The Professors Who Would Become Popes: Academic Human Capital and Elite Selection in Premodern Europe

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Abstract

Between 999 and 1800, 133 pontiffs ascended to the papal throne of the Catholic Church. Drawing on the RETE database of premodern European academia, we identify 22 popes or antipopes who held teaching positions before their election. The pattern is striking: all were elected before 1600. Biographical evidence further suggests that academic popes often came from more modest social backgrounds than the great Roman and Italian families that otherwise played a central role in papal selection, while simple measures of papal activity do not reveal systematic differences between former professors and other pontiffs. We interpret these facts through an economic lens. Premodern universities were not only producers of knowledge; they could also certify ability, provide access to elite career ladders, and allow acquired human capital to substitute partly for inherited social capital. The disappearance of academic popes is consistent with a decline in the ecclesiastical return to academic capital as universities became more secular, seminaries and curial careers provided alternative routes to advancement, and family and political networks became more important in elite recruitment.

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1 Introduction

The allocation of talented individuals across occupations is a central question in economics. Education can raise productivity by creating human capital, but it can also reveal or certify ability to outside institutions (Becker 1964; Arrow 1973; Spence 1973). Which of these functions matters depends on the rewards attached to alternative careers and on the institutions that govern access to positions of influence. This is particularly important in historical settings, where universities trained a small upper tail of the population and where the same individuals could move between teaching, administration, law, diplomacy, and the Church.

Economic history has increasingly emphasized the role of universities and upper-tail knowledge in long-run development. Medieval universities supplied legal and administrative skills that could facilitate economic activity (Cantoni and Yuchtman 2014), while the integration of the academic market has been linked to advances in knowledge (de la Croix et al. 2024). Yet universities also performed a less studied function: they were part of the recruitment system for political and ecclesiastical elites. A professorship could create reputation, contacts, and a public record of competence that extended well beyond the university itself.

The papacy provides an unusual setting in which to examine this role. It was the highest office of the Catholic Church and, unlike hereditary rulership, succession was not formally transmitted from father to son; candidates could come from different families and regions. At the same time, papal selection was deeply embedded in networks of cardinals, princely courts, religious orders, and Roman aristocratic families. The resulting variation makes it possible to ask a simple question with broader economic implications: to what extent could academic human capital serve as a route into the governing elite, and why did that route disappear?

We approach this question using the *Repertorium Eruditorum Totius Europae* (RETE, https://rete.uclouvain.be), a database constructed institution by institution to identify professors and scholars active in European universities and academies from the year 999 to the eve of the Industrial Revolution. Among the popes and antipopes considered over this period,[1] we identify 22 who held teaching positions before their election. The most striking feature of the data is chronological: all academic pontiffs were elected before 1600.

Three additional facts help interpret this break. First, the biographies of academic popes repeatedly reveal modest or intermediate social origins. Academic achievement did not eliminate the importance of religious orders or political connections, but it appears to have offered some men a route toward high ecclesiastical office despite the absence of membership in the most powerful families. Second, the comparison with the cardinals who elected them shows that this was not a reflection of the composition of the College: before 1600 the conclaves elected cardinals who had taught, and cardinals of non-noble birth, in a larger proportion than their share among the electors, whereas after 1600 none of the cardinals who had taught was elected. Third, once elected, former professors do not appear systematically different from other popes in the available quantitative proxies for papal activity: the number of bulls issued, cardinals created, saints

1. Antipopes are those who claimed the papal office in opposition to the pontiff recognized as legitimate by the Church, mostly during schisms. The 133 pontiffs elected between 999 and 1800 include 23 antipopes.

canonized, or the length of the biographical entry in the *Enciclopedia dei Papi*. The evidence therefore points more strongly toward a role for academia in selection into the elite than toward a measurable effect on performance once the highest office had been reached.

These observations connect the history of universities to several familiar economic mechanisms. Education may function as an investment in productive skills, as a signal of ability, or as both. Career ladders can make an early occupation valuable because it creates access to later positions. Family background and inherited connections can either complement or substitute for acquired human capital. Institutions determine which characteristics are rewarded in elite selection (Besley 2005); dynastic persistence can in turn make access increasingly dependent on family networks (Dal Bó, Dal Bó, and Snyder 2009). Finally, the relative rewards offered by different occupations influence where talented individuals choose to work and therefore how talent is allocated across society (Baumol 1990; Murphy, Shleifer, and Vishny 1991).

The central contribution of the paper is to document a transformation in the institutional mechanisms through which academic capital could be converted into elite positions. For five centuries, a documented teaching position was one of the routes by which men without inherited status reached the highest office of the Church. After 1600 this route closed at two levels: academic careers became rarer among the candidates, and those who still had them no longer enjoyed an advantage in the conclave. We do not attempt to identify causal effects from a sample of only 22 academic popes. The contribution is instead descriptive and interpretative. The long historical horizon, the bottom-up construction of the academic data, and the unusually well-documented careers of the individuals involved make it possible to use the papacy as a case study of the changing economic role of academic human capital. The disappearance of professor-popes after the early 17th century is interpreted not as a decline in the education of Church leaders, but as a change in the institutions through which knowledge was converted into elite status.

The paper proceeds as follows. Section 2 presents the data and the historiography: the identification of the academic popes in RETE and the long relationship between universities and the Church. Section 3 presents the empirical evidence: the available measures of papal activity, the academic and disciplinary profiles of the future popes, their social origins, and the disappearance of academic popes after 1600, together with the three developments that may account for it. Section 4 develops the economic interpretation around three propositions: academic positions as credentials and career ladders, the balance between acquired and inherited capital in elite selection, and the closing of the academic route. Section 5 concludes. The online appendix reports additional estimates on the popes (Appendix A), the data and further estimates on the cardinal electors (Appendix B), and the coding of the family origin of each pontiff (Appendix C).

2 Data and Historiography

2.1 Data and identification of academic popes

This study draws upon a large prosopographical database compiled within the Upper Tail Human Capital project, which records professors and scholars active in European universities and academies from around the year 1000 to the eve of the Industrial Revolution. The RETE (*Reper-*

torium Eruditorum Totius Europae) database makes it possible to identify scholars who taught in recognized centers of higher learning and to reconstruct their careers through extensive biographical documentation.[2]

A central methodological feature of RETE is its bottom-up construction. Rather than starting from a predefined list of prominent scholars, the database is built institution by institution, drawing on university- and academy-specific sources to reconstruct teaching staffs as systematically as possible. The identification of popes with prior teaching experience thus emerges from a broader mapping of the academic world rather than from a targeted search for well-known figures, thereby reducing selection bias and strengthening the historical interpretation of our findings.

It is important to specify that in some cases the sources do not allow us to know the teaching institution with certainty. In these cases, scholars are referred to as *Weak Links*, to highlight the fact that their connection to the university is uncertain or not direct. An example related to popes is that of Pius V, Michele Ghislieri.

The *Catholic Encyclopedia*, Herbermann (1913) lists him as a professor for 17 years without specifying the institution, and the *Enciclopedia dei Papi (The Treccani Enciclopedia dei Papi)* (Istituto dell'Enciclopedia Italiana 2000) also confirms that Pope Pius V was active in teaching. He certainly taught at several *studia* of the Dominican order present in the region,[3] including that of St. Thomas in Pavia (Catena 1587).[4]

The close connection between the convent of St. Thomas and the city's university has led us to attribute his teaching to this institution, but since we did not find it in official university documents (such as the *Rotuli* (rolls), or the Diplomatic Codex), we have preferred to indicate it with a less strong tie.

In compiling the list of universities to be considered, we relied on the foundational work for the history of universities by Frijhoff (1996) and Rashdall (1895). However, we also found it useful to include some of the more important monasteries founded during the early Middle Ages, and the choice was determined by the number of scholars we were able to identify.[5] In many respects, the

2. RETE currently contains more than 90,000 individuals and is built mainly from secondary sources: printed lists of professors, university histories and biographical dictionaries, coded with common rules across institutions (de la Croix et al. 2024). This gives broad and comparable coverage over space and time, at the cost of measurement error in individual records, such as uncertain dates or affiliations. We address this in two ways. First, every record is flagged when the link to the institution is weak or the date approximate; second, the 22 academic popes were checked one by one against the historical literature (Table 1), and the main results are robust to excluding uncertain cases (Appendix Table A2). Further documentation on the database is available at https://rete.uclouvain.be.

3. In this regard, Von Ranke Von Ranke (1866) explains: "When he taught, he did so with precision and benevolence; [...]."

4. The Dominican convent of St. Thomas was chosen as the *studium generale* by Duke Galeazzo II Visconti and recognized by a Decree of Foundation by Emperor Charles IV in 1361. This decree stated that the *studium* and those attached to it should enjoy "forever every privilege, freedom, immunity, indult and grace with which the *Studia* of Paris, Bologna, Oxford, Montpellier or any other general *studium* are recognized as endowed" (Fugazza 2012). The convent of St. Thomas granted the University of Pavia the main chapel in 1392. (MS Bib. Univ. di Pavia ´´Annali della Chiesa di San Tommaso´´ by Father Rilucenti cit. in Diplomatic Codex). The *Facultas* of St. Thomas where theology was taught granted degrees and licenses (Panzarasa 1989). As in most Italian universities of this period, theology lacked an autonomous faculty within the university proper and was instead taught within the *studia* of religious orders such as this one (see Section 3.2).

