</sup>

#### 5.4.3 Polarization and fractionalization weighted by distance

Throughout the paper we use “binary” measures of fractionalization and polarization, i.e. without considering inter-group distances. Esteban, Mayoral, and Ray (2012) find that distributional measures that take into account inter-group distances better predict the incidence of ethnic conflict. We allow for this possibility by replacing our measures of polarization and fractionalization by the following indexes:

$$FRACBIRTH^* = \sum_{i=1}^N \sum_{j=1}^N \pi_i \pi_j d_{ij} \quad (4)$$

$$POLBIRTH^* = \sum_{i=1}^N \sum_{j=1}^N \pi_i^2 \pi_j d_{ij} \quad (5)$$

where as before  $\pi_i$  is the proportion of cardinals belonging to a birthplace group  $i$ , and  $d_{ij}$  is a measure of distance between birthplace groups  $i$  and  $j$ . These indexes collapse to FRACBIRTH and POLBIRTH when  $d_{ij}$  is just a 0—1 variable. This distance is meant to capture differences in preferences over public goods. We depart from the conflict literature and use the log of the distance between capital cities as our measure of distance, instead of linguistic distance.<sup>23</sup> Our argument for this choice is both historical as well as practical. Latin was the common language of the clergy, and most cardinals spoke several languages.<sup>24</sup> Therefore it does not seem appropriate to use language as a proxy for differences in cardinals’ preferences.

We present the results of this exercise in Table A-5. Columns 1 and 2 show the results for the whole period, while columns 3 and 4 restrict the sample to the pre-1585 period. Polarization has a positive and significant effect, while fractionalization is

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<sup>22</sup>These results are not surprising given that the correlation between POLBIRTH and POLWORK is 0.78.

<sup>23</sup>We computed distances using <http://www.daftlogic.com/projects-google-maps-distance-calculator.htm>

<sup>24</sup>See Burke (2004) for a discussion on the use of Latin in the church. Latin was also used by lawyers, officials, diplomats and travellers.

statistically significant. A 1 standard deviation increase in polarization for the whole sample (0.128) raises the probability of conflict by between 2.3 and 2.5 percent, while for the pre-1585 sample our results are significantly larger: a 1 standard deviation increase in polarization (0.159) raises the probability of conflict by 3.8 percent. The similarity in terms of magnitudes of these results to the ones in our benchmark specification validate the use of the “binary” measures of disagreement among the cardinals.

#### 5.4.4 Alternative birthplace grouping

In our previous analysis we classified cardinals’ place of birth in 23 different groups. In Table A-6 we reproduce our main results using a much more disaggregated grouping, presented in Table A-7. As before, the effect of polarization is positive and significant in all specifications. For the whole period of analysis, a 1 standard deviation increase in polarization (0.086) raises the probability of conflict by between 3.3 and 3.9 percent, depending on the specification. The analogous effect for the pre-1585 sample goes from 4.3 to 5.3 percent (the standard deviation of POLBIRTHALT for this sample is 0.105).

### 5.5 Decomposing changes in the College of Cardinals

As previously discussed, strategic nomination of cardinals by the pope can present a challenge to our empirical strategy. To address this issue, we decompose cardinals attending conclaves into two groups: those that were present in the previous conclave (and therefore survived the last papacy), and those that were nominated by the pope. The composition of the former should be affected only by plausibly exogenous deaths of cardinals, while the latter, in addition to deaths of cardinals, is entirely determined by the pope’s nominations. We construct measures of fractionalization and polarization using cardinals’ birthplaces within these two groups. The measures for those cardinals that survived the last papacy are FRACOLD and POLOLD, while the ones for cardinals nominated by the last pope are FRACNEW and POLNEW.

Table 8 shows our results. Both measures of polarization show a positive effect on the likelihood of internal conflict, but only POLOLD is statistically significant in 5 of 6 specifications. On the other hand, none of the fractionalization measures are statistically significant. Given the nonlinearity of polarization and fractionalization indexes, we cannot regard POLOLD and POLNEW as an absolute decomposition of POLBIRTH. However, these results are informative of the channel through which divisions among the cardinals are affecting internal conflict, and therefore provide evidence that the nominations of cardinals by the pope are not the driving force of our results.

## 6 Other outcomes: conflict intensity, wars and religious productivity

### 6.1 Intensity of internal disturbances

We have seen that a more polarized college of cardinals increases the probability of internal conflict during the subsequent papacy. But does increased polarization affect the magnitude of these disturbances? We test for this possibility by estimating equation (3), but now with the intensity of conflict as the dependent variable. As explained before, we only have this variable available for conflicts reported in [Sorokin \(1937\)](#).

Table 9 presents our results. In columns 1-4 we present OLS estimations, while in columns 5-8 we show results for Tobit estimations. As before, we show results for the whole sample and for the pre-1585 sample. Our measure of polarization in the College of Cardinals is positive and significant in all specifications. Conditional on observing a conflict, a 1 standard deviation increase in POLBIRTH raises the intensity of conflict in the pre-1585 sample by between 3.43 and 4.57, equivalent to an increase of 26 and 35 percent in the average intensity.

### 6.2 Wars against other states

In this section we analyze whether our measures of disagreement among the cardinals can explain the incidence of wars against other states. However, we do not have a clear prediction regarding the sign of the coefficient on polarization. On the one hand, more polarized conclaves might debilitate the position of elected popes to fight wars against other states, either by “tying his hands” with capitulations, or by agreements among different factions of cardinals. On the other hand, a weaker pope might make the Papal States more likely to be attacked by other states. [Chiozza and Goemans \(2011\)](#) also argue that weak leaders might find worthy to start a war to increase their legitimacy at home.

We estimate a linear probability model where the dependent variable is dummy variable indicating whether the Papal States were at war with other state. Table 10 presents these results. Looking at the results for the whole sample (columns 1 and 2), we find that polarization has a positive effect on the probability of war, but only significant once we include additional controls. The point estimate, however, is very similar in both columns. The effect of fractionalization on the likelihood of war, on the other hand, is positive and significant in column 1 but disappears when we include controls in column 2. The effect of polarization on war is sizeable: a 1 standard deviation

increase in POLBIRTH raises the probability of war by 5 percent (column 2).

In columns 3 and 4 we restrict the sample to pre-1585 years, and find similar results to those for the full sample. Finally, in columns 5 and 6 we look at years post-1585, and find that both polarization and fractionalization have a positive and significant effect when we do not include additional controls (column 5), but the significance of these effects disappear once controls are included (column 6).

