

Economics of Sainthood (a preliminary investigation)*

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1. Introduction

Saint-making has been a major activity of the Catholic Church for centuries. The pace of sanctifications has picked up noticeably in the last several decades under the last two popes, John Paul II and Benedict XVI. Our goal is to apply social-science reasoning to understand the Church's choices on numbers and characteristics of saints, gauged by location and socio-economic attributes of the persons designated as blessed.

To carry out this research, we began by collecting long-term data on numbers and characteristics of blessed persons selected by the Catholic Church.¹ The data apply to canonizations (approval as a saint) and beatifications (final stage of qualification for canonization).² Our data set includes all officially recognized beatifications and canonizations by the Catholic Church since 1588, when official Vatican records began. Our list was drawn from *Index ac Status Causarum* (1999) for the years starting in 1588 and ending in 1998.³ For

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¹The data and details of construction will eventually be available at: www.economics.harvard.edu/faculty/barro; <http://www.hks.harvard.edu/fs/rmcclea/data.html>; <http://www.columbia.edu/~afm2106/research.htm>.

²Pierre Deloos (1969) has four categories: (1) All those individuals who received papal canonization either before Pope Urban VIII's decrees or in an equivalent canonization after the decrees; (2) individuals who were canonized locally by a bishop, popular will, or monastic tradition; (3) those whose canonizations were prepared by the Congregation of Rites; (4) individuals who have been officially beatified and canonized.

³The *Index ac Status Causarum* is published by the Catholic Church's *Congregatio pro Causis Sanctorum* (Congregation of the Causes of Saints, previously known as Congregation of Rites), a body of the Holy Curia that

1998 until the present, we drew from the Vatican website.⁴ We also have less complete information covering canonizations between 1234 and 1588—as of 1234, designation as a saint formally required papal approval. Data for this time period are based on Burns (1995) and are incomplete. In our data set, we focus on blessed persons who are known as confessors⁵—individuals who lived a life of virtue and may have suffered persecution for their faith but were not put to death. Hence, our analysis excludes martyrs, who were often beatified in large groups.⁶

For confessors, beatification requires the posthumous performance of a miracle—one since the 1983 reforms, two or more before that (Peters [2001, p. 676]). The beatification stage is a prerequisite for non-martyrs to qualify for the final stage, canonization, which requires a second, post-beatification miracle (two additional miracles before the 1983 reforms, see Peters [2001, p. 680]). In contrast to confessors, martyrs require no miracles to be beatified. We have information on when the canonizations and beatifications occurred and, hence, under which pope.

Given the nature of hagiography, we have only limited data on the characteristics of the blessed persons. The information—not all available for all blessed persons—includes country and city of birth and death, measures of education and literacy, occupation, family's occupation, number of siblings, marital status, whether the person was a convert, whether the primary

manages the processes of beatification and canonization. The Congregation of Rites was established in 1587. http://www.vatican.va/roman_curia/congregations/csaints/documents/rc_con_csaints_doc_20070517_sanctorum-mater_en.html. Pierre Deloof's (1969) data on beatifieds and saints cover the period 993 to 1967. His data include all beatifications from the 17th century onward, all papal canonizations, and an incomplete list of local canonizations performed by bishops without papal confirmation and in spite of papal reservations. We do not discuss his data set in this chapter but will do so in future research on saints.

⁴http://www.vatican.va/news_services/liturgy/saints/index_saints-blesseds_en.html.

⁵For the definition of “confessor,” see *Catholic Encyclopedia* (2009a).

⁶In deciding who was beatified or canonized due to martyrdom, we went by the classifications in the official Vatican publication, *Index ac Status Causarum* (1999). This procedure led us to include Joan of Arc in the data set; although she was murdered, her selection as a blessed person (beatified in 1909, canonized in 1920) was apparently dictated by other considerations. In contrast, Thomas More and John Fisher (jointly beatified in 1886 and canonized in 1935) are labeled as martyrs and, therefore, do not appear in our data set.

location was urban, the person's religion status (broken down into pope, bishop, priest, non-ordained religious, lay person, and ascetic), the order to which the person belonged if any, and the vocational "calling" (for example, serving the poor). Most of the information was grouped into binary indicators, for example, for education and literacy, we have dummy variables for literate, home schooled, some formal education, convent or seminary schooling, and university education.

To assemble the information on each individual, we examined a variety of secondary sources. For earlier blessed persons, we used the twelve-volume series *Butler's Lives of the Saints* (Burns [1995 and later years]), McBrien (1995, 2000), and Coulson (1958). For recently chosen blessed persons, the Vatican provides short biographies on its official website. In addition, we consulted the Catholic Encyclopedia (<http://www.newadvent.org/cathen/>).

In the present study, we analyze determinants of rates of canonization and beatification and how these rates varied by pope, including an impact from the cumulated stock of beatifieds who have not yet been canonized. We plan to investigate how the probability of being chosen depends on individual characteristics and whether these relationships have changed over time. Notably, we want to see whether the regional distributions of blessed persons respond to the sizes of Catholic constituencies and to competition from alternative religion providers. This competition is intense with Protestant churches since the Reformation and with Evangelical faiths in recent decades.

2. A Brief History of the Evolution of the Process of Saint-Making

The structure and political nature of the Roman Catholic Church during the first thousand years of its existence allowed for local, community veneration to inform who qualified as a saint.

Martyrs were the first to be venerated, and their *vitae* were compiled by local cults (*cultus* = veneration). "Canonisatio per viam cultus," or canonization by popular veneration, became common, continuing through the Middle Ages.

The unregulated saints market led regional Roman Catholic hierarchs to declare heresy and error (Kemp [1948, p. 11]).⁷ The attempted centralization of the saint-making process in the hierarchy of the Church began as early as the fifth Council of Carthage (401C.E.), when bishops were designated as the primary ecclesiastical authority to determine the historical veracity of martyrs and confessors (Kemp [1945, p. 13]. Bishops were licensed to confer a form of beatification upon a meritorious individual within their diocese. Likewise, bishops were instructed to destroy altars containing the body or relics of a martyr for whom there was no proof (Kemp [1948, p. 15]). Cases of heresy and error were discussed at synods.

Cults of an officially recognized martyr or confessor could transfer (*translatio*) the saint's body to a designated shrine location and select a festival date on which liturgical rituals would be performed annually. The act of transferring a saint's body to an altar or shrine came to be interpreted as the act of canonization (Kemp [1948, p.29]). Although local in origin, saint cults spread across dioceses through popular veneration as well as ecclesiastical promotion. By the 9th century, the transportation of bodies and relics for financial profit became so common that the bishops at the Council of Mainz (813) addressed the issue by decreeing that a body could be moved only by permission of the relevant bishop and provincial synod and after informing the

⁷Prior to the patriarchs of Jerusalem, Antioch, Alexandria, Rome, and Constantinople (313A.D.), the early Roman Church was governed by bishops who held periodic synods to decide matters of doctrine and discipline. The collapse of the Roman Empire with the invasion of Rome in 410 contributed to the establishment of the papacy in Rome. Yet, the pope remained a bishop, the bishop of Rome, with authority only over those geographic regions loyal to his see. The centralization of universal church authority in the papacy occurred over centuries, reaching a high point with Pope Urban VIII (1568 –1644).

secular authority (see Kemp [1945, p. 14]; Kemp [1948, pp. 38-39 and p. 52]).⁸ At this time, a calendar of saints' feasts was officially drawn up, thereby aiding the Church in its efforts to exercise uniform control over beatifications (see *Catholic Encyclopedia* [2009a]).

The first recognized papal canonization took place in 993 when Pope John XV canonized Saint Ulric of Augsburg, a mere 20 years after Ulric's death. We say "mere" because, since 1588, the time between death and canonization averaged 181 years. The first official, universal canonization occurred in 1041, with a papal bull addressing all nations and languages, not just clergy and selected ethnic-cultural groups (Kemp [1948, p. 61]). Petitions for papal canonization of a saint initially were done to introduce Church oversight and doctrinal rigor into beatification, a process that continued to be controlled by bishops at the local level. By petitioning the pope for canonization, the local community and authorities sought the status and spiritual weight of the Holy See (Kemp [1948, p. 62]). The demand for papal canonization corresponded to the rise in power of the papacy in Rome (Kemp [1948, pp. 79-80]).

The process of canonization gradually became formalized up to the 12th century. The process featured a commission, which followed procedures that included written histories of the candidate's life and miracles, along with the testimony of witnesses. Papal bulls were written in a stylized format (Kemp [1948, pp. 100-101]). Popes further formalized the process by requiring synod or council examination of the miracles and virtues of ecclesiastical candidates.