5. We do not treat 'university', the *studium* of a religious order, and cathedral school as equivalent institutional settings, even though all three could function as sites of teaching (Verger 1999). Where the sources allow, we distinguish teaching that took place within a university faculty from teaching confined to the *studium* of a religious

monasteries can be seen as embryonic forms of what later became universities (de la Croix and Vitale 2022). We extend our teaching criterion, on the same grounds, to cathedral schools and to pre-institutional legal instruction for the earliest period considered here. Before the emergence of formally chartered universities in the late 12th and 13th centuries, cathedral schools such as Reims functioned as the principal centers of advanced instruction in Europe, and early legal teaching at Bologna similarly predates the city's formal recognition as a *studium generale*. We do not claim institutional continuity between these earlier centers and the universities that followed; we include them because they performed, for their time, the same function that universities performed for popes elected after 1150, namely providing a documented, public site of advanced teaching prior to ecclesiastical promotion. Restricting the sample to chartered universities would tie the sample's starting point to an accident of institutional history (the date at which the label 'university' was granted) rather than to the criterion this paper is interested in: documented teaching prior to a future pope's elevation. Lastly, we decided to exclude the scientific academies in the database because numerous prelates were members of them, and their admission almost always had an honorary value. Our variable records teaching: a documented teaching position held before the election. It does not record education, and many pontiffs who never taught had studied at a university; nor does it measure the reputation that teaching and writing could bring, which it captures only indirectly.

The database encompasses a wide disciplinary breadth, ranging from theology to mathematics. This range illustrates both the disciplinary scope of medieval and early modern universities and the degree to which clerics contributed to intellectual life in Europe. Starting from this corpus, we identified the scholars who subsequently became popes: twenty-two individuals held teaching positions before their election. For each of them we reconstructed family background, networks of patronage, political and religious affiliations and academic trajectory, and situated the career in the institutional environment of the time, taking into account the effects of the Renaissance, the Protestant Reformation and the Catholic Counter-Reformation on university structures and educational practices.[6] We also examine whether academic experience left any measurable trace on the exercise of papal authority, using the number of bulls issued, cardinals created and canonizations performed as indicators of measurable papal activity (Section 3.1).

2.2 Historiographical context: the Church and universities

Although the origin of universities cannot definitively be traced to the religiously oriented schools that developed within monasteries and cathedral schools, it is undeniable that the Church played a significant role in their development. The debate over the genesis of universities was heated among historians in the late 18th century, leading to the emergence of two schools of thought: one considering universities as secular and innovative institutions, and the other viewing them as

order, and we distinguish secular clergy, who could hold university chairs like any other master, from regular clergy, whose teaching activity was typically internal to their order and did not always carry the same public recognition as a university appointment (Mulchahey 1998).

6. For the biographical reconstruction, we relied in particular on the works of Leopold von Ranke *History of the Popes*; Ludwig von Pastor, and the *Enciclopedia dei Papi* published by Treccani, as well as on numerous monographs devoted to individual figures.

		Academic career					
Name	Papal Name	Institution	Type	Begin	End	Field	Elect
Gerbert d'Aurillac	Silvester II	Reims[a]	C	972	997	Theo, Math	999
Eudes de Châtillon	Urbanus II	Reims[b]	C		1070	Theology ?	1088
Rolando Bandinelli	Alexander III	Bologna[c]	U		1150	Theology	1159
Alberto Di Morra	Gregorius VIII	Bologna[c]	U	c. 1150		Canon Law	1187
Pierre de Tarentaise	Innocentius V	Paris[e]	U	1259		Theology	1276
Pedro Julião Rebelo	Ioannes XXI	Siena[d]	U	1245	1250	Medicine	1276
Bertrand de Got	Clemens V	Orléans	U	1280		Civil law	1305
Jaques Duèze	Joannes XXII	Orléans/Toulouse	U	1285	1297	Civil Law	1316
Jacques Fournier	Benedictus XII	Paris[e]	U	1317	1317	Theology	1334
Pierre Roger	Clemens VI	Paris[e]	U	1320	1321	Theology	1342
Etienne Aubert	Innocentius VI	Toulouse[f]	U	1321	1340	Civil Law	1352
Guillaume de Grimoard	Urbanus V	Paris[g]/Montp./Avignon	U	1342	1362	Canon Law	1362
Bartolomeo Prignano	Urbanus VI	Naples[g]	U	c. 1360		Canon Law	1378
Pedro Martinez Luna	Benedictus XIII	Montpellier[h]	U	1375	1375	Canon Law	1394
Cosimo de' Migliorati	Innocentius VII	Perugia/Padua[i]	U	c. 1380		Both Law	1404
Pietro Filargo	Alexander V	Paris[g]/Pavia	U	1370	1386	Theology	1409
Alfonso de Borgia	Callixtus III	Lleida[j]	U	1400	1416	Civil Law	1455
Francesco della Rovere	Sixtus IV	Bologna[g]/Padua/etc.	U	c. 1450		Theology	1471
Adrianus Florentii	Adrianus VI	Louvain[k]	U	1478	1507	Theology	1522
Michele Ghislieri	Pius V	Pavia[i]	U	1528	1544	Theology	1566
Ugo Boncompagni	Gregorius XIII	Bologna[c]	U	1530	1540	Civil Law	1572
Felice Peretti	Sixtus V	Rome[l]/Siena	U	1545	1564	Theology	1585

[a] See Williams (1954).
[b] See Istituto dell'Enciclopedia Italiana (2000).
[c] See Mazzetti (1847).
[d] See Moriani (1873).
[e] See Genet (2019).
[f] See Deloume (1890).
[g] See Origlia (1754).
[h] See Faucillon (1862).
[i] See Herbermann (1913).
[j] See Esteve Perendreu (1997).
[k] See Lamberts and Roegiers (1990).
[l] See Spanò (1935).
Type: U = university; C = cathedral.
[m] Two further possible candidates are Enea Silvio Piccolomini (Pius II, elected 1458), who may have taught humanities at Siena in 1429, and Alessandro Ludovisi (Gregory XV, elected 1621), who may have taught civil law at Bologna around 1570. Modern historiography, however, casts doubt on both affiliations. Similarly, Tommaso Parentucelli (Nicholas V, elected 1447) is recorded as having taught at Bologna in 1420–1426 (Mazzetti 1847), but no rotulus survives for these years (Dallari 1888–1924), and modern biographies mention only his degree in theology (1422) and his years as a private tutor in Florence. We therefore treat this record as a weak link and do not include him in the table.

Table 1: Pontiffs who taught at universities and cathedral schools: teaching periods, fields, and election

the result of a transformation process from Church schools (Rosso 2021). However, the evolution of research on the history of European universities has helped moderate this extreme polarization and recognize both secular and Church schools as embryonic forms of universities.[7]

Even after universities were officially established, the contribution of the Church in terms of professors, funding, and organization was very significant, and popes themselves showed interest in these new institutions. This influence, however, was neither uniform nor unchallenged across time and space. Many Italian universities of the 13th to 17th centuries (Bologna and Padua among them) were governed primarily by the *universitas* of students or by communal and state authorities rather than by ecclesiastical bodies (Grendler 2002). Even in France, where the chancellor of a cathedral or collegiate church formally retained oversight of the *licentia docendi*, this prerogative did not translate into effective ecclesiastical control over teaching or governance (Verger 1986). In fact, the rise of universities in the 12th century coincided with the assertion of the papacy's international power and the centralization of ecclesiastical governance at the Roman Court (Post 2017). The beginning of the papacy's interest in these new institutions was particularly linked to the intervention of Pope Alexander III (1159–1181), who countered simoniacal practices in the scholastic sphere (Kouamé 2017), decreed the presence of masters in cathedrals and collegiate churches, and imposed the free concession of the *licentia docendi* (teaching license) for those who were sufficiently prepared.[8] His intervention marked the first noteworthy rapprochement between the two institutions (Post 1929).

A quick glance at the history of universities in Europe is sufficient to see that various popes played a role in the development of universities, with different forms of involvement. For example, Innocent III made his official collection of laws (*Compilatio tertia*) a subject of teaching (Arnaldi 1990), Honorius III intervened to defend the *libertas scholarium*, and many popes promulgated papal bulls to establish or confirm the privileges of universities (such as Martin V, Boniface VIII, Eugene IV, Paul III, etc.). Alongside this, censorship is another area in which the strong link between universities and the papacy can be observed. The promulgation of the Index by Paul IV in 1559 had significant consequences, particularly within academic circles. Numerous professors and students were expelled from lecture halls, while others faced even harsher penalties (Blasutto and De la Croix 2023).[9] In addition to regulating the internal organization of universities and teaching, the Church sought from the beginning to help students by establishing scholarships or creating colleges. Among the earliest colleges is that of Paris, founded in 1257 by Robert de Sorbon, the chaplain of Louis IX, who later would give his name to the entire Paris theological faculty, the Sorbonne (Moulin 2010).[10] A college that was directly the fruit of a pope's decision is the Ghislieri of Pavia, created in 1567 by Pope Pius V to assist less fortunate students and

7. See, for example, the timeline in de la Croix and Vitale (2022).

8. According to Alexander III, "Scientia donum Dei est, unde vendi non potest" (Knowledge is a gift from God; therefore, it cannot be sold).