These results echo those for the incidence of internal conflict, and suggest that more polarization in the College of Cardinals lead to a higher probability of being at war against other states, particularly before the reforms introduced by Sixtus V after 1585.

### 6.3 Religious productivity: canonizations and beatifications

We have shown that a more polarized conclave leads to more conflict, within the Papal States and also with other states. We have argued that a more polarized conclave elects consensus candidates that might not have enough support to suppress revolts. But did polarization also weaken the religious productivity of popes? To answer this question we analyze canonizations (the naming of saints) and beatifications (the naming of blessed) as proxies for the pope's religious productivity.<sup>25</sup> We rely on Barro, McCleary, and McQuoid (2011) for data on the number of beatified and canonized post-1592, and on Walsh (2011b) for data pre-1592 (available only for the number of canonized).

Table 11 shows our results. For the full and pre-1585 sample (columns 1-4) we do not observe a significant effect of polarization and fractionalization on the number of canonizations. On the post-1585, however, we observe a negative and significant effect for both FRACBIRTH and POLBIRTH. When looking at beatifications (only post-1592), there is a negative effect of FRACBIRTH and POLBIRTH in the most parsimonious specification (column 7), but these effects are not statistically significant and moreover disappear when we include other controls.

Taken together, these results suggest that divisions among the cardinals did not have an effect on the number of canonized pre-1585. After the reforms of Sixtus V, more polarization and fractionalization reduced the number of canonized, suggesting a possible substitution between warfare and sainthood making.

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<sup>25</sup>See Barro, McCleary, and McQuoid (2011) for a discussion on the determinants of canonizations and beatifications. The process of canonization requires papal approval, and it is a major activity of the Catholic Church.



## 7 Conclusions

Traditional models of conflict consider two parties (an elite and an oppressed group) that fight against each other. We argue that in most cases the elite is not a unified body, but it is composed of several groups that can disagree, particularly when selecting their leader. Therefore, if we were able to find exogenous variation on the level of disagreement among elite groups, we could tease out its effect on the incidence and intensity of internal conflict. But two problems arise: First, how can we identify the different elite groups, and measure their disagreement? And second, disagreement can be increased by conflict if we do not measure it before conflict takes place.

In this paper we overcome these issues by analyzing the effect of disagreement among cardinals during conclaves on internal conflict in the Papal States in 1295–1846. In the Catholic church the elite is clearly defined: the College of Cardinals elects the pope, and most of the time the successor comes from their own ranks. We construct measures of political grievances among the cardinals during the conclave based on their birthplace and analyze their impact on internal conflicts that took place in the subsequent papacy.

We first document that the length of a conclave is positively associated with an increase in polarization of the College of Cardinals, particularly before 1585. We interpret this result as evidence of the struggle of the cardinals to unite behind a single candidate, since even after controlling for the number of candidates attending the conclave (which we see as a proxy for the cost of the screening process), the coefficient on polarization measured by the cardinals' birthplaces is still large and statistically significant.

We then show that our measure of polarization significantly increases the probability of internal conflict, while our measure of fractionalization has a negative effect but statistically insignificant. These results are robust to several alternative specifications, such as using cardinals' workplace instead of birthplace to construct our measures of divisions, or taking into account distances between groups. We also find the effect of polarization to be larger in the first years of the papacy, to gradually fade after the seventh year. Consistent with our result for the length of the conclave, the relationship between polarization and the likelihood of conflict is stronger prior to the reforms introduced by pope Sixtus V, which permanently reduced the power of the College of Cardinals. Polarization also increases the intensity of conflict, as well as the probability of being at war with other states.

Our results complement those of [Montalvo and Reynal-Querol \(2005\)](#) and [Esteban, Mayoral, and Ray \(2012\)](#), who find that polarization is the driving force of ethnic conflict, on two dimensions. First, we show that polarization among the elite significantly



increases the incidence and intensity of conflict. This result is particularly relevant for autocracies, and in contexts where ethnicity is not a relevant marker. Second, we make use of the time series variation in our measures of both conflict and polarization within the Papal States, instead of relying on cross country data for identification. Between 1295 and 1846 the institution of the conclave remained almost unaltered, making it one of the longest lasting mechanisms for leader selection.

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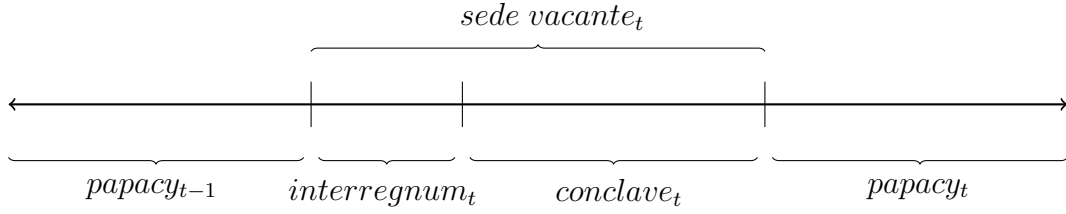
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Figure 1: The Papal States

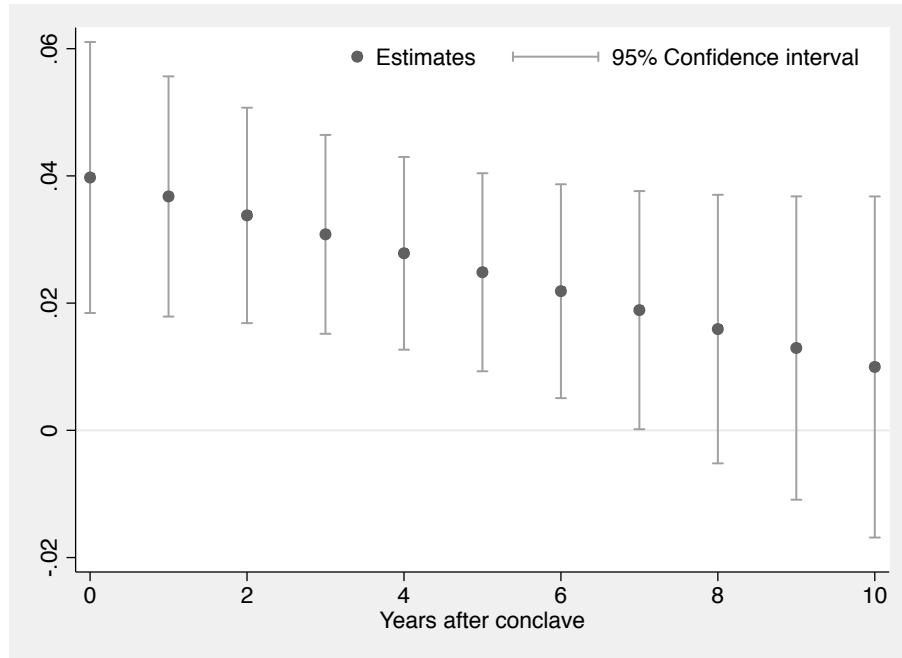


Source: D.S. Chambers, *Popes, cardinals and war: the military church in Renaissance and early modern Europe*, 2006.