Kemp (1945, p. 16) observes that papal authorization for canonizations outside of Papal States became increasingly required. The occupation of legate was introduced, thereby geographically extending the pope's jurisdiction. Subsequently, it became common for legates to canonize saints (Scholz [1961, p. 39]). With the geographic extension of the pope's authority

⁸A relic is an object (for example, clothing) or body part (for example, hair) of a blessed person. Sometimes a relic comprises an item the person has used, such as a comb, chair, bed, clothing, etc. According to the Roman Catholic Church Code of Canon Law, Canon 1237, relics must reside in one place and cannot be sold.

came pontificate control over beatifications and the requirement of papal permission for the performance of religious rituals to venerate a saint. By 1159, the process of canonization had become established custom, with the pope making decisions in consultation with synods or general councils.

The decree in 1234 by Pope Gregory IX formally recognized the exclusive authority of the Holy See to bestow the title of “saint” on an individual. Although canonization was now reserved for the papacy, enforcement within the ecclesiastical hierarchy required incentives to gain compliance from the clerics. Bishops continued to confer beatifications, creating within the Church a clear distinction between “saint” (*santi*) and “beatified” (*beati*).⁹ The decree built on the canon of the Fourth Lateran Council of 1215, which stated that relics could not be purchased or sold, and new relics could be venerated only upon the approval of the pope (Kemp [1948, p. 106]). The bishops maintained authority over beatifications through the collection of evidence on miracles and relics; control the bishops would exercise into the 17th century. However, the 1234 decree had little effect on practices. The increasing control of canonization by the Holy See was in response to laxness and corruption at the diocese level (Ferrero [2002]). The complete concentration of authority over the entire process in the papacy, from beatification to sainthood, occurred only after the Counter-Reformation in the 17th century.

The Protestant Reformation (1517–1648) challenged the practice of saint veneration and their cults. Martin Luther viewed cults as forms of pagan idolatry, rejecting the idea of saintly intercession, which was thought in Lutheran terminology to constitute reliance on works rather than faith. John Calvin (1547 [1854]) composed a systematic critique of the cult of relics, in

⁹For a discussion of the evolution of the process of canonization in the Roman Catholic Church during the Middle Ages, see Kemp (1945).

which he rejected the veneration of relics on theological grounds and highlighted absurdities such as the multiple heads of John the Baptist and parts thereof enshrined throughout Europe.

Pope Paul III convened the Council of Trent (1545–1563) to address reforms to the Church as it confronted competition from Protestantism in Germany and schism with England, following the excommunication of King Henry VIII in 1538. The Council of Trent reaffirmed the saint cults (session 25, p. 1563). The reaffirmation of sainthood by the Church confronting heresy in the form of Protestantism can be interpreted as a means of maintaining adherents. The process of a candidate has always been initiated from below through popular veneration in communities. Followers of a particular holy person voluntarily promote his or her cause to the ecclesiastical authorities. By reaffirming the cult of saints, the Church hierarchy was keeping local communities involved through an “open-access rent-seeking contest” (Ferrero [2002, p. 357]). At the same time, the Church was concentrating power in the Holy See to ensure against heresy.

Pope Sixtus V formalized the process in the Holy See by creating the Congregation of Rites (*Sacrorum Rituum*) in 1587. The Congregation had authority over the canonization process, particularly with regard to verifying miracles and virtues; for the first time the process included medical examiners (Harvey [2007, p. 1256]). Pope Sixtus V also purged the Calendar of Saints of persons with questionable credentials. To centralize authority over the local church, the pope reinstated the practice of bishops reporting to Rome every five years on the state of their dioceses (McBrien [2000, p. 293]).

In 1634, Pope Urban VIII issued two decrees centralizing the entire process from beatification to sainthood in the Holy See. The result was that beatification designates the permission to venerate an individual in a designated location and with specified liturgical rituals.

Local public veneration, previously reflecting a groundswell of popular devotion, was prohibited unless the individual was beatified by the pontiff. The effect of this ruling was to remove the authority for beatification from the diocese and centralize it in the Holy See.

Canonization refers to universal, public veneration of an individual. This veneration is required by precept by the offices of the pope.¹⁰ Canonization can be formal or equivalent. Formal canonization consists of a judicial process involving the Congregation of Rites with traditional ceremonies being performed. Equivalent canonization is when the pope suspends the formal process and directly declares an individual to be a saint. This type of canonization occurs with a candidate who has been deceased for a long time (at least 100 years at the time of Pope Urban VII's decrees) and whom the Pontificate views as worthy of formal Church veneration.

By 1917, rules for canonization and beatification were included in the *Codex Juris Canonici* and *Codex pro Postulatoribus* to guide the ecclesiastical authorities involved in the process. Canon 199 of the *Codex Juris Canonici* stipulated that only the pope had the authority to canonize. The Sacred Congregation of Rites was charged with overseeing the process, and local ecclesiastical authorities were required to follow canon law. A rule requiring a waiting period of 50 years after the death of a candidate before a petition could be made was reaffirmed (in Canon 2101) as a precaution against imposters, media fads, and normal acts of devotion toward the deceased (see McBrien [2001, p. 44] and Peters [2001, p. 672]).

On May 8, 1969, Pope Paul VI issued the Apostolic Constitution *Sacra Rituum Congregatio*, where he created two congregations, the Congregation for the Causes of Saints (replacing the Congregation of Rites) and the Congregation for the Divine Worship. Another congregation, The Congregation for the Doctrine of the Faith, continued to play a central role in the canonization process. Pope John Paul II further decentralized the process in 1983, while

¹⁰This description of canonization is fully articulated in the work of Pope Benedict XIV (1740-1758).

strengthening the Vatican's ability to review and prepare cases by creating the College of Relators.¹¹ A relator is a high-ranking member of the Roman Curia who supervises the preparation of the materials to be presented to the Congregation for the Causes of Saints.

In the current structure, local church authorities oversee and are responsible for the collection of evidentiary materials in the first phase of the beatification process. The diocese in which the candidate died is responsible for initiating the proceedings. After a five-year waiting period after the death of the candidate, a formal petition can be submitted to Rome to formally open the "cause" or case for beatification. Upon Rome's approval that the process can begin, the local diocese appoints a person in charge of the case (the postulator), who gathers evidentiary materials (writings by the candidate, testimonials from eyewitnesses, and second-hand accounts) to reconstruct the life of the candidate. The body of the candidate or "Servant of God" is exhumed and examined to ensure that the person existed. When the collection of evidence is complete, the diocese report is sent to Rome and given to a relator, who reviews the report and appoints a medical expert to conduct an independent inquiry into the claimed miracles. The relator oversees the writing of the position report or *positio*, which is submitted to the Congregation for the Causes of Saints, consisting of 25 cardinals and bishops. If the candidate is deemed by the Congregation to have lived a virtuous life according to Catholic theology, the candidate receives the title "Venerable." To be beatified, the candidate (if not a martyr) has to have performed a miracle. At this stage, the identification of a miracle earns the candidate the

¹¹*Apostolic Constitution of His Holiness John Paul II Divinus Perfectionis Magister* (January 25, 1983). See www.vatican.va/roman_curia/congregations/csaints/index.htm. John Paul II streamlined the canonization process in three ways: (1) The number of miracles was reduced from two to one for beatification and two to one for canonization. (2) The canonization process became cooperative and academic in nature, rather than litigious. (3) A seamless process was created whereby the local bishop, in cooperation with staff in the Congregation for the Causes of Saints and the Roman Curia, oversaw the obtaining of the required information on a candidate.

title “blessed” as a beatified. A second posthumous miracle must be performed and verified after beatification before the candidate can be canonized as a saint.¹²

Pope Benedict XVI has maintained the 1983 reforms, while making a few minor bureaucratic changes. The act of beatification can now take place anywhere in the world and, although a pontifical act, it does not require the physical presence of the pope.¹³ The large expansion in the number beatified by the last two popes (319 by John Paul II and 52 by Benedict XVI through 2009) has lessened the significance of this step toward sainthood. The cumulative number beatified from 1592 to 2009 (non-martyrs) is 630, and the number of these not canonized as of 2009 is 371, by far a record for the outstanding stock of beatifieds.

3. The Data Set of Beatifieds and Saints

Table 1 gives statistics on popes’ terms from Clement VIII (ID no. 229, 1592-1605) to the current pope, Benedict XVI (no. 263, 2005-2009). The table gives, for each pope, the ID number, name, start and end year of the term as pope, and tenure in years (based on the specific day started and ended). For the columns under the heading “Beatified,” the stock is the cumulative number beatified but not yet canonized at the start of the pope’s term (see the notes to the table), the duration is the mean number of years from beatification to the start of the pope’s term for the stock of beatified, and the flow is the number beatified during the pope’s term. Recall that our concept of beatification applies only to non-martyrs—as already noted,

¹²The Prefect of the Congregation for the Causes of Saints appoints the medical experts of the Medical Commission. These experts are advisors to the theological members of the Congregation, providing scientific advice on the miracles. See Harvey (2007, pp. 1256-1257).