9. Numerous scholars were silenced by the Inquisition, and some of the most renowned examples include figures whose works or persons were targeted by the Church, such as Erasmus of Rotterdam, Galileo Galilei, and Giordano Bruno. However, there were also lesser-known professors who faced similar consequences, such as Claudio Betti from the University of Bologna, Aonio Paleario from the University of Pavia, and Matteo Gribaldi di Mofa da Chieri from the University of Padua (Prosperi, Lavenia, and Tedeschi 2010).

10. By 1350, in Paris, there were 19 such colleges, with 375 free places.

ensure that they would receive a good education.

Clerics were an educated part of society at the time, and had easier access to scholastic institutions. During the Middle Ages, they could train in different types of schools: parochial schools, where priests gave lessons in reading, writing, singing, and the knowledge of sacred texts, and the schools of cathedrals and monasteries, where it was possible to learn theology and law. Biblical theological knowledge could also be acquired in the *studia* of mendicant order convents, already active in the 13th century (Rosso 2018; Barrow 2015). These schools fostered an early mobility of students and teachers across Europe: in the 12th century, for example, many Roman students went to French abbeys to further their studies and later pursue their careers in the Curia (Classen 1983). For the clergy, the end of the 12th century brought further change. The Third (1179) and Fourth (1215) Lateran Councils established new rules on the education of clergy, and from this time on, the most promising clerics with the social and financial means began to attend universities in Paris and Bologna and gradually all those created across Europe (Rosso 2021). This change coincided with the development within the Church of new and increasingly complex entities, which needed figures trained in law and theology, able to perform bureaucratic and administrative functions, as well as to spread a certain ideology of papal power (Internullo 2017). Having acquired the license to teach, many of them remained in university classrooms as teachers (*magistri*).

However, their teaching careers did not last very long. At the University of Pavia, for which the knowledge of prelate professors is fairly precise, their careers lasted four or five years on average, and the same is true for the theology faculty at the University of Coimbra. In many cases, teaching was a compulsory step before an ecclesiastical career, or before becoming a professor at colleges run by the Church and religious orders.[11]

3 Empirical evidence

3.1 Academic experience and the exercise of papal authority

Before turning to the empirical exercise, it is worth clarifying its purpose. We use four measures of papal activity: the number of bulls issued, the number of cardinals created, the number of canonizations, and the length of the pope's entry in the Treccani *Enciclopedia dei Papi*. Our aim is not to rank popes by administrative quality, nor to treat these measures as a comprehensive assessment of papal governance. Rather, the exercise tests whether prior academic experience left any measurable trace on papal conduct once the highest office had been reached. As we discuss more fully in Section 4.1, a null result on this dimension is informative in itself: it is consistent with an interpretation in which university teaching mattered primarily for "selection" into the papacy, rather than for "performance" conditional on being selected. The four measures are therefore best read as complementary proxies for distinct aspects of activity, rather than as a single index of merit: the number of bulls, cardinals created, and canonizations approximate direct

11. It was not until the 14th century that academic studies began to become a significant requirement to pursue an ecclesiastical career, which led to an increase in the number of monks and clerics attending higher studies and, consequently, of clergymen with an academic degree involved in governmental duties.

administrative output, while the length of the Treccani *Enciclopedia dei Papi* entry captures a pope's subsequent historiographical prominence rather than activity during the pontificate itself, and is included as a complementary, not equivalent, indicator. To this end, we analyzed whether experience at university, either as simple readers or as professors with longer-term appointments, distinguished popes who had an academic background from those who did not. To conduct this analysis, we included all the popes and antipopes appointed over the eight centuries under study, from the Middle Ages to the Industrial Revolution.

As heads of the Catholic Church and sovereigns of the Papal States, popes exercised extensive legislative and normative power, utilizing various types of official documents. Although the use of papal documents as tools of governance dates back to the early days of the Church, the main types of documents, such as bulls and decrees, began to be structured and formalized between the 8th and 9th centuries. Among these, papal bulls, encyclicals, apostolic constitutions, *motu proprii*, apostolic letters, briefs, and decrees represented the means through which the pope fulfilled his role as spiritual leader, legislator, and administrator of the Catholic Church.[12]

Referring to the *Magnum Bullarium Romanum*—a collection initiated by Laerzio Cherubini in 1586 with the aim of collecting all the official documents issued by popes, and used here in the Luxembourg edition, which extends to Benedict XIV (Cherubini and Cherubini 1742)—we used the number of papal bulls issued by each pope as an indicator of their activity. For the pontificates after 1758, which this collection does not cover, we supplemented the count with the *Bullarii Romani Continuatio*, edited by Andrea Barberi and his successors (Barberi 1835–57).[13]

Although the collection is not complete, we chose to rely on this source due to its accessibility and its ability to provide a good representation of papal activity over the centuries. In the regressions below, we control for the length of each pontificate, since a longer reign gave more time to issue bulls (see Table 2).

In addition to the number of bulls issued, we also considered the number of canonizations. This ritual, which involves the recognition of the sanctity of a deceased individual, could only be performed by bishops until the 11th century. However, towards the end of that century, popes began to assert their exclusive right to authorize the veneration of saints, in contrast to bishops' traditional rights. Initially, the proclamation of sainthood occurred through *vox populi*, with bishops responsible for the investigation and proclamation of saints. However, with the election of Urban II, a process of centralization began, which granted the pope the exclusive right to decide on canonizations. This act, which often bore political connotations, allowed popes to consolidate their power, strengthening their authority through popular support and intervention in political contexts (Vauchez 2005).[14]

12. The bull is one of the oldest official documents of the Catholic Church, used since the 8th century. The use of a lead seal (the bulla) to authenticate documents dates back to the pontificate of Adrian I (772–795). Starting in the Middle Ages, bulls became the primary instrument for solemn decisions and for expressing papal authority.

13. For Pius VI, the volumes of the *Continuatio* available to us cover years IV–XXIV of the pontificate; volume V, with years I–III, could not be located, so his count is incomplete. For Clement XIV we relied on a distinct edition with the same title printed in Prato (*Bullarii Romani continuatio, Tomus Quintus, Clementis XIV pontificatum continens* 1845), which should not be confused with the Roman series. The number of cardinals created was taken from Ritzler and Sefrin (1958) and cross-checked against Miranda (1998) for the 18th-century consistories.

14. Saint Thomas Becket, Archbishop of Canterbury, was murdered in 1170 following a conflict with King Henry

Table 2: Prior teaching experience and measurable papal activity

	Dependent variable: asinh of the outcome							
	Bulls		Cardinals created		Canonizations		Treccani entry	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Prior teaching experience	−0.20	0.50	−0.26	−0.14	−0.10	0.24	0.03	0.04
	(0.36)	(0.33)	(0.20)	(0.24)	(0.18)	(0.18)	(0.13)	(0.15)
Length of pontificate (asinh)	0.67***	0.76***	0.81***	0.85***	0.27***	0.29***	0.21***	0.23***
	(0.09)	(0.08)	(0.05)	(0.05)	(0.04)	(0.04)	(0.04)	(0.04)
Year of election (asinh)	4.09***		1.05**		0.47		2.78***	
	(0.89)		(0.44)		(0.50)		(0.29)	
Constant	−32.06***	−0.76**	−8.96**	−1.02***	−4.26	−0.62***	−11.63***	9.62***
	(6.96)	(0.37)	(3.53)	(0.31)	(3.91)	(0.18)	(2.25)	(0.19)
Period dummies	No	Yes	No	Yes	No	Yes	No	Yes
R^2	0.36	0.58	0.63	0.68	0.21	0.36	0.53	0.55
Observations	124	124	127	127	132	132	130	130

Notes: Ordinary least squares; heteroskedasticity-robust standard errors in parentheses. Dependent variables: number of bulls in the *Bullarium*, number of cardinals created, number of canonizations, number of characters of the entry in the *Enciclopedia dei Papi*, all transformed with the inverse hyperbolic sine ($\text{asinh}(x) = \ln(x + \sqrt{x^2+1})$), which approximates $\ln(2x)$ for large values while keeping the zeros, so that coefficients on the dummy variable are approximately proportional differences. Prior teaching experience equals 1 for the 22 popes and antipopes who held a teaching position before their election. Odd columns: year of election as a time trend. Even columns: period dummies (999–1123, 1124–1304, 1305–1377, 1378–1449, 1450–1599, 1600–1800; reference 999–1123) instead of the trend; with period dummies the constant is the reference-period mean. For the Treccani entry, the three antipopes without an entry in the *Enciclopedia dei Papi* are excluded. Poisson estimates are in Appendix Table A1. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 2 summarizes our findings on whether prior experience in academia is associated with a pope's measurable activity. Each pair of columns corresponds to one of our four measures: the number of bulls issued, the number of cardinals created, the number of saints canonized, and the length of the Treccani entry. All four are transformed with the inverse hyperbolic sine, which behaves like a logarithm but keeps the popes who score zero on some of them, so that the coefficients can be read approximately as proportional differences. All columns control for the length of the pontificate, since longer pontificates provided more time to issue bulls, create cardinals, canonize saints, and accumulate the historiographical record reflected in the Treccani entry. Odd-numbered columns add the year of election as a linear time trend; even-numbered columns replace it with period dummies. Having been a professor is not significantly associated with any of the four measures in any specification. The estimates are imprecise, however, and cannot rule out sizeable differences in either direction. We therefore read them as showing no measurable difference between academic and non-academic popes in these four dimensions, not as evidence that they behaved alike. Because the first three measures are counts, we also check the robustness of these results with Poisson models on the outcomes in levels, which give the same picture (Appendix Table A1).