**Figure 2:** Timing of papal elections



**Figure 3:** The effect of polarization on conflict



**Notes:** The estimates show the effect of a 1 s.d. increase in POLBIRTH on the probability of conflict, and are computed using the coefficients from column 4 in Table 6.

**Table 1:** Popes, cardinals and conclaves

Variable	Mean	Std. Dev.	Min.	Max.	N
<b>A. Popes</b>					
Age when elected (years)	61.4	10.5	37.3	79.9	62
Tenure (100 days)	31.68	22.15	0.12	89.62	62
<b>B. Cardinals</b>					
Number of cardinals	39.19	17.24	9	66	62
Number of cardinals before 1585	27.41	13.72	9	56	34
Number of cardinals after 1585	53.50	7.40	35	66	28
<b>C. Conclaves</b>					
Conclave length (100 days)	0.509	1.140	0.02	8.17	62
Conclaves before 1585 (100 days)	0.451	1.483	0.02	8.17	34
Conclaves after 1585 (100 days)	0.580	0.489	0.02	1.80	28
Vacant see (100 days)	0.823	1.563	0.12	8.62	62
Interregnum (100 days)	0.313	1.109	0.08	8.58	62

**Notes:** All sources are listed in the text. The unit of observation is a papacy. In panel B we include only cardinals participating in conclaves.



**Table 2:** Grouping of Cardinals' place of birth

Birthplace	Number	Percent
Aragon	10	0.77
Austria	7	0.54
Belgium	3	0.23
Castile	13	1.01
Crete	1	0.08
Cyprus	2	0.15
Czechoslovakia	2	0.15
England	13	1.01
France	207	16.03
Germany	21	1.63
Greece	2	0.15
Hungary	13	1.01
India	1	0.08
Italy - Center	479	37.10
Italy - North	307	23.78
Italy - South	110	8.52
Lithuania	1	0.08
Netherlands	1	0.08
Poland	6	0.46
Portugal	22	1.70
South America	1	0.08
Spain	67	5.19
Switzerland	2	0.15
Total	1,291	100

**Table 3:** Conflict, fractionalization, polarization and additional controls

Variable	Mean	Std. Dev.	Min.	Max.	N
<b>A. Internal Disturbances</b>					
Disturbances in Papal States (incidence)	0.052	0.223	0	1	552
Disturbances in Papal States (intensity)	0.58	3.02	0	24.1	552
Conditional on conflict	13.37	6.38	3.91	24.1	24
Disturbances in the rest of Italy (incidence)	0.168	0.375	0	1	552
<b>B. Wars</b>					
Wars against other states (incidence)	0.261	0.440	0	1	552
Wars against other states (number)	0.315	0.573	0	3	552
<b>C. Polarization and fractionalization</b>					
FRACBIRTH	0.639	0.117	0.226	0.852	552
POLBIRTH	0.760	0.097	0.415	0.988	552
FRACWORK	0.656	0.126	0.229	0.864	552
POLWORK	0.670	0.090	0.403	0.892	552
<b>D. Additional controls</b>					
Temperature anomalies	-0.249	0.262	-1.168	0.492	552
Jubilee year	0.034	0.182	0	1	552

**Notes:** All sources are listed in the text. In Panel A, intensity of disturbances is constructed with data from [Sorokin \(1937\)](#).

**Table 4:** Determinants of conclave length

Dep. Variable:	log( <i>lconclave</i> )			<i>lconclave</i>		
Papacies:	All	Pre-1585	Post-1585	All	Pre-1585	Post-1585
	(1)	(2)	(3)	(4)	(5)	(6)
FRACBIRTH	2.097 (2.130)	1.332 (2.009)	-5.104 (11.101)	-3.497** (1.601)	-0.758 (1.223)	8.240 (10.433)
POLBIRTH	2.395* (1.346)	3.454** (1.573)	-11.838 (10.906)	-3.693*** (1.391)	-3.698*** (1.162)	18.281* (10.647)
<i>lpapacy</i> <sub><i>t</i>-1</sub>	-0.011* (0.006)	-0.015 (0.015)	-0.014*** (0.005)	0.009 (0.006)	0.011 (0.008)	0.025** (0.011)
<i>interregnum</i> <sub><i>t</i></sub>	0.037 (0.105)	0.002 (0.088)	2.992*** (0.840)	-0.039 (0.117)	0.037 (0.046)	-5.150*** (1.363)
ncard	0.024 (0.020)	0.042 (0.030)	0.041 (0.053)	-0.019 (0.020)	-0.039* (0.023)	-0.082 (0.064)
Century dummies	yes	yes	yes	yes	yes	yes
Observations	62	34	28	62	34	28
R-squared	0.457	0.217	0.614	0.076 <sup>a</sup>	0.057 <sup>a</sup>	0.163 <sup>a</sup>

**Notes:** In columns 1-3 coefficients are estimated from a linear probability model with Newey-West standard errors allowing for a maximum of 5 lags in parentheses. In columns 4-6, coefficients are estimated from a Cox Proportional Hazard model. Coefficients, and not hazard ratios, are reported with robust standard errors in parenthesis. *lconclave* is measured in hundreds of days. \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10%, respectively. <sup>a</sup>: Pseudo R-squared.