¹³For the official description of the process, see www.vatican.va/roman_curia/congregations/csaints/documents/rc_con_csaints_doc_20070517_sanctorum-mater_en.html. For the changes made by Pope Benedict XVI, see *Notice of the Congregation for the Causes of Saints on New Procedures in the Rite of Beatification* (September 29, 2005), available at www.vatican.va/roman_curia/congregations/csaints/documents/rc_con_csaints_doc_20050929_comunicato_en.html

martyrs have different requirements (martyrdom in the cause of the Church but skipping one tranche of miracles) and often comprise groups of persons, rather than individuals.

We computed, for each pope, the annual beatification rate, defined as the ratio of the number beatified to the pope's tenure. Figure 1 shows these beatifications per year by pope since 1592 (for popes with four or more beatifications). For all 35 popes, the mean beatification rate was 1.2, the median was 0.45, the minimum was 0 (for several popes), and the maximum was 12.0 for John Paul II (no. 262). As indicated in the figure, the beatification rate was between 0 and 2 until the last two popes—when the rate rose sharply to 12 for John Paul II (1978-2005) and 11 for Benedict XVI (2005-2009). This pattern suggests a marked diminution of standards for beatification, a conjecture that we support later through regression analysis.

We calculated the annual canonization rate for each pope as the ratio of the number canonized to the pope's tenure. Figure 2 shows these canonizations per year since 1592 (by pope for those with four or more canonizations). For all 35 popes, the mean canonization rate was 0.80, the median was 0.23, the minimum was 0 (for several popes), and the maximum was 6.0 for Benedict XVI. The pattern shown in the figure suggests that John Paul II (at 3 canonizations per year) was only a moderate outlier, whereas Benedict XVI (at 6 per year) was a clearer outlier. However, our subsequent regression analysis suggests a different interpretation, whereby Benedict XVI may have mainly been responding to the dramatic increase in the stock of beatified persons generated by John Paul II.

One way to step up the pace of beatification temporarily is to shorten the length of time between death and beatification. This interval was restricted before the 1983 reforms to be at

least 50 years, although popes occasionally ignored this restriction.¹⁴ Over the full sample from 1592 to 2009, the mean time from death to beatification was 118 years, and the median was 81. Figure 3, for popes with four or more beatifications, suggests that this lag time rose early on—from Paul V, no. 231, 1605-1621, to Clement XII, no. 244, 1730-1740. However, the lag fell back around the time of Pius XI, no. 257, 1922-1939, and has since been relatively stable. For the last two popes, the numbers were a mean of 109 years and a median of 86 for John Paul II and a mean of 91 and a median of 84 for Benedict XVI. These values are roughly in line with those prevailing since Pius XI.

For the time lag between beatification and canonization, the mean from 1592 to 2009 was 49 years, and the median was 12.5. Figure 4 indicates that John Paul II was reasonably consistent with the overall experience—a mean of 48 and a median of 18. However, Benedict XVI (2005-2009) seems to have shortened the lag—he had a mean of 19 and a median of 11.

4. Regression Results on Rates of Canonization and Beatification

We now use regression analysis to assess determinants of rates of canonization and beatification. We organize the data by pope; hence, there are 35 observations, corresponding to popes' terms from Clement VIII (1592-1605) to Benedict XVI (2005-2009), as described in Table 1. The time patterns for canonizations and beatifications per year are the ones displayed by pope in Figures 2 and 1, respectively.

Table 2 has statistics on the variables used in the regressions. Table 3 has regressions for canonizations per year, which has a mean of 0.80 and a standard deviation of 1.29 (Table 2).

The popes exhibit substantial variation in tenure—the mean shown in Table 2 is 11.8 years, but

¹⁴From 1625 to 1982, 27 out of 263 beatifications took place less than 50 years after the blessed person's death. Only 4 of the 27 occurred before 1905. From 1983 to 2009, 54 of the 345 beatifications featured a lag of less than 50 years from the blessed person's death.

the range is from 0.1 (Leo XI, 1605-1605, and John Paul I, 1978-1978) to 31.7 (Pius IX, 1846-1878). To account for this variation, we give bigger weight to observations with longer terms.¹⁵

One straightforward determinant of the canonization rate is the number of candidates. We measure this number by the stock of persons previously beatified, but not yet canonized, at the start of a pope's term. We, thereby, neglect the rare cases (nine since 1592) in which persons were canonized without having been recorded as previously beatified. (We include in the stock of beatified the four persons who were canonized since 1592 but reported as having been beatified well before 1592.¹⁶) In addition, we include the duration of the beatified stock—the mean number of years from beatification to the start of a pope's term among persons in the stock of beatified at the start of the term. One force is that candidates may become more compelling as they age (if popes view it as undesirable to leave meritorious candidates waiting for too long). In this case, a higher duration would raise the canonization rate. However, when candidates have different (unobserved) “quality,” candidates may remain a long time in the pool because they have been judged to be of low quality. In this case, a high duration might have an inverse association with the canonization rate.

Another possibility is that a pope might, eventually, experience diminishing returns to canonizing as his term gets longer. This pattern would arise, for example, if a pope cares about the absolute number of blessed persons that he chooses—so that rates of beatification and canonization tend to occur initially at a high rate. We examine this effect by including the pope's tenure as an independent variable in the regressions.

¹⁵The error term in a regression for canonizations or beatifications per year would tend to have lower variance for a pope with longer tenure; that is, the variance of the mean goes down as the sample gets larger. In a baseline case where a canonization (beatification) arrives randomly with constant probability per unit of time, the variance for canonizations (beatifications) per year would be proportional to the reciprocal of tenure. Therefore, the regressions weight each pope's observation by the square root of his tenure.

¹⁶We thereby neglect the large number of persons who were “beatified” without formal papal approval in the pre-1592 era.

One clear pattern is that a higher stock of beatified persons significantly raises the canonization rate—the estimated coefficient in column 1 of Table 3 is 0.0123 (s.e.=0.0021). As an example, John Paul II began with a beatified stock of 105 but did so much beatifying that he bequeathed a stock of 344 to Benedict XVI. The coefficient of 0.0123 implies that the addition of 239 to the beatified stock would raise the canonization rate for Benedict XVI by 2.9, all else equal, compared to the mean rate of 0.80 observed over the full sample. Thus, this effect explains a lot of Benedict XVI's canonization rate of 6.0 (through 2009). More generally, a one-standard-deviation rise in the beatified stock (by 58.9, according to Table 2) would raise the canonization rate by 0.72 (compared to the mean of 0.80 and standard deviation of 1.29, from Table 2).

The regressions show a positive coefficient for the duration of the beatified stock but not one that is statistically significantly different from zero. The estimate in Table 3, column 1 is 0.0063 (s.e.=0.0047). This point estimate implies that a one-standard-deviation increase in duration (by 16.0 years, from Table 2) would raise the canonization rate by 0.1 per year (compared to the mean of 0.8 and standard deviation of 1.3). This weak effect likely reflects the offsetting influences from the duration of the stock of beatifieds, as discussed earlier.

Another result is the significantly negative coefficient on pope's tenure, given by the coefficient -0.0229 (s.e.=0.0095) in Table 3, column 1. This result implies that a one-standard-deviation increase in tenure (8.5 years in Table 2) reduces the canonization rate by 0.2 per year. Thus, there is a little evidence that popes experience saint-making fatigue as their tenure in office lengthens. It is also possible that the relation between the canonization rate and the pope's tenure could be non-linear—for example, if it takes some time for a new pope to engage in the process, there might be an initial phase in which the canonization rate rises with tenure and a

later phase in which the relation changes sign. However, if we add the square of the pope's tenure to the equation in column 1, we get an estimated coefficient, 0.0001 (s.e.=0.0011), that differs insignificantly from zero.

A dummy variable for the last two popes (which coincides with a dummy for non-Italian popes in the period since 1588) is positive and highly significant—the coefficient is 1.93 (s.e.=0.35) in Table 3, column 1. The value 1.9 is high compared to the mean and standard deviation of the dependent variable (0.8 and 1.3, respectively).

The high R^2 value of 0.86 in Table 3, column 1, is somewhat misleading as a gauge of the fit, since a lot of the “explanatory power” comes from the dummy variable for the last two popes. Perhaps more informative is the standard error of estimate of 0.45, which can be compared with the mean and median of the dependent variable of 0.80 and 0.23, respectively.

