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Substitution and Stigma: Evidence on Religious Competition from the Catholic Sex-Abuse Scandal

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ABSTRACT

This paper considers substituting one charitable activity for another in the context of religious practice. I examine the impact of the Catholic Church sex-abuse scandal on both Catholic and non-Catholic religiosity. I find that the scandal led to a 2-million-member fall in the Catholic population that was compensated by an increase in non-Catholic participation and by an increase in non-affiliation. Back-of-the-envelope calculations suggest the scandal generated over 3 billion dollars in donations to non-Catholic faiths. Those substituting out of Catholicism frequently chose highly dissimilar alternatives; for example, Baptist churches gained significantly from the scandal while the Episcopal Church did not. These results challenge several theories of religious participation and suggest that regulatory policies or other shocks specific to one religious group could have important spillover effects on other religious groups.

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Introduction

Religious practice is an important social activity throughout most of the world, including the United States. Roughly half of Americans attend religious services each month and gifts to religious organizations makes up a plurality, and by some estimates a majority, of all charitable giving, with over $100 billion in gifts to religious organizations annually. The study of religion has a long history in the social sciences, including extensive discussion by Adam Smith in the *Wealth of Nations*, and in recent years economists have grown increasingly interested in religious participation.[1]

Smith's work considered the competitive aspects of religious practice—the possibility that religious organizations might compete for members who are willing to substitute between traditions—and this remains an area of interest today. Empirical work on religious competition usually proceeds by making cross-sectional comparisons of communities with different religious markets; a challenge with this approach is that empirical results may be driven not by competition but by other cross-sectional differences between communities. Frequently researchers address this type of identification problem by exploiting a "shock" that creates variation in behavior between communities and over time. But that approach has not been used in this area.

The goal of this paper is to investigate substitution between religious groups by exploiting a large shock: the Catholic sex-abuse scandal. In early 2002, the Boston Globe published a series of articles detailing the sexual abuse of minors by clergy in the Catholic Church. The articles created a firestorm of criticism against the Catholic Church and led to thousands of accusations of sexual abuse by current and former Catholics. The magnitude of this crisis, along with the size of the Catholic Church itself, made this scandal unprecedented in the history of American religion. In this paper, I consider the impact this shock had on religious participation, and in particular I investigate how the scandal impacted *non-Catholic* religious participation.

Such an investigation is related not only to work on religion, but also to a body of research in economics that considers substitution between charitable activities. Work here has investigated

[1] For an introduction to economic work on religion, see Iannaccone (1998).

substitution between temporal and monetary donations to charity (Brown and Lankford, 1992; Andreoni, Gale, and Scholz, 1996; Duncan, 1999; and Feldman, 2010), and substitution between different religious activities (e.g., Gruber, 2004; Sullivan, 1985; Clain and Zech 1999). The particular setting for substitution considered in this paper is not only of interest given past work on substitution between charitable activities but also because religious practice is an activity where policies are frequently discriminatory and thus substitution is especially important to consider. Regulation of religious markets is extremely common; most nations regulate religious practice with policies that subsidize or discriminate against particular groups (cf. Barro and McCleary, 2005; and Fox, 2007). As discussed in section 2, the effects of a policy that targets certain religious groups will depend upon whether adherents view different groups as substitutable. This paper explores the possibility of substitution between religious groups while contributing novel empirical evidence of substitution between charitable activities more generally.

As with prior work examining substitution between different charitable behaviors, it is unclear whether or not one should see strong substitution here. If Catholic adherents view other religious traditions as substitutable with their own, then the scandal could benefit competitors of the Catholic Church. But if other groups serve as poor substitutes for Catholicism and if the scandal "stigmatizes" religion in general, then the scandal could have a negative effect on other faiths.

I find that this shock led to a decrease in participation in the Catholic Church, causing a decline of 2 million members, or about 3 percent of all Catholics. This decline was offset by an increase in participation in non-Catholic religious traditions. Back-of-the envelope calculations suggest donations to non-Catholic religious groups increased by $3 billion (in year 2000 dollars) or more in the half-decade following the scandal. Over time, the scandal also led to a rise in religious non-affiliation. These results are observed in both survey and administrative data from several organizations and these results do not appear to be driven by pre-existing trends in adherence to Catholicism or other traditions. Ultimately, the scandal appears to have created both gains in non-affiliation and gains for certain non-Catholic faiths.