**Table 5:** Fractionalization, polarization, and disturbances in the Papal States

Dep. Variable:	Disturbances within the Papal States <sub>t</sub>					
	(1)	(2)	(3)	(4)	(5)	(6)
FRACBIRTH	-0.091 (0.084)	-0.091 (0.087)	-0.135 (0.101)	-0.113 (0.090)	-0.007 (0.091)	0.025 (0.117)
POLBIRTH	0.264*** (0.091)	0.304*** (0.091)	0.254*** (0.083)	0.245*** (0.086)	0.260*** (0.081)	0.237** (0.096)
ncard	-0.002*** (0.001)	-0.003*** (0.001)	-0.002*** (0.001)	-0.002** (0.001)	-0.004*** (0.001)	-0.004 (0.002)
lpapacy <sub>t</sub>		-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.001 (0.001)	-0.001 (0.001)
lpapacy <sub>t-1</sub>		-0.001** (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
interregnum		0.001 (0.007)	0.005 (0.007)	0.005 (0.007)	0.009 (0.007)	0.007 (0.009)
ageelected		0.002 (0.001)	0.001 (0.001)	0.001 (0.001)	0.002 (0.001)	0.002 (0.001)
italy <sub>t</sub>			0.039 (0.033)	0.040 (0.033)	0.039 (0.035)	0.039 (0.036)
wars <sub>t</sub>			0.077** (0.038)	0.079** (0.039)	0.084** (0.042)	0.083* (0.045)
weather <sub>t</sub>				0.050 (0.042)	0.034 (0.045)	0.034 (0.046)
jubilee <sub>t</sub>				-0.054*** (0.017)	-0.054*** (0.019)	-0.054*** (0.019)
Century dummies	no	no	no	no	yes	no
Half-century dummies	no	no	no	no	no	yes
Observations	553	553	553	553	553	553
R-squared	0.041	0.054	0.076	0.081	0.087	0.088

**Notes:** Coefficients are estimated from a linear probability model with Newey-West standard errors allowing for a maximum of 10 lags in parentheses. The dependent variable is a dummy indicating whether there were disturbances within the Papal States during year  $t$ . \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10%, respectively.

**Table 6:** Persistence of the Effect

Dep. Variable:	disturbances <sub>t</sub>			
	(1)	(2)	(3)	(4)
FRACBIRTH	-0.113 (0.090)	-0.118 (0.125)	-0.006 (0.091)	-0.003 (0.121)
POLBIRTH	0.245*** (0.086)	0.419*** (0.107)	0.261*** (0.081)	0.412*** (0.113)
years since conclave	0.001 (0.002)	0.026 (0.019)	0.001 (0.002)	0.025 (0.019)
FRACBIRTH×years since conclave		0.002 (0.019)		-0.000 (0.018)
POLBIRTH×years since conclave		-0.034* (0.019)		-0.031 (0.020)
Additional controls	yes	yes	yes	yes
Century dummies	no	no	yes	yes
Observations	553	553	553	553
R-squared	0.0813	0.0842	0.0875	0.0897

**Notes:** Coefficients are estimated from a linear probability model with Newey-West standard errors allowing for a maximum of 10 lags in parentheses. Additional controls are ncard, lpapacy<sub>t</sub>, lpapacy<sub>t-1</sub>, interregnum, ageelected, italy<sub>t</sub>, wars<sub>t</sub>, weather<sub>t</sub> and jubilee<sub>t</sub>. \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10%, respectively.

**Table 7:** Before and after 1585

Dep. Variable:	disturbances <sub>t</sub>					
Sample:	Pre-1585			Post-1585		
	(1)	(2)	(3)	(4)	(5)	(6)
FRACBIRTH	-0.116 (0.088)	-0.145 (0.105)	-0.007 (0.084)	-0.241 (0.435)	0.108 (0.564)	0.357 (0.601)
POLBIRTH	0.314*** (0.098)	0.283*** (0.090)	0.317*** (0.090)	-0.116 (0.387)	0.336 (0.562)	0.264 (0.587)
ncard	-0.002* (0.001)	-0.002** (0.001)	-0.004 (0.003)	-0.002 (0.001)	-0.003* (0.002)	-0.005** (0.002)
Additional controls	no	yes	yes	no	yes	yes
Century dummies	no	no	yes	no	no	yes
Observations	291	291	291	262	262	262
R-squared	0.033	0.095	0.102	0.010	0.043	0.061

**Notes:** Coefficients are estimated from a linear probability model with Newey-West standard errors allowing for a maximum of 10 lags in parentheses. Additional controls are lpapacy<sub>t</sub>, lpapacy<sub>t-1</sub>, interregnum, ageelected, italy<sub>t</sub>, wars<sub>t</sub>, weather<sub>t</sub> and jubilee<sub>t</sub>. \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10%, respectively.

**Table 8:** Decomposing changes in the College of Cardinals

Dep. Variable: Sample:	Disturbances within the Papal States <sub>t</sub>					
	Pre-1585			Post-1585		
	(1)	(2)	(3)	(4)	(5)	(6)
FRACOLD	-0.005 (0.102)	-0.067 (0.097)	-0.146 (0.106)	-0.030 (0.151)	-0.127 (0.136)	-0.207 (0.128)
POLOLD	0.094* (0.051)	0.118** (0.053)	0.167** (0.074)	0.118 (0.078)	0.147* (0.076)	0.198** (0.100)
FRACNEW	-0.096 (0.062)	-0.036 (0.061)	-0.031 (0.066)	-0.098 (0.097)	-0.016 (0.086)	-0.004 (0.097)
POLNEW	0.070 (0.081)	0.052 (0.077)	0.064 (0.075)	0.085 (0.103)	0.016 (0.100)	0.018 (0.098)
ncard	-0.002*** (0.001)	-0.002** (0.001)	-0.005*** (0.002)	-0.002* (0.001)	-0.002* (0.001)	-0.005* (0.003)
lpapacy <sub>t</sub>		-0.000 (0.000)	-0.000 (0.001)		-0.002 (0.001)	-0.002 (0.001)
lpapacy <sub>t-1</sub>		-0.000 (0.000)	-0.001 (0.001)		-0.001 (0.001)	-0.001 (0.001)
interregnum		0.004 (0.007)	0.009 (0.008)		0.009 (0.009)	0.013 (0.009)
ageelected		0.001 (0.001)	0.002 (0.001)		0.001 (0.002)	0.002 (0.002)
italy <sub>t</sub>		0.042 (0.035)	0.045 (0.036)		0.070 (0.050)	0.073 (0.051)
wars <sub>t</sub>		0.083** (0.040)	0.083** (0.042)		0.118* (0.068)	0.107 (0.071)
weather <sub>t</sub>		0.058 (0.042)	0.031 (0.046)		0.068 (0.060)	0.051 (0.071)
jubilee <sub>t</sub>		-0.055*** (0.016)	-0.058*** (0.019)		-0.071** (0.028)	-0.078** (0.033)
Century dummies	no	no	yes	no	no	yes
Observations	553	553	553	291	291	291
R-squared	0.035	0.076	0.083	0.024	0.089	0.094

**Notes:** Coefficients are estimated from a linear probability model with Newey-West standard errors allowing for a maximum of 10 lags in parentheses. The dependent variable is a dummy indicating whether there were disturbances within the Papal States during year  $t$ . \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10%, respectively.