Table 3, column 2 shows that, holding fixed the independent variables already discussed, there is no statistically significant time trend in canonizations per year. This result is surprising in that the time trend should proxy roughly for the world population of Catholics, and one might have expected the number of saints chosen to respond to the overall size of the constituency. We plan to explore this relation more in future research by constructing estimates of world Catholic population. However, it is likely (as suggested by our later analysis) that the relevant constituency weights some parts of the Catholic world more heavily than others.

Table 3, column 3 shows that the stock of canonized persons (at the start of a pope's term) does not have a significant effect on the canonization rate. Another variable (not shown) that does not have a significant effect is the pope's age at the start of his term. One might have expected a positive effect because a higher starting age tends to signal a lower expected tenure and a consequent incentive to canonize rapidly early in the term.

Table 3, column 4 allows for two separate dummy variables for the last two popes. The coefficient for John Paul II is positive and significantly different from zero, 1.90 (s.e.=0.36). Hence, John Paul II is a clear outlier from the previous popes in terms of choosing a high canonization rate. The coefficient for Benedict XVI is also positive but not significantly different from zero, 1.52 (s.e.=1.31). The hypothesis that the coefficients on the two dummy variables are equal is accepted with a high p-value (0.75). Thus, the limited information available through 2009 about Benedict XVI is consistent with two hypotheses. One is that Benedict XVI is similar to the popes prior to John Paul II but was motivated to canonize at a high rate only because of the dramatic increase in the stock of beatifieds generated by his predecessor. The other hypothesis is that Benedict XVI is as much of an outlier as John Paul II in the sense of canonizing at a rate well above that of the earlier popes (for a given stock of beatifieds, etc.). We will get more information about which hypothesis accords better with the data if Benedict XVI has a long tenure in office.

Table 4 has analogous regressions for beatifications per year. Unlike the previous case, we lack information about the stock of candidates. (For recent years, it might be possible to construct a stock of persons who have passed hurdles that precede beatification.) One result in column 1 is that the stock of previously canonized persons has a significantly positive effect, given by the estimated coefficient 0.0115 (s.e.=0.0020). This result implies that a rise in the canonized stock by one standard deviation (56, from Table 2) raises the beatification rate by 0.64, compared to the mean of 1.22 and standard deviation of 2.65 (Table 2). One possible interpretation is that the stock of canonized is analogous to senior faculty, whereas the stock of beatified but not yet canonized is analogous to junior faculty, and popes desire a mixture of

senior and junior “faculty” as inputs into some sort of production function. With this interpretation, a rise in the canonized stock might motivate an increase in the beatification rate.¹⁷

Unlike for the canonization rate in Table 3, the results for the beatification rate in Table 4, column 1, show a statistically insignificant effect from pope’s tenure, 0.0028 (s.e.=0.0092). We do, however, find some evidence for a non-linear effect. If we add the square of tenure, we get that the estimated coefficients are 0.074 (0.037) on tenure and -0.0021 (0.0010) on tenure squared. Each of these estimated coefficients are statistically significantly different from zero with p-values just above 0.05. The point estimates imply that the marginal effect of tenure on the beatification rate is positive for tenure below 2.8 years and then becomes negative. However, the overall evidence for an effect of tenure on the beatification rate is not strong: the estimated coefficients on tenure and tenure squared are jointly statistically significantly different from zero only with a high p-value, 0.15.

The dummy variable for the last two popes shows a dramatic positive effect on beatifications per year—the estimated coefficient in Table 4, column 1, is 9.76 (s.e.=0.36). This effect compares with the overall mean and standard deviation for the beatification rate of 1.22 and 2.65, respectively (Table 2).

Again, the R^2 value—0.96 in Table 4, column 1—is misleadingly high because the dummy variable for the last two popes has so much “explanatory power.” The standard error of estimate of 0.58 can be compared with the mean and median of the dependent variable of 1.22 and 0.45, respectively.

¹⁷This perspective also suggests a negative effect from the beatified stock on the beatification rate and a negative effect from the canonized stock on the canonization rate. In column 3 of Table 4 (where the dependent variable is the beatification rate), the estimated coefficient on the beatified stock is negative (-0.0064, s.e.=0.0034) but not significantly different from zero at the 5% level. In Table 3, column 3 (where the dependent variable is the canonization rate), the estimated coefficient on the canonization rate is close to and insignificantly different from zero.

Table 4, column 2 shows no significant trend in the beatification rate, given the independent variables already discussed. Again, this result is surprising in that the time trend should proxy roughly for the world population of Catholics. Column 3 shows a negative but, not quite statistically significant, effect from the stock of beatifieds on the beatification rate. Another result (not shown) is that the pope's age at the start of his term has a statistically insignificant effect on the beatification rate.

Table 4, column 4 shows that separate dummy variables for each of the last two popes are both positive and statistically significant: 9.94 (s.e.=0.33) for John Paul II and 7.96 (0.71) for Benedict XVI. Thus, unlike for canonizations, we have a clear finding that Benedict XVI has stepped up the beatification rate compared to popes prior to John Paul II. We also find, however, that the coefficient for John Paul II is significantly higher than that for Benedict XVI (p-value=0.007). Thus, although both popes are outliers on beatification, John Paul II is more so than Benedict XVI (at least through 2009).

The regression results reveal a sharp upward movement in canonizations and beatifications under the last two popes and, in this sense, a diminished standard for declaring persons to be blessed. Another possible indicator of lowered standards is the growing tendency to beatify previous popes. Our data set covering the period since 1588 contains only two popes canonized¹⁸—Pius V in 1712 and Pius X in 1954—and three more beatified¹⁹—Innocent XI in 1956, Pius IX in 2000, and John XXIII in 2000. Hence, the two beatifications of popes in 2000 under John Paul II is a large number in historical perspective. Moreover, Benedict XVI is

¹⁸Our data since 1234 contain one additional canonization of a pope—Celestine V (1294-1294), who was canonized in 1313 by Clement V (1305-1314).

¹⁹Our data set, based on Catholic Church (1999), does not include as officially beatified four popes that are sometimes described as having been declared blessed since 1588: Gregory X (1272-1276), Innocent V (1276-1276), Benedict XI (1303-1304), and Urban V (1362-1370).

rumored currently to be considering several recent popes for beatification—Pius XII (a particularly controversial case), John Paul II, Paul VI, and John Paul I.

5. Locations and Characteristics of Blessed Persons

One hypothesis that we want to test is whether the Catholic Church adjusts its policies on canonization and beatification as part of a broader effort to compete with alternative religion providers (or possibly with non-religious pursuits). In the aftermath of the Reformation in the 16th and subsequent centuries, the main threat for adherents was likely Protestant churches (which we would now label as Mainline Protestant), notably in Western Europe but also in Eastern Europe. More recently, the main competition likely stemmed from the spread of Pentecostalism and Evangelicalism through conversions away from traditional forms of Christianity, including Catholicism. This process is important in many regions, including Latin America, Africa, Asia, and North America. Making saints in the contested areas can be one mechanism for enhancing enthusiasm of Catholics for remaining in their religion and, perhaps also, for expanding participation in formal church activities. As recent anecdotal examples, the saints made in Guatemala and Brazil had great appeal for the majority Catholic populations in those countries. Perhaps even more significant as counters to the inflow of Evangelical missionaries and their resources is universal status among the faithful. The saint's site is a pilgrimage destination attracting faithful from all over the world who come to worship and give donations. The saint's site raises the profile of the Catholic Church in that particular country.

We are currently examining data provided by Todd Johnson from the *World Christian Data Base* on Evangelical adherence percentages (along with adherence rates for other religions) by country for 1900, 1950, 1970, and 2000. Our plan is to relate patterns of Evangelical growth

to subsequent beatifications and canonizations by country. If we find a positive linkage, we may be able to interpret this relation as a strategic response of the Catholic Church. In the present paper, our analysis is limited to descriptions of the changing patterns in the geographical distribution of newly beatified and canonized persons. We also assess in a preliminary way changes over time in characteristics of blessed persons with respect to gender, education, urban versus rural background, and so on.

Figures 5 and 6 show variations in the geographical distribution of persons newly beatified and canonized, respectively, for periods from 1592-1699 to 2000-2009. Persons are classified in accordance with residence at time of death. (Western Europe is more dominant in shares of beatification and canonization if persons are classified by residence at birth.) The periods shown in the figures are the 17th century (more precisely, 1592-1699) and the 18th and 19th centuries, followed by 1900-1949 and 1950-1979. These intervals are chosen to comprise roughly similar numbers of persons beatified or canonized. Then the data are grouped by decades from the 1980s to the 2000s. 57 countries or territories have at least one blessed person selected since 1592. The geographical regions that we consider are Italy, Western Europe other than Italy²⁰ (12 countries), Eastern Europe²¹ (14), Asia/Pacific²² (7), Africa²³ (7), Latin America²⁴ (14), and North America (United States and Canada).