I then consider which groups gained from the scandal. In terms of religious content and structure, the Catholic tradition is closer to certain traditions (e.g., Anglican or Episcopalian) than others, and thus

one might expect the scandal to lead to gains for these churches particularly. Interestingly, the evidence suggests the opposite. Those leaving the Catholic Church substitute into a wide variety of alternatives and often chose relatively distant faith traditions. For example, the results repeatedly indicate that *Baptist* churches experienced large gains from the scandal, a striking result given that Baptists are arguably the Protestant group most distant from Catholics along a number of dimensions. One might wonder if such radical re-affiliation is driven by the scandal itself: Catholics incensed by the scandal choose a very-not-Catholic alternative to "punish" their church. This possibility is considered in section 3 below, but the findings here suggest that radical substitution may be common even when substitution is driven by mundane events.

The results thus indicate that a shock to one religious group may cause substitution with highly dissimilar groups. These results present a challenge to prior work on religious competition and substitution, much of which is based on frameworks that would struggle to anticipate the heterogeneous and dramatic substitution patterns documented here. At least one well-known model of religious behavior may be consistent with these results, however; this is discussed in the conclusions. The findings of this paper also provide clear evidence of substitution between charitable alternatives in a particular setting, and indicate that policies or shocks pertaining to a particular religion could have important impacts on participation in highly dissimilar religions.

The remainder of the paper is organized as follows. Section 1 provides an overview of the scandal. Section 2 discusses the potential effects of the scandal. Section 3 presents the empirical evidence. Section 4 concludes.

1. The Scandal

This section provides background on the Catholic Church sex abuse scandal in the United States in 2002 and the years after. There have been similar international episodes in recent years; the focus of this paper is on US data and for brevity this discussion considers the US case. The information here was taken from several sources, including the Catholic Almanac, the John Jay Report (2004), a report from the

United States Conference of Catholic Bishops (2004), and the 2005 Philadelphia Grand Jury Report.

Table 1 provides a brief timeline outlining some of the most notable events related to the scandal. Prior to 2002, the Catholic Church had dealt with several instances of sexual abuse by clergy. As early as 1985, the Catholic Church had considered appropriate procedures to prevent and respond to abuse. While there were several instances where allegations of abuse drew media attention (especially in the early 1990s), these episodes did relatively little to impugn the Catholic Church's reputation.

On January 6, 2002, the Boston Globe published a story describing the career of defrocked priest John Geoghan and his long history of sexually-abusing children. The article indicated that, even though church leaders were aware of Geoghan's history of abuse, they continued to place Geoghan in positions where he had access to children. The article was followed by a series of stories on sexual abuse by clergy in the Catholic Church. The Globe's coverage created a firestorm of criticism against the Catholic Church and across the country hundreds of accusations of sexual abuse against clergy were made.

To study the impact of the resultant crisis, this paper needs a measure of the crisis' intensity. The measure used will be the number of allegations of abuse made in a particular state and year; here the term "allegation" refers to a church official being publicly accused of sexual abuse for the first time. Data on allegations were collected with the assistance of Bishop Accountability, an organization dedicated to disseminating information on the scandal. Allegations are by location of the allegation—if a priest retires and moves to Florida, but is accused in Ohio of past abuse, the allegation is coded to Ohio and is coded at the time the allegation is made (not when the abuse occurred). The allegation data were collected in late 2009.

Beyond being straightforward and easily interpretable, the number of allegations will provide important information on the severity of the scandal across place and time. Many contemporary news accounts of the scandal refer to the number allegations made when describing the severity of the scandal in a particular part of the country; e.g., Green and Woodward (2008), Holland (2002), Kim, (2004), and Smith (2009). Many allegations were made long after the alleged abuse had occurred; by basing the allegation on the year when the allegation was brought to the public's attention (rather than the year when

the abuse occurred) the measure of allegation used here better reflects media coverage and public awareness of the scandal.[2]

Further, this measure of the scandal may also better reflect public awareness of the scandal than would other outcomes such as arrests or convictions of accused priests. Many of the accused priests were deceased at the time of the allegations (and thus they could not be arrested), and even those still alive may have been subject to lengthy court trials which would take years to complete, by which time the scandal may have largely passed. Also, even if a priest was eventually acquitted, the original accusation itself could still have had a strong impact on religiosity.[3] Allegations also have the benefit that they can be made regardless of the legal institutions in a particular state; as discussed in Eisenberg (2002), prosecutorial outcomes here may be significantly impacted by variation in the legal environment (such as statutes of limitations). In addition, the measure of the scandal used here varies over states and time, allowing a comparison of parts of the country with a high number of allegations to other parts of the country before and after the scandal began.