**Table 9:** Intensity of disturbances in the Papal States

Dep. Variable: Model: Sample:	Intensity <sub>t</sub>							
	OLS				Tobit			
	All		Pre-1585		All		Pre-1585	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
FRACBIRTH	-1.983 (1.936)	-0.922 (1.500)	-2.443 (2.062)	-1.067 (1.686)	-21.710 (23.760)	-8.538 (20.056)	-30.060 (24.599)	-6.401 (20.157)
POLBIRTH	2.542* (1.425)	2.353* (1.262)	3.206** (1.568)	3.512** (1.430)	44.385* (23.854)	31.075* (18.557)	51.957** (23.507)	38.995** (18.586)
ncard	-0.032*** (0.011)	-0.029 (0.018)	-0.037** (0.015)	-0.015 (0.048)	-0.791*** (0.184)	-0.558 (0.476)	-0.600** (0.278)	-0.340 (0.540)
<i>lpapacy<sub>t</sub></i>		-0.015 (0.012)		-0.046 (0.029)		-0.059 (0.139)		-0.191 (0.163)
<i>lpapacy<sub>t-1</sub></i>		-0.008 (0.006)		-0.005 (0.015)		-0.292*** (0.105)		-0.185 (0.118)
ageelected		-0.001 (0.026)		-0.002 (0.037)		-0.098 (0.227)		-0.025 (0.247)
italy <sub>t</sub>		0.455 (0.504)		0.665 (0.692)		7.933 (5.020)		8.365* (5.017)
wars <sub>t</sub>		1.550* (0.887)		2.036 (1.552)		19.153** (8.417)		15.931* (9.089)
weather <sub>t</sub>		1.185 (0.759)		2.062 (1.587)		18.934 (13.073)		14.039 (11.994)
jubilee <sub>t</sub>		-0.587** (0.252)		-0.800* (0.445)		-120.772 (0.000)		-120.235 (0.000)
Century dummies	no	yes	no	yes	no	yes	no	yes
Observations	553	553	291	291	553	553	291	291
R-squared	0.046	0.115	0.039	0.129	0.077	0.162	0.046	0.107

**Notes:** Coefficients in columns 1-4 are estimated from a linear probability model with Newey-West standard errors allowing for a maximum of 10 lags in parentheses, and in columns 5-8 from a tobit model with robust standard errors clustered at the papacy level. The dependent variable is conflict intensity in year  $t$ . \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10%, respectively.

**Table 10:** Wars against other states

Dep. Variable: Sample:	All		wars <sub>t</sub> Pre-1585		Post-1585	
	(1)	(2)	(3)	(4)	(5)	(6)
FRACBIRTH	0.646** (0.305)	-0.138 (0.318)	0.469 (0.317)	-0.289 (0.310)	5.604*** (1.784)	0.508 (2.273)
POLBIRTH	0.615 (0.383)	0.618** (0.292)	0.758* (0.409)	0.619** (0.288)	4.604*** (1.442)	-0.600 (2.286)
ncard	-0.006** (0.002)	-0.012** (0.006)	-0.001 (0.004)	-0.021*** (0.006)	-0.006 (0.006)	-0.007 (0.010)
lpapacy <sub>t</sub>		0.003 (0.002)		0.004 (0.003)		0.000 (0.002)
lpapacy <sub>t-1</sub>		-0.005*** (0.001)		-0.006** (0.003)		-0.005** (0.002)
ageelected		0.003 (0.004)		0.007 (0.004)		-0.012 (0.009)
italy <sub>t</sub>		-0.036 (0.052)		-0.007 (0.062)		-0.085 (0.068)
weather <sub>t</sub>		-0.120 (0.123)		-0.230 (0.185)		0.032 (0.180)
jubilee <sub>t</sub>		-0.145** (0.064)		-0.240*** (0.064)		0.007 (0.083)
Century dummies	no	yes	no	yes	no	yes
Observations	553	553	291	291	262	262
R-squared	0.064	0.200	0.065	0.226	0.108	0.224

**Notes:** Coefficients are estimated from a linear probability model with Newey-West standard errors allowing for a maximum of 10 lags in parentheses. The dependent variable is a dummy indicating whether the Papal States were at war with another state during year  $t$ . \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10%, respectively.



**Table 11:** Canonizations and beatifications

Dep. Variable:	Canonizations <sub>t</sub>						Beatifications <sub>t</sub>	
Sample:	All		Pre-1585		Post-1585		Post-1592	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
FRACBIRTH	-0.663 (1.580)	0.478 (1.722)	1.110 (1.060)	0.779 (1.474)	-34.643*** (12.076)	-46.549*** (15.373)	-47.157 (41.945)	26.342 (34.723)
POLBIRTH	2.183 (1.682)	1.139 (2.171)	0.629 (1.516)	0.173 (1.986)	-25.435* (13.646)	-27.489** (12.742)	-24.220 (32.031)	39.282 (27.077)
ncard	0.019 (0.018)	0.013 (0.019)	-0.026* (0.015)	-0.032 (0.022)	-0.024 (0.039)	-0.088* (0.044)	-0.214** (0.080)	-0.079 (0.105)
<i>lpapacy<sub>t</sub></i>		0.028*** (0.011)		0.038** (0.018)		-0.027 (0.021)		0.211*** (0.063)
<i>lpapacy<sub>t-1</sub></i>		0.006 (0.008)		-0.004 (0.010)		-0.018 (0.018)		-0.033 (0.020)
ageelected		0.054* (0.028)		0.021 (0.022)		0.091* (0.046)		0.139 (0.109)
italy <sub>t</sub>		0.425 (0.523)		-0.712 (0.466)		2.557*** (0.778)		-2.835 (1.666)
wars <sub>t</sub>		0.270 (0.504)		0.588 (0.754)		2.188 (1.463)		-4.282** (1.780)
weather <sub>t</sub>		0.196 (1.072)		-0.120 (0.727)		0.392 (1.305)		6.826** (2.976)
Century dummies	no	yes	no	yes	no	yes	no	yes
Observations	63	63	34	34	29	29	25	25
R-squared	0.043	0.205	0.062	0.240	0.181	0.510	0.203	0.794

**Notes:** Coefficients are estimated with Newey-West standard errors allowing for a maximum of 5 lags in parentheses. The dependent variable is the number of canonizations in year  $t$  for columns 1-6, and the number of beatifications in year  $t$  for columns 7-8. \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10%, respectively.