3.2 Academic backgrounds and disciplinary profiles

The analysis of the disciplines taught by future popes highlights a particular configuration of knowledge that cannot be understood without taking into account the specific character of theological teaching in medieval and early modern Italy. Between the 16th and 17th centuries, theology, while remaining central to ecclesiastical identity, occupied a structurally ambiguous position within many Italian universities: often lacking an autonomous faculty, it was largely taught in the *studia* of religious orders, in colleges, and, after the Council of Trent, in seminaries (Broggio 2013). That configuration, however, was not uniform across the peninsula. At Bologna and Padua in particular, recent scholarship has shown that theology occupied an increasingly prominent place in the university over the early modern period, rather than a marginal one: Lines (2023) documents the growing weight of theological teaching at Bologna between 1400 and 1750, even as legal instruction declined, while Gaetano (2017) shows that Thomist theology held an official chair (*via S. Thomae*) at Padua from the mid-15th to the mid-18th century. More generally, early modern universities tended to privilege disciplines endowed with clear administrative and juridical utility, whereas theology, although central at the doctrinal level, often had a weaker place in the universities (Grendler 2002, 2009; Ridder-Symoens 1996). Similar dynamics of disciplinary and institutional differentiation can also be observed in other European universities, such as those of Paris or the Iberian world, where theological teaching retained a more celtral place (Verger 1986, 1999). The data presented here reflect this configuration. Popes who

II over the rights of the Church, and was canonized just three years later, in 1173. His swift canonization helped solidify his position as a martyr for the independence of the Church, promoting the idea of papal supremacy over royal authority (Barlow 1986). Canonizations often reflected the strategic themes that popes sought to promote, such as ecclesiastical reform, the defense of orthodoxy, and evangelistic missions: Saint Dominic of Guzmán, the founder of the Order of Preachers, canonized in 1234 by Gregory IX, represented the Church's fight against heresy, particularly against the Cathars.

taught theology prior to their election almost invariably belonged to a religious order (Dominican, Franciscan, Benedictine, or Cistercian), confirming that theological teaching functioned above all as a form of symbolic capital internal to the orders, rather than as a fully recognized university credential.

If the teaching of theology thus appears to be closely connected to membership in a religious order, a different logic governs the presence of canon law among the disciplines taught by future popes. In these cases, university teaching constituted a broader resource, not confined to the internal circuits of the orders and potentially accessible also to secular clerics. Law, in particular, occupied a central position within the Italian university system and was directly relevant to the exercise of curial and administrative functions. Legal teaching therefore offered a form of academic capital endowed with public value, capable of being converted into curial advancement and, in some cases, into ascent to the papal throne. Such a configuration accounts for why having taught at a university is more frequently found among popes of modest social origins.

These elements suggest that such experience should not be read simply as an indicator of a high level of intellectual formation, but as the reflection of a specific institutional configuration of knowledge and ecclesiastical careers, tied to discipline, religious-order membership, and social origin. As the following sections show, this configuration changed markedly after the early 17th century, when university teaching ceased to represent a strategic stage in careers destined for the highest levels of the Church.

3.3 Social origins and career trajectories

In his *History of the Popes* the historian Leopold von Ranke (Von Ranke 1866), writes:

> "Hereditary principalities or aristocracies transmit their power from one generation to the next throughout the world, but the sovereignty of the Church has this peculiarity: its throne can be reached by men from the lowest strata of society."

This observation, at the beginning of Ranke's analysis of the pontificate of Sixtus V, is not limited exclusively to the latter. The examination of professor-popes reveals that this was a recurrent phenomenon. To move beyond individual biographies, we coded the family origin of all 133 popes and antipopes elected between 999 and 1800 on a three-level scale: non-noble families (peasants, artisans, merchants, notaries, physicians and jurists of non-aristocratic rank), the lesser nobility and urban patriciates, and the high nobility, including sovereign and princely houses, a distinction common in the historiography of the Italian and European nobilities (Donati 1988; Dewald 1996; Scott 1995). Family origin can be established for 109 pontiffs, including 19 of the 22 academic popes.

Table 3 compares the family origin of academic popes with that of the other pontiffs. More than half of the academic popes of known origin (10 of 19, or 53%) came from non-noble families, against 22% of the other pontiffs. Only one, the antipope Benedict XIII, belonged to the high nobility, against 39% of the others.

Table 4 checks that this difference does not simply reflect the concentration of academic popes in some periods. Comparing pontiffs elected in the same period, a pontiff from a non-noble

family was about 20 percentage points more likely to have taught before his election than the other pontiffs (column 2), and one from the high nobility about 16 points less likely (column 4). In column 5 both categories are compared with the lesser nobility. The coefficients are smaller and, with only 22 academic popes, significant only at the 10% level, but their sign is unchanged. The results hold under narrower definitions of an academic pope: excluding those who taught only in cathedral schools, excluding those whose teaching is uncertainly documented, or applying both restrictions (Appendix Table A2).

Table 3: Family origin of academic and non-academic pontiffs, 999–1800

	Academic		Non-academic		All	
	n	%	*n*	%	*n*	%
Non-noble family	10	53	20	22	30	28
Lesser nobility and patriciate	8	42	35	39	43	39
High nobility	1	5	35	39	36	33
Known origin	19	100	90	100	109	100
Unknown origin	3		21		24	
All pontiffs	22		111		133	

Notes: Popes and antipopes elected between 999 and 1800. Family origin coded from the *Enciclopedia dei Papi* on a three-level scale; percentages are computed on pontiffs of known origin.

Table 4: Family origin and prior teaching experience: linear probability models

	Dependent variable: prior teaching experience				
	(1)	(2)	(3)	(4)	(5)
Non-noble family	0.219**	0.198**			0.153*
	(0.094)	(0.079)			(0.087)
High nobility			−0.219***	−0.164***	−0.102*
			(0.058)	(0.056)	(0.061)
Period dummies	No	Yes	No	Yes	Yes
R^2	0.07	0.37	0.07	0.35	0.38
Observations	109	109	109	109	109

Notes: Linear probability models; popes and antipopes elected between 999 and 1800 of known family origin (Table 3). The dependent variable equals 1 for the pontiffs who held a teaching position before their election. In columns (1)–(4) the comparison group is all other pontiffs of known origin; in column (5) it is lesser nobility and patriciate. Period dummies: 999–1123, 1124–1304, 1305–1377, 1378–1449, 1450–1599, 1600–1800. Heteroskedasticity-robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 5 reports the social composition of the papacy by period, together with the number of antipopes and of academic pontiffs, so that the denominators are explicit. Two features stand out. First, no pontiff of the Avignon period belonged to the high nobility: five of the seven of known origin came from the lesser nobility of southern France. Second, the change after 1600 is not primarily a rise of the high nobility, whose share among pontiffs of known origin moves from

Table 5: Academic pontiffs and the social composition of the papacy, by period

	Number of pontiffs				Family origin (% of known)		
Period	All	Antipopes	Academic	Known origin	Non-noble	Lesser nob.	High nob.
999–1123	30	8	2	20	15	35	50
1124–1304	39	7	4	28	32	36	32
1305–1377	8	1	6	7	29	71	0
1378–1449	14	7	4	12	25	25	50
1450–1599	23	0	6	23	43	35	22
1600–1800	19	0	0	19	16	53	32
999–1800	133	23	22	109	28	39	33

Notes: Popes and antipopes, by date of election. "All" includes antipopes; "Academic" counts pontiffs who held a teaching position before their election (Table 1). Family origin coded from the *Enciclopedia dei Papi*; shares are computed on pontiffs of known origin.

22% in 1450–1599 to 32% in 1600–1800, but the near disappearance of pontiffs of non-noble birth, from 43 to 16%. The closing of the academic route thus coincides with the closing of the papacy to men of modest origin.

The same pattern appears when the popes are compared with the cardinals who elected them. The College was more aristocratic than the popes it chose. Had each conclave before 1600 picked one of the cardinals present at random, we would expect about 11 elected popes who had taught and 8 of non-noble birth; 17 and 20 were elected (Appendix Tables B2 and B3).

Table 6 compares, within each conclave, the cardinals who were elected with those who were not. Cardinals who had taught were somewhat more likely to be elected, but the difference is not significant and disappears once university studies and seniority are taken into account (column 3): what the conclaves rewarded was university training and a long career in the College rather than teaching as such. Non-noble origin, by contrast, almost triples the odds of election (odds ratio 2.7), and university studies multiply them by five. A linear probability model with conclave fixed effects gives the same picture (column 4). Further specifications are reported in Appendix B.