Over the full sample (1592-2009), the breakdowns for beatifications are 44.9% Italy, 32.6% non-Italian Western Europe, 7.1% Eastern Europe, 2.7% Asia/Pacific, 1.4% Africa, 7.3% Latin America, and 4.0% North America. For canonizations, the breakdown is similar: 46.7%

²⁰These countries are Austria, Belgium, Denmark, England, France, Germany, Ireland, Netherlands, Portugal, Spain, Sweden, and Switzerland.

²¹The countries (based on current borders) are Belarus, Bosnia, Croatia, Czech Republic, Hungary, Lithuania, Macedonia, Poland, Romania, Russia, Slovakia, Slovenia, and Ukraine,. Malta is also included in this group.

²²This group is Australia, China, India, Israel, Lebanon, Palestine, and Sri Lanka.

²³The countries are Egypt, Ethiopia, Madagascar, Mauritius, Nigeria, South Africa, and Sudan.

²⁴This group is Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Guatemala, Mexico, Nicaragua, Puerto Rico, Peru, Suriname, and Venezuela.

Italy, 33.8% non-Italian Western Europe, 6.6% Eastern Europe, 2.2% Asia/Pacific, 0.7% Africa, 6.6% Latin America, and 3.3% North America.

Figures 5 and 6 show that the concentration of beatifications and canonizations in Western Europe, including Italy, actually strengthened from the 17th century up to around 1950. Only since 1950 is there a trend toward geographical dispersion, possibly linked to the rising competitive threat from Evangelicalism. As an example, the Latin-American share of beatifications went from 0 in 1900-1949 and 1950-1979 to 8% in the 1980s and 11% in the 1990s and 2000s. The share of canonizations went from 0 in 1900-1949, 7% in 1950-1979, and 0 in the 1980s to 5% in the 1990s and 14% in the 2000s. These expansions in the proportion of Latin Americans among persons designated as blessed seem plausibly interpreted as a device to help stem the large loss of membership through conversion into Evangelicalism.

For Asia/Pacific, the pattern is less clear, though the canonization share of 6% in the 2000s is much higher than that in the previous periods. In North America, the surge in beatifications and canonizations took place earlier, with the shares peaking at 11% and 10%, respectively, in the 1980s. This pattern may relate to earlier growth of Evangelicalism in the United States and Canada, compared to that in Latin America and Asia/Pacific.

Another pattern is the expansion of saint-making in Eastern Europe, starting in the 1980s. The beatification share for Eastern Europe went from 2% in 1950-1979 to 5% in the 1980s, 10% in the 1990s, and 15% in the 2000s. The canonization share went from 0 in 1950-1979 to 10% in the 1980s, 26% in the 1990s, and 10% in the 2000s. Part of this pattern must reflect the presence of a Polish pope (John Paul II, chosen in 1978), who had a clear preference for Polish persons as beatifieds and saints. From 1990 to 2004, the Polish share of total beatifications was 6.5% (54% of Eastern European beatifications), while the Polish share in total canonizations was 10.0%

(86% of Eastern European canonizations). However, the overall trend toward Eastern Europe since 1990 may reflect not just Polish loyalty but also the demise of Communism and the consequent rise in opportunities for formal religion in former-Communist countries.

We have conducted an even more preliminary analysis of whether saint-making during the Counter-Reformation period (corresponding to 1592-1699 in our present breakdown of time periods) reflected any tendency to beatify or canonize among countries that were contested between Catholicism and Protestantism. The total number beatified from 1592 to 1699 was 40, of which 6 applied to plausibly contestable countries (1 for Germany, 1 for Switzerland, 1 for France, 2 for Poland, and 1 for Hungary—Netherlands and the current Czech Republic had 0). The total canonized from 1592 to 1699 was 25, and only 3 of these were in the contested areas (1 in France, 1 in Poland, and 1 in Hungary). Thus, a tentative look at the data does not suggest that the Catholic Church relied substantially on designations of blessed persons during the Counter Reformation as a strategic device to compete with Protestantism. A possible explanation is that religious affiliation in the 17th century reflected more the choices of princes than of individual subjects (a system that was formalized with the Peace of Westphalia in 1648).

Figure 7 provides a preliminary look at trends in characteristics of blessed persons. The male share of beatifications and canonizations diminished from the 16th century to the 19th century, falling from 70-80% to 50-60%. However, there has been no clear trend since 1900. Shares with some formal schooling were high throughout, averaging around 80%, and have not changed dramatically over time (despite an expansion of formal schooling in the overall population). Similarly, the share coming from urban areas has averaged nearly 80% and shows no clear trend (despite a global trend toward urbanization).

Some other characteristics that we tabulated about blessed persons are not shown in Figure 7. The age at death averaged 62-63 over the full period and showed no clear trend since the 16th century. Most blessed persons were literate, averaging 96% over the full sample, and this share did not vary greatly over time. The share ever married averaged 8-9% since the 16th century and also displayed no clear trend. Over the full sample, roughly 90% of blessed persons were religious, and this share also did not change in a clear way over time.

6. Future Research

In the present essay, we described a new data set on canonizations and beatifications. The data provide detailed information on blessed persons chosen between 1592 and 2009. We provided descriptive information about aspects of the data and carried out preliminary regression analysis aimed at assessing determinants of rates of canonization and beatification.

Our broader research agenda views saint-making from the perspective of strategic interactions between the Catholic Church and its competitors. For the period since 1900, we plan to focus on the competition implied by growth of Evangelical faiths in various parts of the world. We have assembled information from the *World Christian Data Base* on adherence rates by country for Evangelical and other religions. We plan to analyze whether the changing geographical distribution of beatifications and canonizations can be understood as responses to the competitive threat from the growth of Evangelicalism—which varies by size and timing across countries. We plan also to assess whether changes in the characteristics of blessed persons—by gender, educational background, urban versus rural origin, religious orientation, and so on—relate to strategic choices by the Church.

We plan also to consider the period post-1592 in terms of the Counter-Reformation competition between Catholic and Protestant Churches. This analysis will distinguish countries in terms of their degrees of contestability for converts.

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Table 1 Popes from 1592 to 2009									
ID	Name	Start	End	Tenure (years)	Beatified			Canonized	
					Stock	Duration	Flow	Stock	Flow
229	Clement VIII	1592	1605	13.09	4	105	3	35	2
230	Leo XI	1605	1605	0.07	7	70	0	37	0
231	Paul V	1605	1621	15.72	7	70	13	37	2
232	Gregory XV	1621	1623	2.41	20	36	2	39	5
233	Urban VIII	1623	1644	20.99	17	43	8	44	2
234	Innocent X	1644	1655	10.32	24	40	3	46	0
235	Alexander VII	1655	1667	12.13	27	46	1	46	2
236	Clement IX	1667	1669	2.47	26	58	1	48	2
237	Clement X	1670	1676	6.24	25	60	5	50	5
238	Innocent XI	1676	1689	12.90	25	58	3	55	0
239	Alexander VIII	1689	1691	1.32	28	64	1	55	5
240	Innocent XII	1691	1700	9.22	24	60	0	60	0
241	Clement XI	1700	1721	20.31	24	69	2	60	4
242	Innocent XIII	1721	1724	2.83	22	82	0	64	0
243	Benedict XIII	1724	1730	5.74	22	85	3	64	9
244	Clement XII	1730	1740	9.58	16	66	4	73	4
245	Benedict XIV	1740	1758	17.69	16	66	8	77	4
246	Clement XIII	1758	1769	10.59	20	66	4	81	6
247	Clement XIV	1769	1774	5.32	18	67	2	87	0
248	Pius VI	1775	1799	24.53	20	67	19	87	0
249	Pius VII	1800	1823	23.45	39	53	7	87	4
250	Leo XII	1823	1829	5.38	41	62	5	92	0
251	Pius VIII	1829	1830	1.67	46	61	0	92	0
252	Gregory XVI	1831	1846	15.34	46	63	4	92	5
253	Pius IX	1846	1878	31.67	45	76	16	97	5
254	Leo XIII	1878	1903	25.42	55	88	23	102	11
255	Pius X	1903	1914	11.05	68	80	11	113	4
256	Benedict XV	1914	1922	7.39	75	80	4	117	3
257	Pius XI	1922	1939	17.02	76	86	30	120	24
258	Pius XII	1939	1958	19.62	83	82	38	143	30
259	John XXIII	1958	1963	4.60	92	80	6	173	10
260	Paul VI	1963	1978	15.14	88	81	33	183	16
261	John Paul I	1978	1978	0.09	105	74	0	199	0
262	John Paul II	1978	2005	26.52	105	74	319	199	80
263	Benedict XVI	2005	--	4.65	344	28	52	279	28
--	[as of 2009]	--	--	--	371	30	--	307	--