## Appendix A: Additional Tables

**Table A-1:** List of internal disturbances in the Papal States

Year	Disturbance	Source	Intensity
1296	Coup d'etat at Rimini	Sorokin (1937)	5.60
1303	Armed attack of Pope	Sorokin (1937)	3.91
1308	Civil war at Ferrara, Modena and Reggio	Sorokin (1937)	12.05
1317	Insurrection at Ferrara	Sorokin (1937)	6.60
1327	Revolution at Rome	Sorokin (1937)	7.92
1332	Disturbances at Bologna	Sorokin (1937)	5.82
1349	Roman revolution (Cola di Rienzi)	Sorokin (1937)	16.14
1375-8	Uprising in the Pope's province	Sorokin (1937)	24.1
1393	Disturbances at Viterbo and Perugia	Sorokin (1937)	9.08
1405	Disturbances at Rome	Sorokin (1937)	9.66
1410-2	Civil war at Bologna	Sorokin (1937)	15.52
1416	Insurrection at Bologna	Sorokin (1937)	15.17
1434	Republican insurrection at Rome	Sorokin (1937)	17.10
1488	Murder of the tyrant at Forli-Fachino	Sorokin (1937)	4.54
1502	Uprising of the condottieri in Romagna	Sorokin (1937)	9.06
1511	Disturbances at Rome	Sorokin (1937)	9.66
1528	Anti-Spanish uprising in Aquila	Alfani (2013)	-
1545	Farnese vs The Papal States	Alfani (2013)	-
1590	Disturbances at Mantua	Alfani (2013)	-
1635	Disturbances at Nonantola	Alfani (2013)	-
1648	Disturbances at Bologna	Alfani (2013)	-
1796-7	Republican insurrection in middle Italy	Sorokin (1937)	15.17
1831	Revolution at Romagna, Parma, and Modena	Sorokin (1937)	15.17

**Notes:** To be added.

**Table A-2:** Fractionalization, polarization, and disturbances in the Papal States (papacy-level regression)

Dep. Variable:	DIST		DIST5		PROPDIST	
	(1)	(2)	(3)	(4)	(5)	(6)
FRACBIRTH	-0.331 (0.339)	-0.410 (0.319)	-0.328 (0.279)	-0.312 (0.287)	-0.112 (0.071)	-0.131 (0.081)
POLBIRTH	1.410*** (0.369)	1.381*** (0.363)	1.576*** (0.240)	1.591*** (0.256)	0.372** (0.142)	0.395*** (0.146)
ncard	-0.014*** (0.002)	-0.016*** (0.003)	-0.013*** (0.002)	-0.015*** (0.002)	-0.003*** (0.001)	-0.004*** (0.001)
lpapacy <sub>t</sub>		0.005** (0.002)		0.004 (0.003)		0.000 (0.001)
lpapacy <sub>t-1</sub>		-0.005** (0.002)		-0.004* (0.002)		-0.001** (0.000)
ageelected		0.003 (0.004)		0.003 (0.004)		0.002 (0.002)
italy <sub>t</sub>		-0.137 (0.118)		-0.096 (0.116)		-0.035 (0.034)
wars <sub>t</sub>		0.092 (0.123)		-0.060 (0.097)		0.007 (0.020)
weather <sub>t</sub>		0.090 (0.180)		-0.004 (0.189)		0.035 (0.039)
Observations	63	63	63	63	63	63
R-squared	0.389	0.534	0.423	0.493	0.409	0.480

**Notes:** Robust standard errors in parentheses. The coefficients are estimated from a linear probability model with Newey-West standard errors allowing for a maximum of 5 lags in parentheses. DIST is a dummy variable indicating whether there were disturbances within the Papal States during papacy  $t$ . DIST5 considers disturbances that took place during the first 5 years of the papacy. PROPDIST is the proportion of the papacy under disturbances. The variables  $\text{grains}_t$  and  $\text{weather}_t$  are averages over the years of the papacy. \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10%, respectively.

**Table A-3:** Fractionalization, polarization, and disturbances in Italy (placebo test)

Dep. Variable: Sample:	italy <sub>t</sub>			
	All		Pre-1585	
	(1)	(2)	(3)	(4)
FRACBIRTH	-0.308** (0.137)	0.127 (0.298)	-0.436*** (0.150)	0.032 (0.298)
POLBIRTH	0.252 (0.212)	0.400 (0.261)	0.353 (0.261)	0.414 (0.296)
ncard	-0.006*** (0.001)	0.000 (0.003)	-0.005** (0.002)	0.001 (0.004)
<i>lpapacy<sub>t</sub></i>	-0.000 (0.001)	-0.000 (0.001)	0.000 (0.002)	-0.000 (0.002)
<i>lpapacy<sub>t-1</sub></i>	-0.002*** (0.001)	-0.002** (0.001)	-0.005*** (0.002)	-0.005*** (0.001)
interregnum	-0.008 (0.007)	-0.008 (0.007)	-0.011 (0.008)	-0.010 (0.008)
ageelected	0.001 (0.002)	0.001 (0.002)	0.001 (0.003)	-0.000 (0.003)
Papal States <sub>t</sub>	0.113 (0.089)	0.107 (0.094)	0.166 (0.113)	0.152 (0.119)
wars <sub>t</sub>	-0.058 (0.043)	-0.042 (0.044)	-0.078 (0.066)	-0.028 (0.067)
weather <sub>t</sub>	-0.056 (0.076)	-0.046 (0.078)	-0.190* (0.113)	-0.169 (0.115)
jubilee <sub>t</sub>	0.051 (0.080)	0.049 (0.075)	0.161 (0.126)	0.171 (0.118)
Century dummies	no	yes	no	yes
Observations	553	553	291	291
R-squared	0.0857	0.111	0.0921	0.116

**Notes:** Coefficients are estimated from a linear probability model with Newey-West standard errors allowing for a maximum of 10 lags in parentheses. The dependent variable is a dummy variable indicating whether there were disturbances in Italy, excluding the Papal States, during papacy  $t$ . Papal States <sub>$t$</sub>  is a dummy for internal disturbances in the Papal States. \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10%, respectively.