Family power nevertheless remained central within the Church, particularly in the early centuries, when Roman dynasties managed to maintain substantial control over papal elections. Until the electoral reforms of 1059, papal selection remained strongly, though not exclusively, influenced by Roman clergy and aristocratic factions. Even during the *saeculum obscurum*, these powerful Roman dynasties successfully imposed their candidates, often at the expense of individuals from other social classes or regions.[15]

The biographies that follow show three recurring patterns: modest origins offset by an academic credential (Sylvester II, Innocent V, Alexander V, Sixtus V); the teaching of law converted into curial and administrative careers (John XXII, Innocent VI, Gregory XIII); and careers within the great religious orders as a route to office (Innocent V, Pius V, Sixtus V). We return to the

15. The *saeculum obscurum* ("dark century", 904–1046) refers to a period of papal crisis, marked by corruption and by the strong influence of Roman aristocratic families over papal elections, further "darkened" by the scarcity of reliable sources. It ended with the intervention of Henry III (Von Ranke 1866).

Table 6: Which cardinal electors were elected?

	Dependent variable: elected pope			
	(1)	(2)	(3)	(4)
	Conditional logit			LPM
Taught (at any date)	0.41	0.33	−0.11	0.001
	(0.29)	(0.31)	(0.32)	(0.012)
Non-noble family		1.17***	0.98***	0.053***
		(0.29)	(0.30)	(0.019)
High nobility		−0.03	−0.40	−0.005
		(0.27)	(0.29)	(0.007)
Origin unknown		−1.65***	−0.92**	−0.042***
		(0.43)	(0.44)	(0.013)
University studies			1.65***	0.041***
			(0.34)	(0.007)
Years as cardinal (/10)			0.40***	0.013***
			(0.10)	(0.004)
Length of Miranda entry (log)			1.08***	0.036***
			(0.29)	(0.008)
Elections	93	93	93	93
Observations (elector × election)	2,888	2,888	2,888	2,888

Notes: One observation per cardinal present at an election, 1058–1800; elections in which the elected was not a cardinal present at the election are excluded. Columns (1)–(3): conditional (fixed-effects) logit, one group per election, so that each cardinal is compared only with the other cardinals present at the same conclave; coefficients are log odds ratios. Column (4): linear probability model with election fixed effects, standard errors clustered by cardinal. Reference category for family origin: lesser nobility and patriciate. Teaching: a teaching position at a university or school at any date; for cardinals later elected pope, the coding of Table 1. The length of the Miranda entry controls for the longer biographies of the cardinals who became pope. Data and further specifications in Appendix B (Tables B4 and B5). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

first two in Section 4. Figure 1 places the academic popes on a timeline across seven periods, corresponding to the main phases of ecclesiastical history.

With the advent of the new millennium, a significant change occurred: new centers of learning, such as cathedral schools, emerged, laying the foundations for the birth of universities. At the same time, the selection of popes ceased to be the exclusive prerogative of great Roman aristocratic families, occasionally shifting towards figures from the growing ecclesiastical and academic worlds. Although these two phenomena cannot be considered directly related, the new centers of learning and, later, the universities played a crucial role in shaping the ecclesiastical class, creating opportunities for social advancement even for those from more modest backgrounds.

This is the case of the first two popes encountered in this study, both born outside Italy: Gerbert of Aurillac, who became Pope Sylvester II in 999, and Eudes of Châtillon, known as Urban II.[16] Sylvester II came from a modest family in Aquitaine. In a letter to Bishop Wilderod (Letter 217, 69), he even explained that he was born in poverty.[17] Gerbert studied at the Monastery of Saint-Géraud and later accompanied Count Borrell to Catalonia, where he began his study of the *quadrivium* (astronomy, geometry, arithmetic, and music). He then returned to Reims, where he assumed the role of *scholasticus* (master) of the cathedral school; during his tenure, Reims became a key center for the teaching of theology.

Eudes de Châtillon, the future Urban II, was born in 1035 in Châtillon-sur-Marne to a family of modest knights, although it was long believed that he was of noble descent (O'Malley 2009). After beginning his ecclesiastical education in Reims, he continued his studies in Cluny, the heart of monastic reform. His election to the papacy in 1088 occurred during a period of intense tensions for the Church, marked by the Investiture Controversy with Emperor Henry IV and the presence of an antipope, Clement III. Supported by the reformist faction, Urban II represented continuity with the policies of Gregory VII, of whom he was a devoted disciple. His election was further supported by his connection to Cluny, a powerful ally of ecclesiastical reform throughout Europe.

The autonomy gained with the Gregorian Reform faced a setback during the period known as the "wandering papacy" (1124–1309), when the interference of Roman noble families and German emperors forced several popes to reside outside of Rome.[18] Four academic popes were elected in this phase, from different backgrounds. Alberto di Morra (Gregory VIII) was the son of Sartorius, of an important family of Benevento. The origins of Rolando of Siena (Alexander III) are uncertain: his attribution to the noble Bandinelli family is a late tradition. Of Innocent V and John XXI little is known, but it is highly likely that they did not belong to noble families.

These short pontificates, Innocent V, John XXI, and, later, Alexander V during the Western

16. Twelve of the 22 academic popes were not Italian (eleven if Pietro Filargis, Alexander V, born in Crete but closely tied to the Venetian world, is counted as part of the Italian sphere).

17. [...] Quod ita non esse, sacerdotalis dignitas, Gallia testis est, testes reges, et proceres. [...] Cur ita factum sit si forte requiras, nescire me fateor, fateor, inquam, me nescire, cur egenus, et exul, nec genere, nec divitiis adjutus, multis locupletibus et nobilitate parentum conspicuis praelatus sit, nisi quod tui est muneris, bone Jhesu, qui de stercore erigis pauperem ut sedeat cum principibus, et solium gloriae teneat ([...] That this is not so, witness the priestly dignity of France, the kings, the nobles [...] why a poor man and an exile, sustained neither by birth nor by wealth, was preferred to many who were rich and illustrious for the nobility of their kin, I confess I do not know, except that it is Your gift, good Jesus, who raise the poor from the dung to make him sit with princes and hold the throne of glory).

18. Some of the papal residences during this period included Viterbo, Orvieto, Anagni, and Perugia.

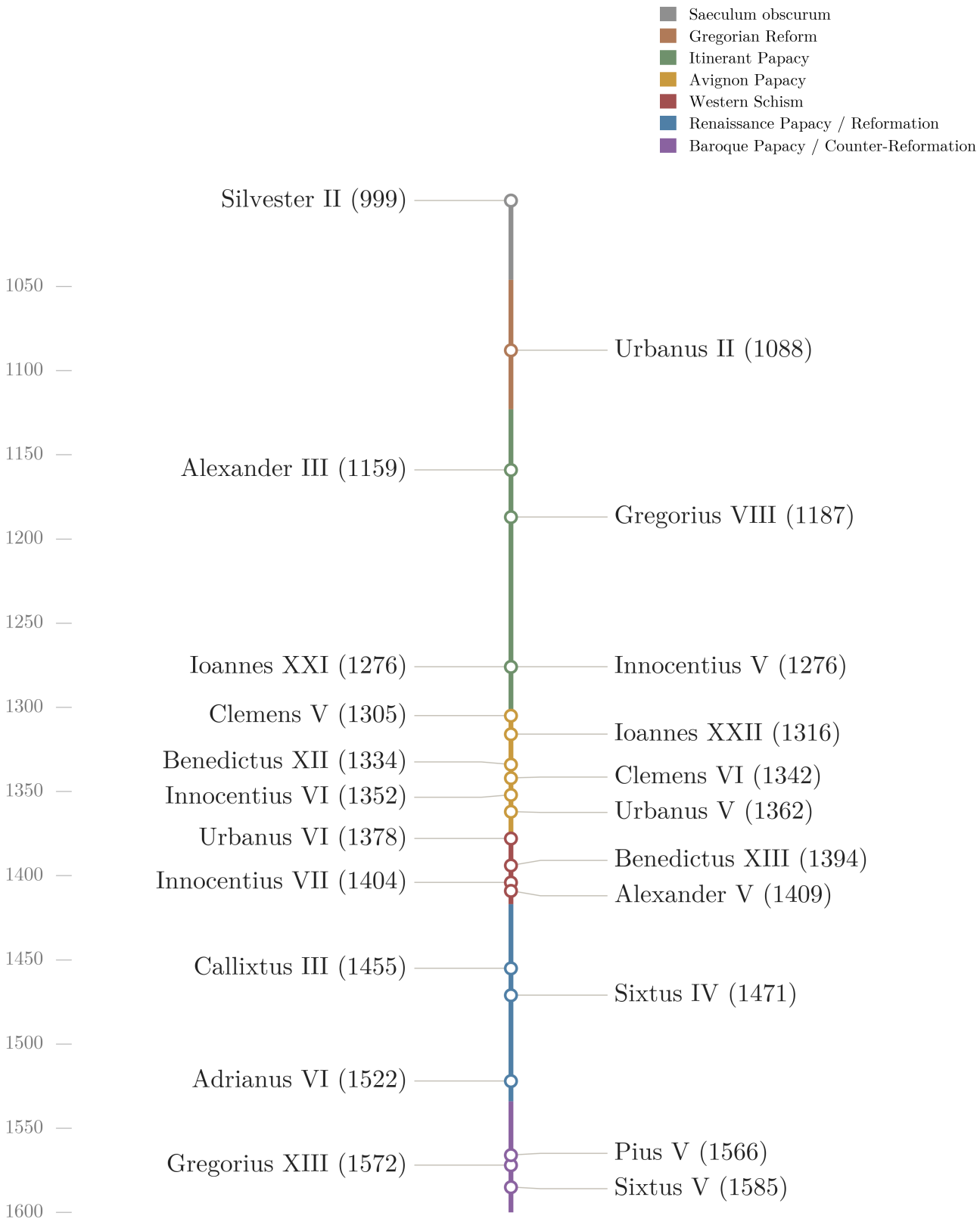


Figure 1: Chronological timeline of academic popes across historical eras (999–1600).