Notes to Table 1

Tenure is in years, based on number of days as pope. For Beatified: Stock is the cumulative number previously beatified, but not yet canonized, at the start of a pope's term; Duration is the mean years from beatification to the start of the pope's term for the stock of beatified; and Flow is the number beatified during the pope's term. For Canonized: Stock is the cumulative number at the start of a pope's term, and Flow is the number canonized during the pope's term. The number 35 for the canonized stock for Clement VIII (who became pope in 1592) is the number canonized between 1234 and 1588. The year 1234 corresponds to the declaration by Pope Gregory IX (Pope ID number 176) that papal approval was required for canonization. However, the requirements for beatification remained unclear at this time. The year 1588 corresponds to Pope Sixtus V's detailed reform of procedures for canonization and beatification. (No persons were canonized or beatified between 1589 and 1591.) However, the Papacy did not gain complete control of the process until the regime of Urban VIII, who was pope from 1623 to 1644. Of the 272 persons canonized since 1592, the reports on canonizations indicate that 4 were beatified before 1592, and 9 (including 3 for Benedict XVI) were not noted as previously beatified. The number 4 for the stock of beatified for Clement VIII reflects the 4 pre-1592 beatifications among persons canonized since 1592. This treatment assumes that no other persons were officially beatified before 1592. Hence, the cumulative number beatified as of the end of 2009 in our data is 371 (stock of beatified at the end of 2009) + 307 (stock of canonized at the end of 2009) - 9 (canonized from 1592 to 2009 without prior beatification) - 35 (stock of canonized in 1591) = 634 . Of these, 630 were beatified since 1592.

Table 2					
Statistics for Popes' Terms (N=35)					
Variable	Mean	Median	s.d.	Max	Min
Number of beatifications	18.0	4.0	53.8	319	0
Number of canonizations	7.8	4.0	14.7	80	0
Beatifications per year	1.22	0.45	2.65	12.0	0
Canonizations per year	0.80	0.23	1.29	6.02	0
Stock of beatifications (start of term)	48.6	26.0	58.9	344	4
Mean duration of beatification stock (years, start term)	67.0	67.0	16.0	105	28
Median duration of beatification stock (years, start term)	51.7	54.0	20.2	86	12
Stock of canonizations (start of term)	92.4	81.0	56.0	279	35
Tenure of pope (years)	11.8	10.6	8.5	31.7	0.1

Note: See the notes to Table 1 for further discussion. Data are for 35 popes' terms from Clement VIII (start year 1592) to Benedict XVI (incumbent as of 2009). Beatifications (canonizations) per year equal the number of beatifications (canonizations) during a pope's term divided by the pope's tenure in years. Stock of beatifications is the cumulative number beatified, but not yet canonized, at the start of a pope's term. Duration, applying to the stock of beatifications at the start of a pope's term, is the mean years from beatification to the start of the pope's term. Stock of canonizations is the cumulative number at the start of a pope's term.

Table 3				
Regressions for Canonizations per Year by Pope (N=35)				
Independent variable	(1)	(2)	(3)	(4)
constant	-0.08 (0.35)	0.34 (1.71)	-0.08 (0.35)	-0.04 (0.37)
Pope tenure (years)	-0.0229* (0.0095)	-0.0218* (0.0106)	-0.0234* (0.0099)	-0.0235* (0.0098)
Stock of Beatified	0.0123** (0.0021)	0.0129** (0.0033)	0.0116** (0.0038)	0.0131** (0.0033)
Duration of Beatified Stock (years)	0.0063 (0.0047)	0.0070 (0.0056)	0.0057 (0.0054)	0.0055 (0.0054)
Last two Popes (dummy)	1.93** (0.35)	1.92** (0.36)	1.89** (0.38)	--
Trend (years)	--	-0.0003 (0.0011)	--	--
Stock of Canonized	--	--	0.0008 (0.0038)	--
John Paul II, 1978-2005 (dummy)	--	--	--	1.90** (0.36)
Benedict XVI, 2005-2009 (dummy)	--	--	--	1.52 (1.31)
R-squared	0.86	0.86	0.86	0.86
standard error of estimate	0.45	0.45	0.45	0.45

*Significant at 5% level. **Significant at 1% level.

Note: 35 observations, corresponding to reign's of popes from Clement VIII (1592-1605) to Benedict XVI (2005-2009). Regressions are by weighted least squares, with observations weighted by the square root of the Pope's tenure in years (see n.14 in the text). Standard errors are in parentheses. Dependent variable is number canonized per year by pope. The p-value for a test of equal coefficients on the dummy variables for John Paul II and Benedict XVI is 0.75. The variable "trend" is the average of the start and end years for a pope's term. The R^2 and standard error of estimate are weighted statistics.

Independent variable	(1)	(2)	(3)	(4)
constant	-0.34 (0.23)	-0.28 (3.01)	-0.41 (0.23)	-0.32 (0.21)
Pope tenure (years)	0.0028 (0.0092)	0.0029 (0.0108)	-0.0028 (0.0094)	-0.0050 (0.0087)
Stock of Canonized	0.0115** (0.0020)	0.0116 (0.0059)	0.0162** (0.0032)	0.0128** (0.0018)
Last two Popes (dummy)	9.76** (0.36)	9.76** (0.48)	9.85** (0.35)	--
Trend (years)	--	0.0000 (0.0020)	--	--
Stock of Beatified	--	--	-0.0064 (0.0034)	--
John Paul II, 1978-2005 (dummy)	--	--	--	9.94** (0.33)
Benedict XVI, 2005-2009 (dummy)	--	--	--	7.96** (0.71)
R-squared	0.96	0.96	0.96	0.96
standard error of estimate	0.58	0.58	0.58	0.57

*Significant at 5% level. **Significant at 1% level.

Note: See the notes to Table 3. Dependent variable is number beatified per year by pope. The p-value for a test of equal coefficients on the dummy variables for John Paul II and Benedict XVI is 0.007.