Figure 1 shows year-by-year the number of allegations of sexual abuse made against clergy. The figure shows a dramatic spike in allegations starting in 2002, with nearly a thousand officials being newly accused of abuse. The figure indicates that the crisis continued after 2002 with additional allegations. In 2004, a report on the scandal (commonly referred to as the John Jay Report) estimated that roughly 4% of priests who had been active between 1950 and 2000 had been accused of sexual abuse. The report indicated that 81 percent of the allegations of abuse were made by males, and nearly 80 percent of victims were abused between the ages of 11 and 17. The plurality of abuse incidents occurred in the 1970s.

The scandal hit some areas of the country harder than others. Table 2 shows the number Catholic officials accused for abuse for the first time in 2002, by state. The hardest hit state by far was

[2] The typical allegation recorded by Bishop Accountability includes primary examples of media coverage surrounding the allegation (news paper articles, documentation of television news shows, etc.).
[3] One might wonder whether many of the accusations were in fact valid. While some of allegations were found to be without merit, there were many cases where the validity of the allegations was undisputed (e.g., with offenders acknowledging their guilt). The distinction may be unimportant if accusations themselves affect tastes for religious practice.

Massachusetts, with nearly 140 officials accused. The table shows that the scandal varied considerably in the number of accusations made in different states and that "hard-hit" states were located across various regions of the country. Southern states and mountain states typically saw fewer allegations while states from the West Coast, the Midwest, and Northeast saw more. The geographic pattern in Table 2 matches past accounts of the scandal. For example, Lavoie (2004) refers to Boston as the "epicenter" of the scandal and Goodstein (2003) concludes that, while every region of the country was seriously affected, the scandal was most extensive in the Northeast and Midwest. Other observers (Schreiner, 2003; Lytton, 2007; Radin and Vashnav, 2005) also conclude that areas with high levels of allegations in Table 2 (such as New England, California, and Kentucky) were the parts of the country hardest hit by the scandal.

Figure 2 presents a simple depiction of how the scandal varied across different parts of the country over time. The figure presents the same information as in Figure 1, but presents data for two different groups of states: those "hardest hit" by the scandal (with 30 or more accusations in Table 2) and those less-hard hit. Both areas saw a surge in accusations in 2002; hard hit states saw both a much larger surge in accusations in 2002 and a higher level of new allegations in the years afterwards.

The crisis shown in Figures 1 and 2 was confined to the Catholic Church; there was no concomitant wave of abuse allegations in other religious denominations (or other institutions). Some observers, such as the historian Philip Jenkins (2003), have argued that the exclusively-Catholic nature of the scandal reflected an anti-Catholic media bias. Alternately, some observers contend that the focus on the Catholic Church reflects the scope of abuse, the decisions of Catholic authorities to relocate abusers, and a perceived slowness by the church to respond to the scandal (cf. the Philadelphia Grand Jury Report, 2005). Regardless, the scandal did not lead to other sex-abuse scandals in other organizations; it was a "denomination-specific" shock. Of course, that does not suggest that the shock had no consequence for non-Catholic religious participation. The following section discusses the potential impact of the shock on non-Catholic religious participation.

2. Impact of the Scandal on non-Catholic Participation

It is unclear whether the scandal would be beneficial or injurious to non-Catholic participation. If the opportunity cost of being Catholic is joining some other faith tradition, then the scandal could benefit competitors of the Catholic Church.[4] But if the scandal impacts the legitimacy of not just the Catholic Church but also other religious institutions, than the scandal could be a "tide that sinks all boats." This might happen, for example, if non-Catholics suddenly become concerned about the possibility of abuse from their own religious leaders, or become disillusioned of all forms of religious or moral authority in the face of the scandal.[5]

The idea that religious institutions impact each others' legitimacy was made (outside of economics) in the famous work of Peter Berger (1969), who argued that the "de-legitimation" of religion created by competition was a salient force of secularization and of modern religion in general. Evidence of a stigma effect, where non-Catholic participation falls in the face of the scandal, would be strong evidence that a negative shock to one institution causes a decrease in the perceived legitimacy of other religious institutions. Alternately, evidence that other faiths gain adherents from the scandal would be evidence of against such a stigma affect. The work here will thus provide a novel test of how one religious organization's legitimacy impacts the outcomes of other organizations.