Schism, share a common pattern: modest or uncertain social origins offset by an academic credential. Innocent V (born Pierre de Tarentaise) owed his rise to the highest office in the Church to his academic achievements. After a period of teaching as a lector in one of the convents of his province, he was sent in 1255 to the *Studium generale* at the convent of Saint-Jacques in Paris, where he obtained the title of *magister* in theology.[19] He taught at the University of Paris between 1259 and 1264 and again between 1267 and 1269; Gregory X made him cardinal bishop of Ostia in 1273, and after the pope's death the cardinals elected him on the first ballot: a well-known figure, close to the late pope, but not directly aligned with either of the two dominant factions in the Sacred College.

The biography of John XXI remains uncertain until his election. For a long time, historiography identified him with Pedro Hispano, a professor of medicine at the University of Siena between 1245 and 1250. We adopt this assumption, although recent studies have questioned it (Meirinhos 2009; D'Ors 2003). According to some sources, he was the son of a physician and belonged to a noble family from Lisbon. During his stay in Siena, however, he faced significant financial difficulties: a notarial act found in the Monastery of Lecceto reveals that he lived in the city's poorest districts and was forced to sell his Bible, a valuable copy, for seven lire (Rozzi 1894; Nardi 1996).

Alexander V (Pietro Filargis) was born into a poor family from Neapolis, on the island of Crete. Orphaned at a very young age, he was entrusted to a Conventual Franciscan friar who recognized his intellectual talents and sent him to study first at Oxford and then in Paris, where he lectured on the *Sentences* and obtained the license to teach in 1381. His academic career continued at the University of Pavia, and for several decades he was one of the most influential figures in Lombardy's intellectual life. His encounter with Gian Galeazzo Visconti, who valued both his humanist learning and his diplomatic skills, proved decisive for his rise. He was elected at the Council of Pisa in 1409; the Church, however, considers him an antipope, as the Council lacked the authority to depose a legitimate pope who was still alive and to elect a new one.

During the Avignon Papacy, six popes with academic experience can be identified. Two of them, Étienne Aubert (Innocent VI) and Guillaume Grimoard (Urban V), came from wealthy families. The pontificate of Urban V was particularly notable for the emphasis placed on higher education: he reformed or issued new statutes for the universities of Orléans, Orvieto, Toulouse, and Paris, and founded universities in Kraków (1364), Orange (1365), and Vienna (1365), as well as several colleges in France. When criticized for financial extravagance in supporting young scholars who might never join the Church, he reportedly replied: "It will always be beneficial for anyone to have studied" (Istituto dell'Enciclopedia Italiana 2000). He also enhanced the library of the Papal Palace in Avignon, without neglecting university libraries.

After seven French popes, Gregory XI returned the papal seat to Rome. Upon his death in 1378, a highly contentious conclave elected Bartolomeo Prignano, Urban VI, who had taught at the University of Naples. His intellectual qualities were not a decisive factor in his selection, since

19. As a master, he collaborated with Albert the Great, Thomas Aquinas, Florent of Hesdin, and Bonhomme the Breton on the commission of five masters appointed by the General Chapter of Valenciennes (June 1259) to prepare the *ratio studiorum* of the Dominican Order.

he was considered a modest man, but demands for a Roman, or at least Italian, pope were strong. His legal training shaped his first decisions, among them granting Orvieto the *Studium Generale* status, a privilege the city had repeatedly requested from his predecessor.

The election of Urban VI opened the Western Schism, during which Christendom was divided between those who recognized the pope in Rome and those who supported the pope in Avignon; it was resolved only in 1417 at the Council of Constance, with the election of Martin V. In this context, the professor-popes include the antipope Benedict XIII, Innocent VII, and the antipope Alexander V. Benedict XIII presents a different profile: born Pedro Martínez de Luna into the Aragonese nobility, he had obtained a doctorate in canon law at Montpellier, where he also taught, and his ecclesiastical career advanced through the more conventional channels of family standing.

Callixtus III (Alfonso de Borja) came from a family of small landowners. He was elected in 1455 as a compromise candidate, in a conclave in which non-Italian cardinals were the majority and which took place after the fall of Constantinople, amid urgent calls for a new crusade; he was the oldest cardinal, widely respected, and known for his commitment to the crusade.

The modest social background of several other popes further highlights a broader shift in ecclesiastical careers. Innocent VII belonged to the minor nobility of Sulmona. Sixtus V was the son of a peasant who cultivated a small plot of rented land in the territory of Fermo. In Sixtus's case, as with other popes, belonging to a religious order was a decisive factor, providing access to high-level education and to the most influential figures of the time, such as Michele Ghislieri, later Pope Pius V, then a prominent inquisitor. Similarly, documents related to Adrian VI's admission to the University of Louvain indicate that he required financial assistance to pursue his studies (Von Ranke 1866).

For a substantial majority of the academic pontiffs, membership in a leading family does not appear to have been the principal route to advancement. This contrasts with the growing importance of pontifical-family networks in the 17th century, discussed below. The disappearance of academic popes after the early 17th century, and the historical dynamics behind it, are examined in detail in the next section.

3.4 The disappearance of academic popes after 1600

The last academic pope, Sixtus V, was elected in 1585; after him, for more than two centuries, no pope had taught. We use 1600 to separate the two periods. It is not a date estimated from the data but a conventional choice: the long pontificate of Clement VIII (1592–1605) separates the last generation of post-Tridentine reform popes (Pius V, Gregory XIII, Sixtus V) from the papacy of the 17th century.[20] Below we first set out what the data document, then the rules of papal selection, and finally the mechanisms we propose to explain these changes.

The data document two changes after 1600. The first concerns the pool of candidates: in the College of Cardinals the share of electors who had taught fell from 18% in 1450–1599 to 8% in 1600–1800, while the share of the high nobility remained close to 40% (Appendix Table B2 and

20. The results do not depend on the date chosen: when columns 2 and 4 of Table 4 are estimated only on the elections before 1585, 1590, 1605, 1621 or 1655, the coefficients remain almost unchanged and significant at the 5% level.

Figure B1). The second concerns the choice among the candidates: as shown, before 1600 the conclaves favored cardinals who had taught, whereas after 1600 none of the 49 cardinals with teaching experience who sat in the conclaves was elected. The academic route thus closed for two reasons: cardinals who had taught became rarer, and those who remained no longer enjoyed an advantage in the conclave.

The comparison between electors and elected is most reliable from the late 12th century, when the vote was reserved to the cardinals and nearly all popes were chosen among those present; Appendix B.1 discusses the cases in which it is less so. Avignon is the main exception. The college was dominated by cardinals from southern France recruited through the Curia, many of them trained in law, and it was the most academic of the whole period: 30% of the electors had taught (Appendix Table B2). The high number of academic popes in Avignon thus partly reflects the composition of the college from which they were chosen, but cardinals who had taught were still elected more often than this composition would predict (Appendix Table B3).

After 1600, popes were chosen within the framework set by the reforms of the late 16th century. Sixtus V fixed the size of the college at seventy (1586) and reorganized the Curia into permanent congregations of cardinals (1588): from then on, a career in the Curia became the ordinary route to the cardinalate. Under Paul V (1605–1621) and his successors, moreover, the cardinal-nephew became the head of papal government and of a faction in the college (Prodi 1982; Pattenden 2017; Reinhard 1975).[21]

The facts above are consistent with several explanations, which the data do not allow us to tell apart. We propose three interconnected historical dynamics, which we offer as possible readings of the documented pattern: the secularization of European universities during the Scientific Revolution; the return of the hegemony of pontifical families, which reasserted control over the papacy through powerful Roman dynasties; and the Tridentine reform, which introduced a new model of clerical training centered on seminaries. These mechanisms are complementary and operate on different time scales. The secularization of the universities was a long-run process. The rise of the cardinal-nephew and of the great papal families after 1600 coincides with the change in the composition of the college, which became less academic during the 17th century (Appendix Figure B1). The seminaries founded after 1563 could shape the college only gradually, as the clergy they trained reached the cardinalate during the 17th century. Together, they help to explain both why the academic route closed and why it did not reopen.