Figure 1

**Beatifications per Year
(popes with 4 or more beatifications)**

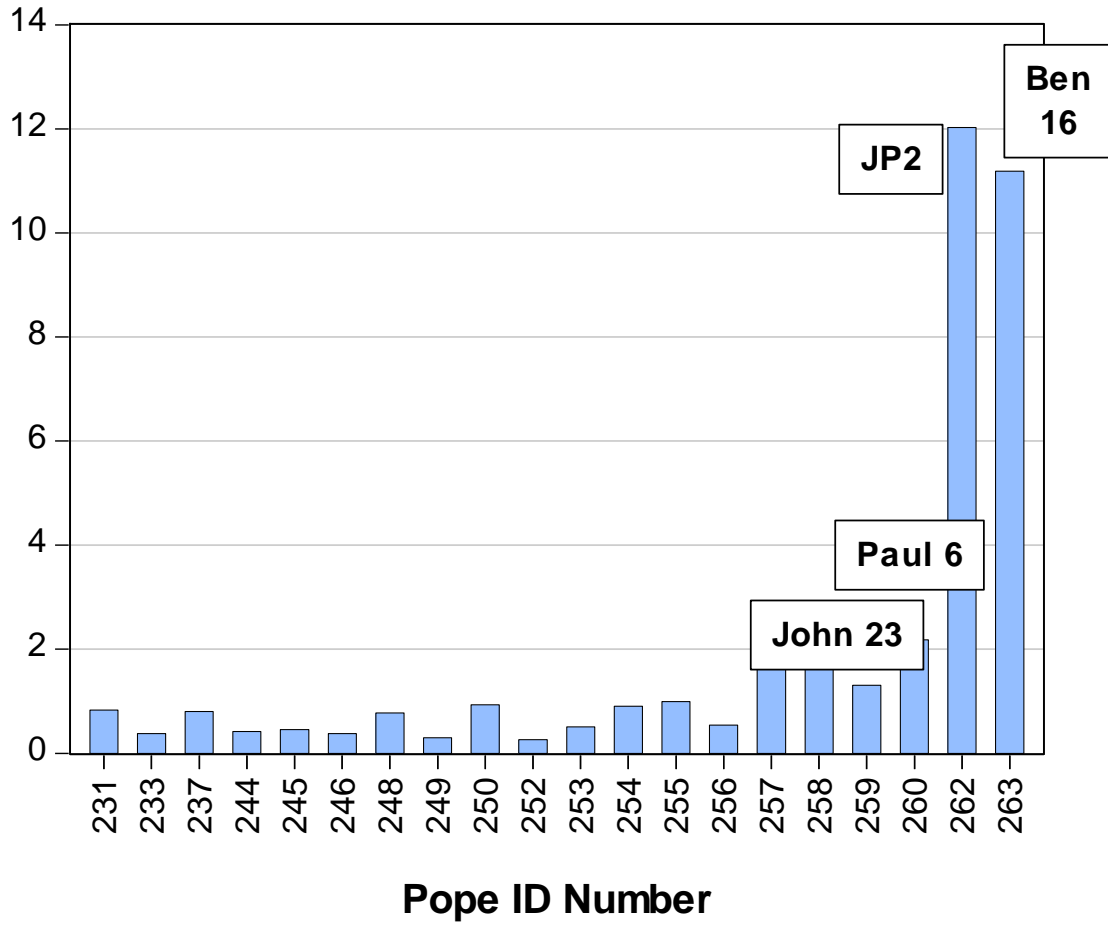


Figure 2

**Canonizations per Year
(popes with 4 or more canonizations)**

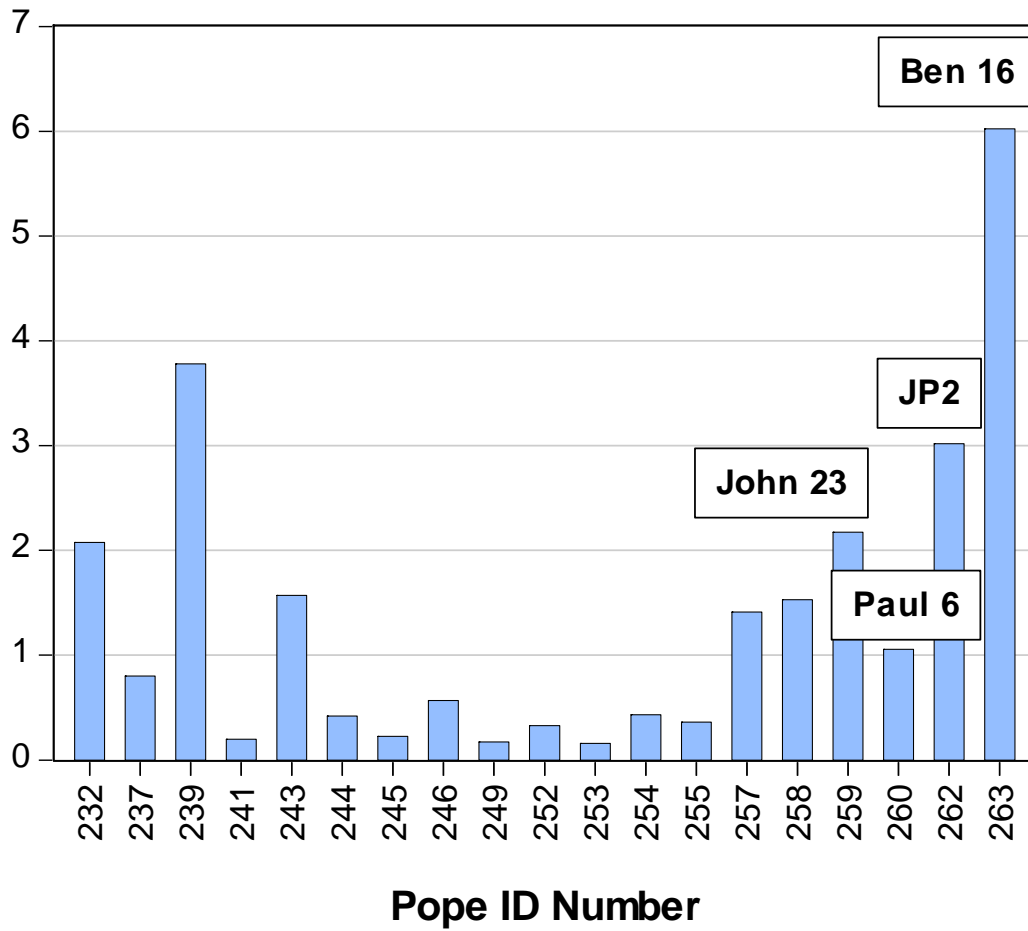


Figure 3

**Years from Death to Beatification
(popes with 4 or more beatifications)**

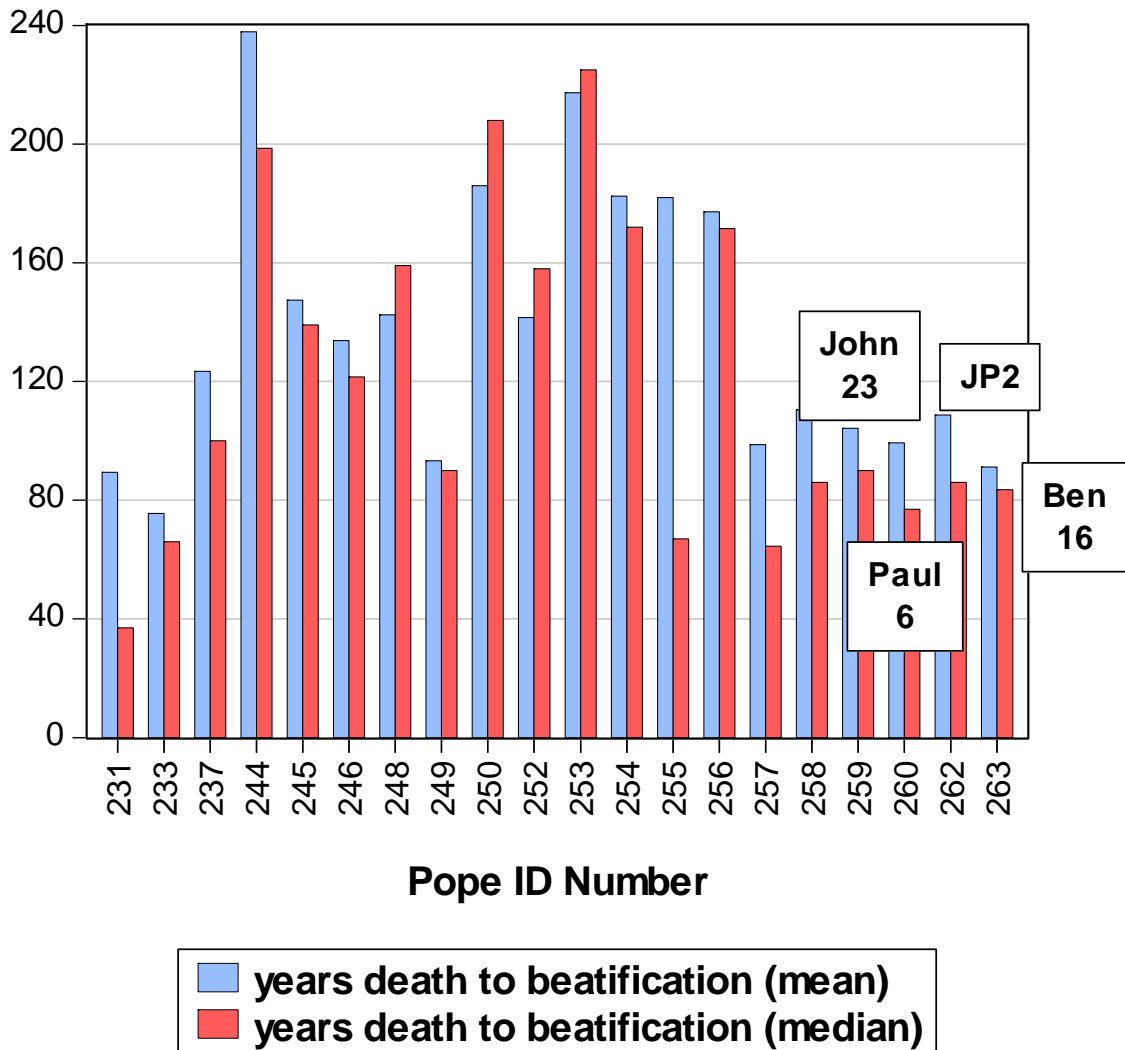
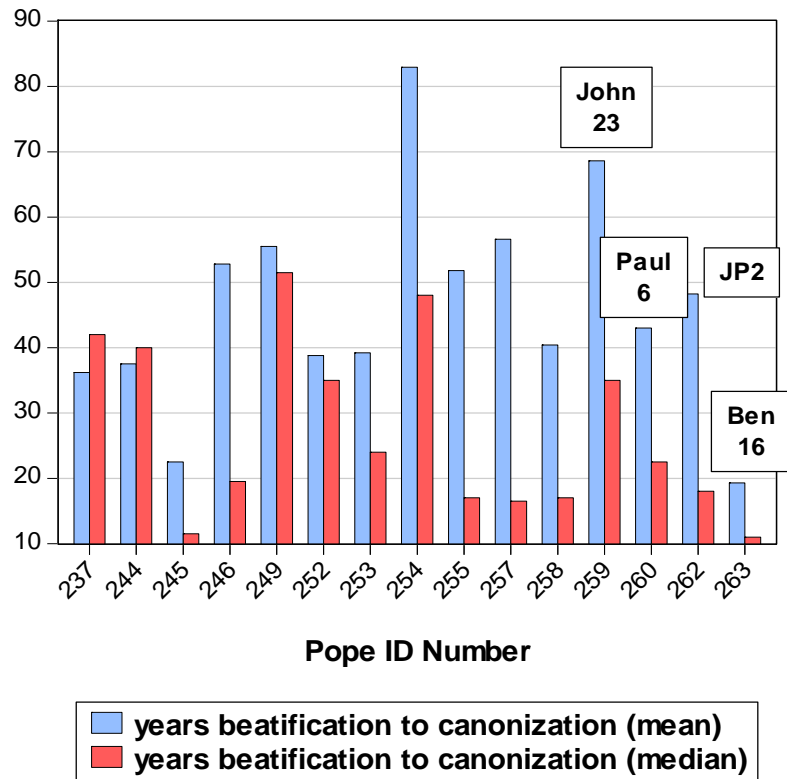