Such a test will also be useful to the economic literature attempting to depict how religious groups interact. This is an area of work that has a prominent place in the economic study of religion; Chaves and Gorski (2001: 261) write that this area is "foundational to the larger project of applying economic theory to religion." A large body of work attempts to study religious competition and its impact

[4] There is some anecdotal evidence that this sort of competitive response occurred. For example, Rick Warren, the pastor of Saddleback Church (a Southern Baptist congregation that is one of the largest churches in the world), has noted that his church currently downplays any denominational affiliation because doing so promotes evangelism—particularly to those with a Catholic background (Warner, 2005).

[5] There is also anecdotal evidence that denominations may have feared such a negative impact on their own organizations. For example, following the scandal, the Presbyterian Church USA published a pamphlet titled, "We Won't Let it Happen Here!" outlining a policy to guide Church leaders in creating a "Safe Church" for children and church members (Rifner and Smith, 2005).

on individuals' decisions.[6] The vast majority of this work uses cross-sections of data to compare communities with different types of religious markets; these studies are quite interesting but face a challenge of identifying the effects of competition across communities separately from other differences across communities.[7]

This paper will explore interactions between religious organizations by using the Catholic Church sex-abuse scandal as a shock. One advantage to considering a shock to the Catholic Church is that the Catholic Church has a presence in religious communities in various parts of the country, allowing for an investigation that is not limited to a particular region. As discussed in the prior section, the onset of the shock at the start of 2002 was sudden, and there was considerable cross-sectional variation in the number of allegations of abuse that were made in different areas. By comparing places hard-hit by the scandal to other places, before, during, and after the shock, this paper will rely on panel variation in the data, rather than simple cross sectional variation. This approach also allows robustness tests to be considered that would be unavailable in simple cross-sectional or time-series settings (such as tests for differential trends in adherence that preceded the shock); these are described more in the next section.

A small literature in economics has considered the impact of the scandal on different outcomes. Dills and Hernández-Julián (forthcoming) and Brinig and Garnett (2010) focus primarily on Catholic schools and find that the scandal led to a decrease in the Catholic schooling population. Bottan and Perez Truglia (2011) find that social capital (e.g., total religious organizations or total charitable giving) is decreased by the scandal. This paper focuses on documenting substitution away from Catholicism (or lack thereof) in response to the scandal to improve our understanding of how religious groups may interact. Several studies, including Iannaccone, Finke, and Stark (1997) and Hungerman (2010) have proposed

[6] Examples include McBride (2010), Montgomery (2003), Gruber (2005), Eswaran (2009), North and Staha (2004), Trawick and Lile (2007), Perl and Olson (2000), Zaleski and Zech (1995), Finke, Guest, and Stark (1996), Stark and Iannaccone (1994), Hamberg and Pettersson (1994), Feldman and Ruffle (2008), Borgonovi (2008), Bruce (1992), Breault (1989a, b), Olson (1999), Olson and Hadaway (1999), McCleary and Barro (2006), Goff and Trawick (2008), and Chaves and Cann (1992).

[7] A much-noted paper by Voas, Crockett, and Olson (2002) also criticizes empirical work in this area. While their critique is ostensibly focused on the precise variables that researchers use to depict religious markets, the concerns they raise are ultimately driven by a lack of identification and as such are comparable to the issues described here.

using a religious-market shock to study how religious organizations interact, but I know of no rigorous study using such a methodology in this area.[8]

Moreover, this paper finds evidence of substitution, with those leaving the Catholic church choosing a wide variety of alternatives that are frequently distant from Catholicism; this result appears to be true not just for those substituting because of the scandal but for those substituting out of Catholicism generally. This contrasts with the well-known theory of religious or spiritual capital, which argues that since religious groups require investments (such as gaining familiarity with doctrine and rituals) substitution should be seen primarily between similar groups. Indeed, even critics of the spiritual capital model often accept the premise of similarity in substitution while disputing the model's ability to explain such behavior, e.g., Bruce (2010).[9] The results may also inform work modeling religious competition as spatial competition (Iyer, Velu, Xue, and Chakravarty, 2010; McBride, 2008 and 2010; Barros and Garoupa, 2002; Eswaran, 2009). Such models have proven useful for studying religious markets, but these models would typically depict Catholic adherents—those who are spatially grouped "near" the Catholic Church—as having similar tastes for a religious commodity, which would again suggest that those substituting away from a common faith would make relatively homogeneous and non-radical substitutions. Future work should consider whether the standard spatial model can accommodate the substitution documented here; possible avenues for such accommodation are briefly mentioned in the conclusions.