3.4.1 The secularization of European universities

Beginning in the second half of the 16th century, universities began to lose their central role in the training of ecclesiastical elites. This process of secularization had deep cultural roots in the Renaissance transformation of university learning. Between the 14th and 16th centuries, humanist scholars in Italian universities, such as Lorenzo Valla, Guarino da Verona, and Francesco Filelfo, challenged scholastic traditions and promoted philological and historical methods. Their

21. The constitutions are *Postquam verus* (1586) and *Immensa aeterni Dei* (1588); Gregory XV introduced the secret written ballot with *Aeterni Patris Filius* (1621). See Visceglia (2013) and, on the end of curial nepotism, Menniti Ippolito (1999).

influence led to significant shifts in university curricula, emphasizing classical languages, textual criticism, and empirical approaches to law, medicine, and natural philosophy. In some cases, their teaching extended beyond universities and helped redefine the boundaries of legitimate knowledge (Brizzi 1996). The emergence of the Scientific Revolution introduced radically new paradigms of knowledge, grounded in observation, experimentation, and rational inquiry, that increasingly clashed with the theological and scholastic framework on which medieval universities had been built. Disciplines such as mathematics, physics, astronomy, and medicine gained prominence in academic curricula, often at the expense of theology and canon law. At the same time, scientific academies multiplied throughout Europe, becoming privileged spaces for scholars to present and debate their discoveries. These institutions, often operating with greater intellectual freedom than universities constrained by ecclesiastical oversight, became key sites for the circulation of new ideas and methods (Biagioli 1993).

This transformation was particularly marked in academic centers more open to innovation, such as Padua, Leiden, Glasgow, and Uppsala. These universities became laboratories of modern knowledge, where new methodologies challenged both the traditional Aristotelian worldview and, at times, Church orthodoxy. Academic figures like Galileo Galilei and Isaac Newton advanced ideas that often directly contradicted official doctrine. The Church's reaction was one of increasing control. While the initial break with academic recruitment predates these events, the trial and condemnation of Galileo in 1633 reinforced this trajectory, serving as a symbolic limit to theological tolerance and as a warning to those inclined toward intellectual autonomy, helping ensure that the academic route to the papacy did not reopen once it had closed (O'Malley 1993; Redondi 1987).

In the wake of such confrontations, universities were placed under growing surveillance. Ecclesiastical authorities sought to curtail academic freedom by censoring content and discouraging speculative inquiry. Professors suspected of harboring heterodox views were dismissed or silenced and were increasingly unlikely to pursue successful ecclesiastical careers. As a result, the university was no longer seen as a suitable environment for shaping the doctrinal and political profiles required of high-ranking Church leaders. The progressive secularization of university life distanced professors from the core priorities of the Counter-Reformation Church, which came to prefer candidates formed within seminaries and curial bureaucracies (Dear 2001; Shapin 1996).

3.4.2 The return of the hegemony of pontifical families

Starting in the 17th century, access to the papacy became increasingly concentrated within a small number of pontifical families who exerted growing influence over the Roman Curia. Families such as the Barberini, Chigi, Pamphili, Aldobrandini, and Borghese dominated the ecclesiastical political scene: they controlled the appointment of cardinals and, in several documented cases, shaped the outcome of conclaves.[22] This system of power, based on clientelistic networks and dynastic alliances, made it increasingly difficult for individuals outside these circles, such as

22. On the concentration of cardinalatial appointments within a small number of families, see Weber (1996), who finds that forty of the fifty-six cardinals who participated in the 1721 conclave were direct descendants of one or more Renaissance popes; more generally on the Sacred College's changing composition in this period, see Pattenden (2025).

university professors, to rise to the highest ecclesiastical office.

Although not an entirely new phenomenon, in the 17th century this dynamic became systemic. The papacy evolved into a central node of the Roman and Italian nobility, and the skills required of future popes shifted from theological or academic expertise to diplomatic experience, administrative management, and political mediation. Ecclesiastical careers were increasingly built through service in apostolic nunciatures, the Secretariat of State, or the various Congregations of the Curia, rather than through academic teaching positions in European universities.

Even when nepotism was formally restricted, such as with Innocent XII's 1692 bull *Romanum decet pontificem*, which forbade the creation of cardinal-nephews, the principle of family and patrician continuity within the papal power structure remained intact. The hegemony of pontifical families created a closed selection mechanism, one that privileged social and political connections over intellectual or academic merit. As a result, universities lost much of their historical role as a recruitment ground for the highest ecclesiastical elites. While in earlier periods, a university professorship could represent a plausible pathway to the papacy, from the 17th century onward, this possibility became increasingly remote, replaced by curial careers based on social status, diplomatic service, and familial ties.

3.4.3 The Tridentine reform and the rise of seminaries

The third key factor was the establishment of seminaries following the Council of Trent (1545–1563), which profoundly and permanently reshaped clerical education. Designed to respond to the needs of the Catholic Reformation, seminaries increasingly substituted for universities in the formation of clergy destined for ecclesiastical careers. Emphasis shifted toward obedience to ecclesiastical authority, spiritual discipline, and strict doctrinal conformity, rather than theological debate or the exploration of universal knowledge (Negruzzo 2023).

This new, standardized educational model, strictly supervised by the Church, ensured coherence with the post-Tridentine Church's priorities but offered little space for intellectual independence or scholarly innovation. Unlike medieval and Renaissance universities, which had been dynamic centers of knowledge production and formation of both ecclesiastical and civic elites, seminaries produced secular clergy prepared for pastoral duties but rarely shaped influential thinkers, theological innovators, or actors in Europe's broader intellectual transformations (Ellis 1967).

The three mechanisms are complementary and operate on different time scales. The secularization of the universities was a long-run process. The rise of the cardinal-nephew and of the great papal families after 1600 coincides with the change in the composition of the college, which became less academic during the 17th century (Appendix Figure B1). The seminaries founded after 1563 could shape the college only gradually, as the clergy they trained reached the cardinalate during the 17th century. Together, they help to explain both why the academic route closed and why it did not reopen.

4 Economic Interpretations

The historical evidence can be read through several economic mechanisms. Given the small number of academic popes, the purpose of this section is not to test hypotheses statistically. Rather, this section relates the patterns documented above to broader literatures on human capital, occupational choice, mobility, and political selection. We organize the discussion around three connected propositions. First, a teaching position worked as a public credential and as a stage of a career ladder, which explains why academic experience could matter for selection into the papacy without producing measurable differences once in office (Section 4.1). Second, this credential could partly substitute for inherited social capital in elite selection (Section 4.2). Third, the closing of the academic route after 1600 reflects a change in the demand for skills and the substitution of other institutions for the university in the formation of the Church's elite (Section 4.3).

4.1 University credentials and career ladders

University teaching could generate value beyond the productive skills acquired through education. A recognized teaching position was also a publicly observable credential: holding one, whether as a university professor, a cathedral-school master, or a lector within a religious order's *studium*, certified competence and made an individual's abilities more visible to potential patrons, rulers, and ecclesiastical authorities. In this sense, the university could perform both a human-capital and an informational function.

For the individuals in Table 1, university teaching was not a terminal occupation. It was one stage in a sequence that could lead from study and teaching to legal or administrative service, episcopal office, the cardinalate, and ultimately the papacy.

This interpretation is close to the economics of career ladders, in which an early job affects later assignments both because workers accumulate human capital and because organizations learn about their ability (Gibbons and Waldman 1999). The premodern university could perform both functions. Teaching law or theology developed skills relevant to ecclesiastical administration, while holding a recognized teaching position provided a visible record of competence. A professorship could therefore have an option value beyond the academic position itself: it could facilitate entry into occupations carrying greater income or prestige.

The career of Ugo Boncompagni, the future Gregory XIII, illustrates the point. After teaching law at Bologna for roughly a decade, he moved to Rome following an invitation from Cardinal Pietro Paolo Parisio, entered ecclesiastical service, and advanced through legal and administrative positions. His university career was therefore not abandoned in favor of an unrelated occupation; it was converted into a different career within the same broad market for highly educated personnel.

A related implication concerns the return to academic human capital. The standard human-capital interpretation emphasizes skills acquired through education and experience (Becker 1964). In the present setting, however, the signaling and screening functions of education are equally relevant. Arrow (1973) interprets higher education as a filter, while Spence (1973) shows how educational choices can transmit information about otherwise difficult-to-observe ability. A uni-

versity teaching position in medieval or early modern Europe could plausibly combine all three roles: production of skills, certification by a recognized institution, and public revelation of talent through teaching and disputation.

This perspective is particularly useful for interpreting the legal careers in the sample. Medieval universities trained specialists in Roman and canon law whose skills had direct administrative value; economic history has shown that such training could affect institutions and economic activity outside the university (Cantoni and Yuchtman 2014). In our biographies, legal teaching similarly appears as a form of academic capital that could be converted into curial and diplomatic advancement.

This interpretation also clarifies the null results of Table 2. The exercise suggests a useful distinction between selection and performance. Academic experience may have mattered for the process by which some individuals reached the papacy without generating obvious differences in measured output once they were in office. Modern work on political leaders similarly distinguishes questions about who is selected from questions about whether leader characteristics affect subsequent outcomes (Besley 2005; Besley, Montalvo, and Reynal-Querol 2011). In our historical setting, the stronger evidence concerns the former.