**Table A-4:** Fractionalization and polarization computed using cardinals' workplace

Dep. Variable:	Disturbances within the Papal States <sub>t</sub>					
	(1)	(2)	(3)	(4)	(5)	(6)
FRACWORK	-0.073 (0.075)	-0.060 (0.081)	-0.079 (0.085)	-0.061 (0.075)	-0.011 (0.076)	0.011 (0.105)
POLWORK	0.305*** (0.094)	0.286*** (0.089)	0.243*** (0.080)	0.231*** (0.086)	0.252*** (0.094)	0.220** (0.100)
ncard	-0.002*** (0.001)	-0.002*** (0.001)	-0.002*** (0.001)	-0.001** (0.001)	-0.004** (0.001)	-0.004 (0.003)
lpapacy <sub>t</sub>		0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.001 (0.001)	-0.001 (0.001)
lpapacy <sub>t-1</sub>		-0.001 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
interregnum		0.000 (0.007)	0.004 (0.007)	0.004 (0.007)	0.009 (0.007)	0.007 (0.009)
ageelected		0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
italy <sub>t</sub>			0.041 (0.033)	0.042 (0.033)	0.040 (0.036)	0.041 (0.036)
wars <sub>t</sub>			0.075** (0.037)	0.077** (0.039)	0.087** (0.042)	0.085* (0.046)
weather <sub>t</sub>				0.051 (0.045)	0.031 (0.045)	0.033 (0.047)
jubilee <sub>t</sub>				-0.059*** (0.017)	-0.058*** (0.019)	-0.057*** (0.019)
Century dummies	no	no	no	no	yes	no
Half-century dummies	no	no	no	no	no	yes
Observations	553	553	553	553	553	553
R-squared	0.043	0.050	0.072	0.077	0.086	0.086

**Notes:** Coefficients are estimated from a linear probability model with Newey-West standard errors allowing for a maximum of 10 lags in parentheses. The dependent variable is a dummy indicating whether there were disturbances within the Papal States during year  $t$ . \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10%, respectively.

**Table A-5:** Fractionalization and polarization weighted by distance

Dep. Variable: Sample:	disturbances <sub>t</sub>			
	All		Pre-1585	
	(1)	(2)	(3)	(4)
FRACBIRTH*	-0.012 (0.010)	-0.008 (0.014)	-0.015 (0.011)	-0.009 (0.013)
POLBIRTH*	0.198*** (0.058)	0.182*** (0.062)	0.239*** (0.063)	0.239*** (0.073)
ncard	-0.002*** (0.001)	-0.004*** (0.001)	-0.002** (0.001)	-0.005* (0.003)
<i>lpapacy<sub>t</sub></i>		-0.001 (0.001)		-0.002 (0.002)
<i>lpapacy<sub>t-1</sub></i>		-0.000 (0.000)		-0.001 (0.001)
interregnum		0.008 (0.007)		0.013 (0.009)
ageelected		0.002 (0.001)		0.002 (0.002)
italy <sub>t</sub>		0.043 (0.035)		0.068 (0.049)
wars <sub>t</sub>		0.082** (0.041)		0.104 (0.068)
weather <sub>t</sub>		0.031 (0.044)		0.054 (0.071)
jubilee <sub>t</sub>		-0.051*** (0.019)		-0.070** (0.035)
Century dummies	no	yes	no	yes
Observations	553	553	291	291
R-squared	0.042	0.086	0.035	0.102

**Notes:** Coefficients are estimated from a linear probability model with Newey-West standard errors allowing for a maximum of 10 lags in parentheses. FRACBIRTH\* and POLBIRTH\* are measures of fractionalization and polarization that take into account inter-group distances, and are defined in the text. \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10%, respectively.

**Table A-6:** Fractionalization and polarization computed using alternative grouping

Dep. Variable: Sample:	Disturbances within the Papal States <sub>t</sub>					
	All			Pre-1585		
	(1)	(2)	(3)	(4)	(5)	(6)
FRACBIRTHALT	0.021 (0.100)	-0.015 (0.107)	-0.011 (0.091)	0.013 (0.102)	-0.020 (0.115)	0.037 (0.083)
POLBIRTHALT	0.410*** (0.128)	0.388*** (0.113)	0.451*** (0.123)	0.500*** (0.152)	0.414*** (0.126)	0.426*** (0.131)
ncard	-0.002*** (0.001)	-0.001** (0.001)	-0.003*** (0.001)	-0.001 (0.001)	-0.001 (0.001)	-0.004 (0.003)
lpapacy <sub>t</sub>		-0.000 (0.000)	-0.000 (0.001)		-0.001 (0.001)	-0.002 (0.001)
lpapacy <sub>t-1</sub>		-0.000 (0.000)	-0.000 (0.000)		0.000 (0.001)	0.000 (0.001)
interregnum		0.009 (0.007)	0.013* (0.008)		0.012 (0.009)	0.017* (0.009)
ageelected		0.001 (0.001)	0.001 (0.001)		0.001 (0.002)	0.002 (0.002)
italy <sub>t</sub>		0.039 (0.033)	0.040 (0.034)		0.066 (0.046)	0.066 (0.048)
wars <sub>t</sub>		0.080** (0.039)	0.083** (0.042)		0.110* (0.063)	0.107 (0.071)
weather <sub>t</sub>		0.050 (0.042)	0.027 (0.043)		0.075 (0.064)	0.059 (0.072)
jubilee <sub>t</sub>		-0.054*** (0.016)	-0.053*** (0.018)		-0.076*** (0.028)	-0.076** (0.033)
Century dummies	no	no	yes	no	no	yes
Observations	553	553	553	291	291	291
R-squared	0.0498	0.0883	0.0976	0.0459	0.0994	0.105

**Notes:** Coefficients are estimated from a linear probability model with Newey-West standard errors allowing for a maximum of 10 lags in parentheses. The dependent variable is a dummy indicating whether there were disturbances within the Papal States during year  $t$ . FRACBIRTHALT and POLBIRTHALT are constructed using birthplace groups in Table A-7. \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10%, respectively.

**Table A-7:** Cardinals' place of birth, alternative grouping

Origin	Number	Percent	Origin	Number	Percent
Aragon	14	1.08	Modena	4	0.31
Baden	1	0.08	Naples	49	3.80
Bamberg	1	0.08	Papal States	401	31.06
Bavaria	1	0.08	Parma	6	0.46
Belgium	1	0.08	Perugia	1	0.08
Bologna	2	0.15	Poland	5	0.39
Burgundy	3	0.23	Portugal	20	1.55
Byzantine	1	0.08	Prato	1	0.08
Castile	11	0.85	Provence	2	0.15
England	22	1.70	Prussia	1	0.08
Ferrara	3	0.23	Ravenna	1	0.08
Flanders	1	0.08	Sardinia	8	0.62
Florence	86	6.66	Savoy	18	1.39
France	188	14.56	Saxony	2	0.15
Gascony	4	0.31	Sicily	1	0.08
Genoa	41	3.18	Siena	9	0.70
Habsburg	61	4.73	Spain	159	12.32
Hesse-Darmstadt	1	0.08	Swiss cantons	1	0.08
Holy Roman Empire	15	1.16	Todi	1	0.08
Hungary	3	0.23	Trebizond	1	0.08
Lithuania	1	0.08	Urbino	2	0.15
Lucca	5	0.39	Venice	75	5.81
Mantua	8	0.62	Wurzburg	1	0.08
Milan	47	3.64			
			Total	1,291	100



## Appendix B: Fractionalization and Polarization, additional details

We present the time series of FRACBIRTH and POLBIRTH in Figure B-1. An example of a conclave with high fractionalization and low polarization is the election of pope Pius II in 1458, where cardinals of 8 different birthplace groups participated and none of these groups accounted for more than 22% of the total number of cardinals. Conversely, the election of pope Innocent VII in 1404 presented high polarization but low fractionalization, with cardinals of only 2 birthplace groups participating in the conclave.