The results here are relevant not only for theories of religious participation and competition, but also for prior work on substitution between religious alternatives. As mentioned in the introduction, a number of studies have investigated whether different types of charitable or altruistic activities can substitute for each other. Brian Duncan (1999) presents a model where different charitable activities are

[8] Some studies have used secular shocks to study religious/secular interaction; examples include Cohen-Zada and Sander (2010); Gerber, Gruber, and Hungerman (2010); Gruber and Hungerman (2008); and Lee (2010).
[9] See the seminal work of Iannaccone (1990) for an introduction to religious capital and a discussion of its implications for substitution. While the findings of this paper on substitution are in contrast to the predictions of Iannaccone's model, his framework has led to valuable insights in contexts other than substitution; examples include Bisin and Verdier (2001); Bisin, Topa, and Verdier (2004); and Fan (2008).

viewed as perfectly substitutable with each other. Brown and Lankford (1991) and Andreoni, Gale, and Scholz (1996) find evidence that money and time are gross complements with respect to price shocks, although Feldman (2010) argues that there may be challenges to interpreting cross-price responses as conclusive evidence of complements here. Gruber (2004) considers substitution between different types of religious activities by using variation in subsidies for charitable giving to compare religious donations to religious attendance.

Instead of exploring substitution between two different types of charitable activities (such as donating time and money), this paper considers substitution between different religious organizations. This is an important venue for exploring substitution as religious practice is an activity where policies frequently favor one group at an expense of another. Barro and McCleary (2005) note that regulation of religious groups is extremely common, with nearly half of all countries maintaining a state religion and many more countries regulating or discouraging religious practice for a particular tradition or set of traditions. As shown in Fox (2007), as of 2002 nearly three-quarters of all countries discriminated against certain religious traditions and the prevalence of discrimination increased between 1990 and 2002.[10] Prior work has established that religious participation can have important social benefits;[11] regulation of religiosity could thus have potentially far-reaching consequences even if the regulation were group-specific. For example, policies that discouraged practice in a particular religious group could lead to large declines in total adherence if such policies stigmatized or de-legitimated other groups as well. Absent such stigma effects, the impact of group-specific policies on total adherence would depend upon whether individuals are willing to substitute between different faiths. In an extreme case of full-substitution, a policy that restricted religious practice for one faith may have a negligible affect on overall adherence in the population.

[10] See also Barrett, Kurian, and Johnson (2001) for information on religious regulation.
[11] See Johnson, Tompkins, and Webb (2002) for a good introduction to work on the benefits of religious practice. Other work suggesting important gains from increased religious adherence include Gruber and Hungerman (2008); Hungerman, (2011); Putnam (1995); and Cohen-Zada and Sander (2010).

The substitution identified in this paper is driven by a particular shock to the Catholic Church. However, the findings here depict similarities between substitution from the scandal and substitution driven by other factors. Additionally, Barro, Hwang, and McCleary (2010) find that conversion behavior appears to be similar across highly Catholic groups and highly Protestant groups (as well as Jewish, Orthodox, and Hindu groups), suggesting that results using a Catholic-specific shock may be informative of behavior for a variety of adherents. Thus, while the results here are driven by a particular shock to a particular faith, there is reason to expect that the findings here may inform shocks in alternate contexts. The next section discusses the impact of the shock on Catholic and other participation.

3. Empirical Results

3A. Impact on Religious Participation

Figure 3 provides a simple time-series depiction of Catholic membership before and after the scandal began.[12] The figure shows, for each year from 1988 to 2006, the total Catholic population in the continental United States. The data here are taken from the Official Catholic Directory, or OCD.[13] Starting in 2003—the year after the scandal began—the figure shows a striking plateau in membership growth.[14] This fits with the results in Dills and Hernández-Julián (forthcoming), Brinig and Garnett (2010), and Bottan and Perez Truglia (2011) who all find that the scandal lowered Catholic participation.[15]

[12] The key variation used below is panel variation. To the extent that the scandal was a "national" crisis and the results depicted in Figure 3 are driven by pure time-series variation, the results below will produce estimates biased towards zero. Fortunately, as discussed earlier and as shown in Table 2, there was variation in the number of allegations across states and observers have concluded that the scandal was more extensive in some places than in others.