Figure 4

**Years from Beatification to Canonization
(popes with 4 or more canonizations, among previously beatified)**



**Figure
5**

**Geographical Distribution of Beatifications, 1592-2009
(based on residence at death)**

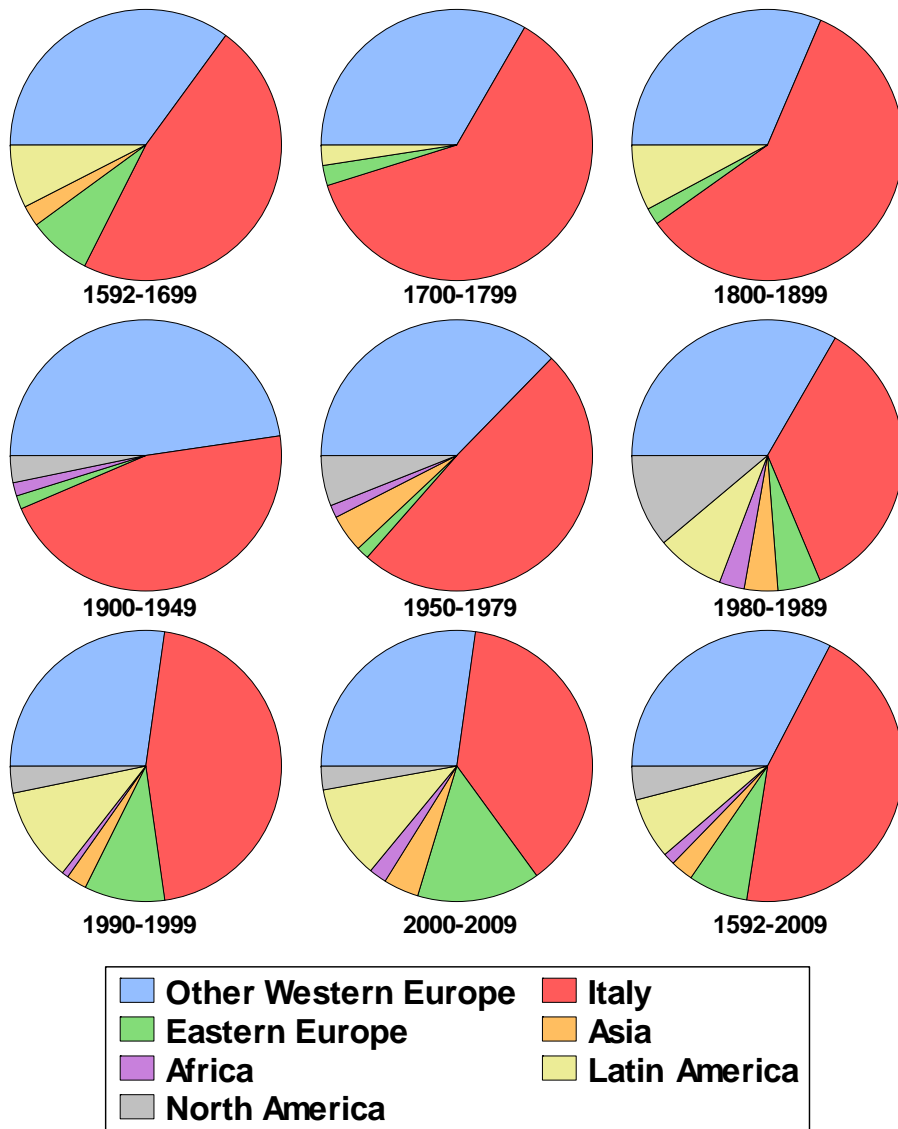


Figure 6

**Geographical Distribution of Canonizations, 1592-2009
(based on residence at death)**

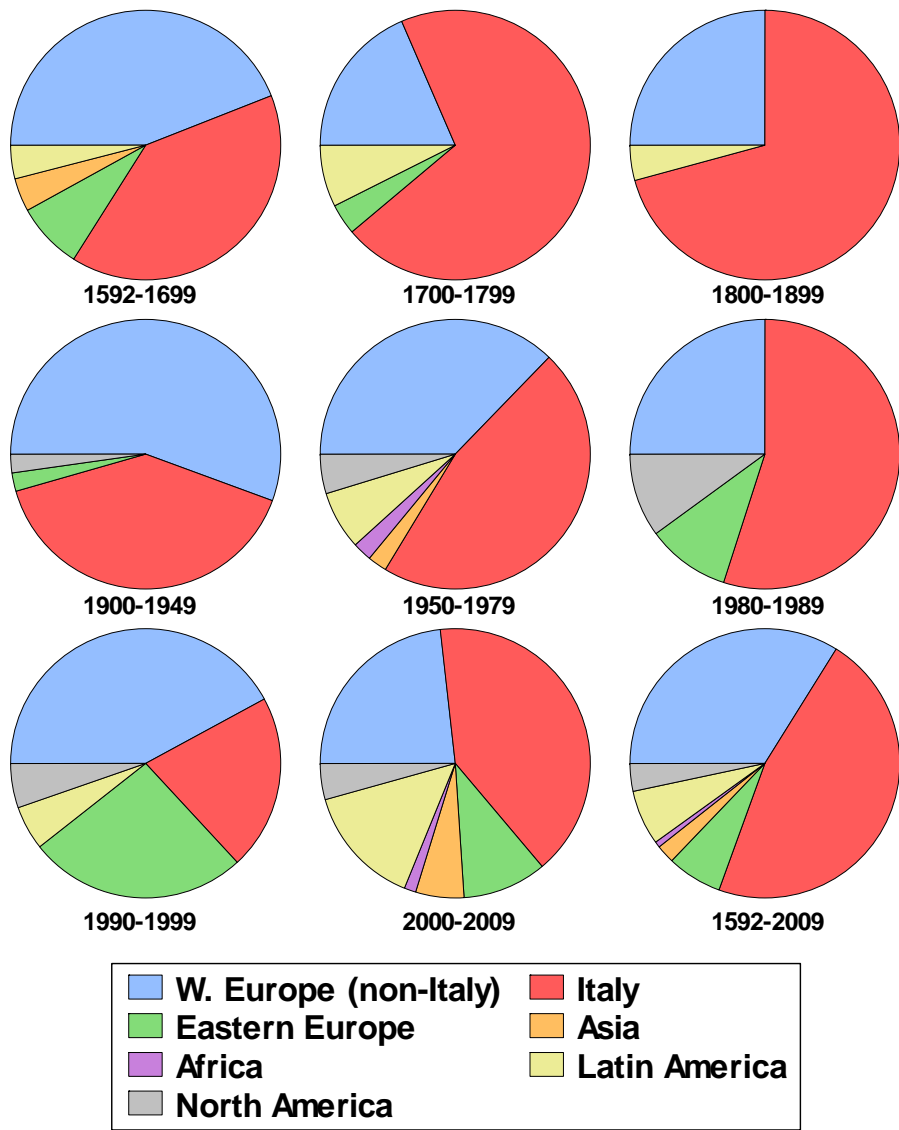


Figure 7

**Beatifications and Canonizations:
Fractions Male, Schooled, and Urban by Periods since 1592**