This distinction also changes how the null coefficients should be read. If universities acted partly as filters or reputation-building institutions, their principal effect may have been to identify talented outsiders and connect them to elite career paths. Once a candidate had survived the multiple selection stages leading to the papacy, measurable differences between former academics and other successful candidates could be small. The regression results are therefore compatible with a role for universities in elite recruitment even in the absence of measurable differences in papal activity.

This also suggests that the post-1600 break affected selection rather than performance. Academic experience had helped make ability visible to a small circle of electors; once that channel disappeared, the Church lost a screening device, not a source of governing competence.

4.2 Social mobility and human capital versus inherited social capital in elite selection

The biographies also suggest a social-mobility function of universities. Several academic popes came from families that lacked the wealth and political position of the great Roman or Italian dynasties. Table 3 confirms the pattern: academic popes came more often than other pontiffs from non-noble families. Education and teaching could not eliminate the importance of patronage, but they supplied an acquired asset that was potentially available to individuals without inherited access to the Curia. This pattern is consistent with the broader evidence on the social origins of premodern academics. Using genealogical information for scholars in Northern Europe, Baudin and de la Croix (2026) show that a majority of academics for whom family background can be reconstructed came from non-elite families, with a substantial share originating from the middle class. Universities therefore recruited upper-tail human capital from well beyond the traditional social elite. In this sense, an academic career could provide a channel through which individuals

converted acquired human capital into social and occupational mobility.

This point connects naturally to economic models of intergenerational mobility, in which outcomes depend both on investments in human capital and on advantages transmitted within the family. Becker and Tomes (1979) emphasize that family influence operates not only through material resources but also through reputation and connections. The academic route documented here is interesting precisely because it offered a possible counterweight to these inherited resources. A chair in Paris, Bologna, Louvain, or another recognized center could create a reputation that was not reducible to family name.

The evidence should not be read as showing that medieval universities were generally egalitarian institutions. Access to education itself was selective, and successful academic careers often required patronage. The narrower implication is that, within the ecclesiastical elite, academic achievement sometimes provided an alternative path of ascent. The disappearance of academic popes therefore also signals the weakening of one channel through which acquired human capital could support upward mobility.

The return of powerful pontifical families in the 17th century can be interpreted as a change in the selection technology. Earlier periods sometimes allowed academic distinction, religious-order careers, or administrative competence to compensate for weaker family background. Later selection placed greater weight on curial service, diplomacy, and connections to established families. This interpretation is consistent with the broader insight that political power can reproduce itself within families even when offices are formally non-hereditary (Dal Bó, Dal Bó, and Snyder 2009).

Compared with our results in de la Croix and Goñi (2024), where we find that nepotism declined over time in premodern academia, the evidence on professor-popes suggests a movement in the opposite direction. While academic careers became progressively less dependent on family ties, access to the highest office of the Church appears to have become more strongly associated with family background and established elite networks. The two institutions may therefore have followed diverging trajectories in the degree of openness of their recruitment. This contrast suggests that, at the very moment when academia was becoming less nepotistic, the highest levels of the Church were becoming more socially closed.

The distinction between human and social capital is of course not absolute. Academic careers themselves created networks, and aristocratic families invested in education. The relevant point is one of relative weight. The historical break after 1600 suggests that the market value of publicly observable academic credentials fell relative to the value of embeddedness in ecclesiastical and aristocratic networks.

4.3 Changing demand for skills

The third proposition concerns the closing of the academic route. The disappearance of academic popes after 1600 can be described as a fall in one component of the return to academic human capital: its value as a route to the highest ecclesiastical office. The Church increasingly rewarded other credentials and other career experiences when selecting its highest leadership. This change may reflect changing demand for skills rather than declining supply of educated candidates. Medieval and Renaissance ecclesiastical government placed a high value on theologians, canon

and civil lawyers. These were fields in which university teaching and Church administration were closely connected. Over time, however, as we saw above, careers leading to the papacy became increasingly centered on diplomacy, nunciatures, the Secretariat of State, and the congregations of the Curia.[23]

The relevant change can be described as a shift in the relative return to different bundles of human capital. Scholastic reputation and university teaching became less valuable for promotion to the highest office. This interpretation also helps explain why the disciplinary composition of academic popes matters. As the Church changed, the skills valued in ecclesiastical careers changed as well. As a result, the skills needed for advancement were increasingly acquired outside universities, and academic credentials mattered less.

A second change concerns institutional specialization. Universities in medieval Europe served clerical as well as secular purposes, and their legal and administrative training had consequences far beyond academic life (Cantoni and Yuchtman 2014). Over the early modern period, however, the university system became increasingly differentiated from the institutions responsible for clerical formation. At the same time, high-level knowledge was becoming valuable in a wider range of institutions, such as academies (Zanardello 2024), a development consistent with the broader literature on upper-tail human capital (Squicciarini and Voigtländer 2015).

This is not a claim about intellectual decline: Feingold (1984) shows that English universities remained vigorous sites of scientific teaching well into the 17th century. What changed was the university's role as a channel into the highest ecclesiastical office, not its role as a producer of knowledge.

As already mentioned, the establishment and diffusion of seminaries after the Council of Trent are crucial in this respect. The Church could increasingly produce specifically ecclesiastical human capital in institutions separate from the university, while universities served a broader and progressively more secular market for knowledge.

Finally, the closing of the academic route changed the allocation of talent across sectors. Adam Smith already described universities and the Church as competing for learned men. Where ecclesiastical benefices were attractive, he argued, the Church could draw eminent scholars away from universities (Smith 1937). This observation is especially relevant for a system in which university teaching could serve as an entry point into more remunerative or influential ecclesiastical careers.

Modern economics gives this mechanism a broader interpretation. Baumol (1990) emphasizes that institutions shape the allocation of ability by changing the relative payoffs to productive and unproductive activities, while Murphy, Shleifer, and Vishny (1991) show how occupational rewards can redirect talented individuals across sectors with consequences for growth. Our evidence does not allow us to classify ecclesiastical careers as socially productive or unproductive, and it would be too strong to claim that the Church generated a measurable misallocation of talent. The historical evidence does, however, illustrate the first step of the mechanism: talented academics responded to alternative career opportunities, and the Church was capable of

23. After Trent, ad hoc papal commissions gradually developed into permanent Congregations, formally reorganized by Sixtus V in the bull *Immensa aeterni Dei* (1588). Service in these Congregations gave cardinals experience in the increasingly institutionalized administration of the Church. See Pattenden (2025, 186–87, 202).

attracting them.

The case of Gregory XIII makes the point concrete, but the mechanism is broader. High returns to ecclesiastical advancement could have two opposing effects on the production of knowledge. They might encourage investment in advanced learning by increasing the expected payoff to academic distinction, while at the same time drawing successful scholars out of university positions. Whether the net effect was beneficial is beyond what the present data can establish.

The fall in the ecclesiastical return to academic distinction thus weakened the Church's pull on talent, consistent with the broader reallocation of elite human capital toward secular administration and the new scientific institutions of early modern Europe (McClellan 1985).

5 Conclusion

This paper has used the careers of academic popes to study a broader issue: the changing role of universities in the recruitment and allocation of elite human capital. Using RETE, we identified 22 popes who had taught before their election, all elected before 1600. Their biographies show that university teaching could form part of a career ladder linking scholarship to the highest offices of the Church. They also show that this route was available to several men from modest social backgrounds. The comparison with the cardinal electors shows that this was not a reflection of the composition of the college: before 1600 the conclaves chose cardinals who had taught, and cardinals of non-noble birth, more often than their weight among the electors would predict. At the same time, the available measures of papal activity provide no evidence that former professors behaved systematically differently once elected.

The economic interpretation of these facts is not that academic human capital ceased to matter after the early 17th century. Rather, its return changed. Earlier in the period, university training and teaching could create skills, certify ability, and provide an alternative route into the elite. Over time, the Church increasingly relied on seminaries and curial institutions for clerical formation, the skills rewarded in high ecclesiastical careers shifted toward diplomacy and administration, and powerful families regained a central role in papal selection. Academic capital consequently became less easily convertible into the highest ecclesiastical office.

Seen in this way, the disappearance of professor-popes is one symptom of a wider institutional separation between the university and the Church. The medieval and Renaissance university was simultaneously a producer of knowledge, a training institution, and a recruitment ground for governing elites. In the early modern period these functions became more specialized across institutions.

More broadly, the case of the papacy suggests that the openness of an elite depends less on the existence of institutions of learning than on the channels that connect them to positions of power. Universities continued to train the clergy after 1600, and most cardinals still held university degrees (Appendix Table B2); what changed was the weight that the selection process attached to the public record produced by a teaching career, relative to family networks and curial service. The same institutions of learning could thus favor or limit the reproduction of elites, depending on whether those who selected leaders used the information they provided.

The small number of academic popes necessarily limits what can be established econometrically. The value of the evidence lies instead in the long-run historical pattern and in the possibility of observing unusually detailed career trajectories. These careers suggest that an important function of premodern universities was to transform acquired human capital into social and political advancement. The end of the academic route to the papacy documents the weakening of that function in one of Europe's most important premodern institutions.

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