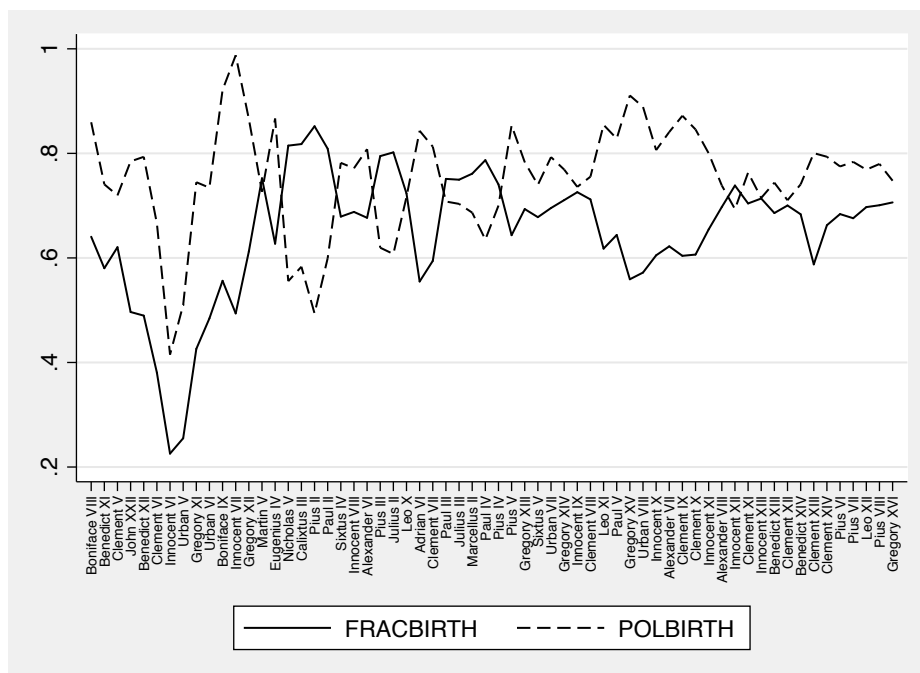
We follow [Montalvo and Reynal-Querol \(2005\)](#) and present the relationship between polarization and fractionalization in Figure B-2. The pattern observed is a positive correlation for low values of fractionalization, zero correlation for intermediate values, and a slightly negative correlation for high values, more evident when using cardinals' birthplace groups. [Montalvo and Reynal-Querol](#) observe that the pattern for low values of fractionalization is expected, since the ratio of fractionalization to polarization is  $1/2$  when there are only two groups. Interestingly, we observe a similar pattern to [Montalvo and Reynal-Querol \(2005\)](#) for intermediate and high values of fractionalization.

A final note on our measures of divisions. There are years in our sample with two or three officially recognized popes in power.<sup>26</sup> Given that our conflict data varies by year, in case of multiple popes per year we assign the pope (and therefore the measures of divisions during his election) that was in power for the longest time during that year. Our papacy-level regressions (Table A-2 in Appendix A) address this issue, since it includes all papacies. We have explored an alternative strategy in which, for years with multiple popes, we assign the pope that was first elected during that year. We obtain quantitatively the same results. There are also 2 years where the see was vacant (1315 and 1416). These years are dropped from our main sample. Including them, however, and assigning them the measures of divisions of the elected pope during the conclave that took place in those years does not change the results.

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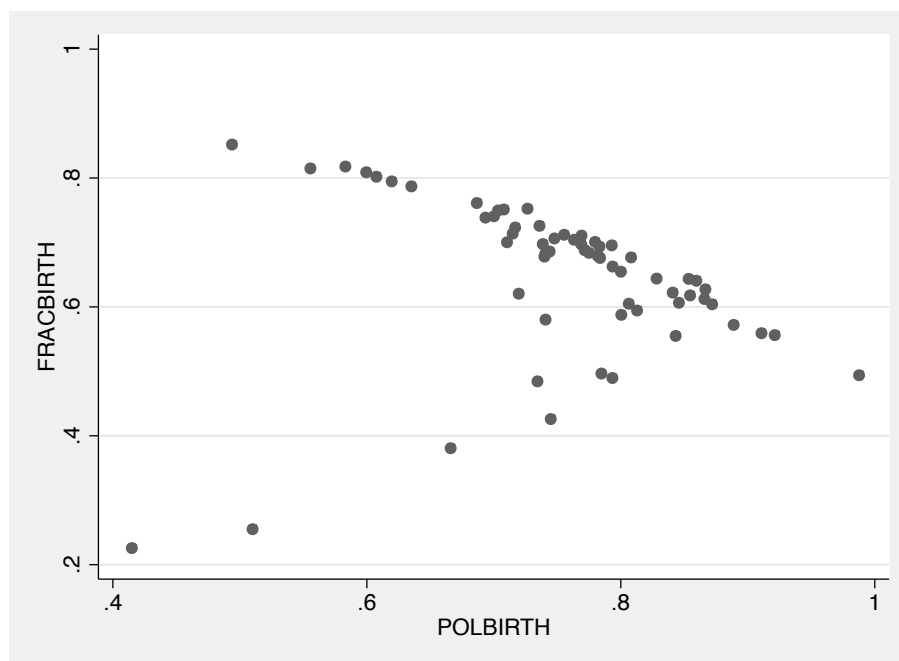
<sup>26</sup>For example, in August 18, 1503 pope Alexander VI died, and pope Pius III was elected in September 22. However, he died only 27 days after his election, and Julius II was elected in October 31.

**Figure B-1:** Polarization and fractionalization, 1295–1846



**Notes:** FRACBIRTH and POLBIRTH are computed as indicated in the text. The sample includes a total of 62 conclaves.

**Figure B-2:** Fractionalization versus polarization



**Notes:** FRACBIRTH and POLBIRTH are computed as indicated in the text. The sample includes a total of 62 conclaves.