[13] When compiling these data one notable typo in the directory came up, which we confirmed in discussions with the OCD publisher: in the 2006 OCD, the published figures for the Catholic population in Boston and the entire population of Boston were flipped, resulting in a one-time jump in the total Catholic population of several million people. The data in Figure 2 use the correct measure of Catholic population for this year.

[14] The figure also shows a flattening of membership in the early 1990s; this corresponds with a brief surge in allegations in 1993 as shown in Figure 1.

[15] As mentioned before, Dills and Hernández-Julián, and Brinig and Garnett focus on Catholic schools. Bottan and Perez-Truglia's paper builds upon the antecedent findings of this paper to consider the effect of the scandal on overall social capital, but they revisit the estimates below by regressing adherence on the total number of allegations

While visually striking, Figure 3 gives no information about trends for other religious groups. Additionally, Figure 3 relies on time-series data and does not exploit the fact that the scandal was more extensive in particular areas of the country. Further, if individuals leave the Catholic Church in response to the scandal, they would typically still be counted as members in administrative Catholic data and such defections would be omitted from Figure 3.

The General Social Survey, or GSS, allows an exploration of the scandal that overcomes these issues. The GSS is the longest-running nationally-representative survey in the United States that asks about religious participation. For the past two decades the GSS has typically been conducted biennially; the waves of the GSS survey used here are the 1993, 1994, 1996, 1998, 2000, 2002, 2004, and 2006 waves, totaling nearly 22,000 observations. In addition to asking about religious participation, the GSS also collects information on basic socioeconomic characteristics and (in the private-use version of the data) information on state of residence.

Respondents in the GSS are asked "what is your religious preference?" Answers to this question will be used to estimate:

$$relig_{isy} = \beta allegations_{sy} + \delta X_{isy} + \phi_s + \theta_y + \varepsilon_{isy}, \quad (1)$$

where for individual *i* located in state *s* in year *y*, the dependent variable *relig* is a dummy indicating self-reported religiosity (described more below), *allegations* is the number of Catholic officials accused of sexual abuse for the first time,[16] X_{isy} is a set of individual and community controls including a dummy for gender, a set of dummies for whether an individual's income is in the bottom or top quartile for all GSS respondents in a given year, dummies for race, years of educational attainment, a set of dummy variables for marital status, a set of dummy variables for age, and state-level controls for percent of the population Hispanic, percent black, the rate of insured unemployment, and per-capita disposable income. The term ϕ_s represents a set of state dummy variables, θ_y represents a set of year dummy variables, and

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that have ever been made in an individuals' community and find that Catholic adherence falls as total allegations increase.

[16] Using allegations per-capita, instead of total allegations, does not change the basic findings below.

ε_{isy} is noise. Robustness tests that add extra controls will also be reported, but equation (1) represents the baseline regression specification.

The regressions below use three different versions of the dependent variable $relig_{isy}$. In the first case the dependent variable is a dummy that equals unity if a respondent reports their religion as Catholic (about 25% of the sample), and zero otherwise. In the second case the dependent variable equals unity if a respondent reports their religious tradition as *none* (i.e., no religious tradition, about 13% of the sample), and zero otherwise. In the third case, the dependent variable will equal unity if an individual names a religious preference other than Catholic and none; that is, an individual is religious-but-not-Catholic (about 62% of the sample). In each case the coefficient of interest is β, which will indicate how an increase in allegations of abuse by Catholic clergy impacts religious participation.

Table 3 reports linear-probability estimates of equation (1).[17] Robust standard errors clustered by state are reported in brackets. For readability, the variable allegations has been divided by 10; the coefficient reports the effect of 10 new allegations. The mean number of allegations in the regression sample is 8.1; for the years after 2001 the mean is 15.5.

The first column reports estimates from a regression on a dummy for Catholic affiliation. The coefficient is negative and statistically significant, suggesting that 10 new allegations of abuse lower the likelihood that an individual in the GSS reports their affiliation as Catholic by about half a percentage point. As mentioned above, the average number of allegations from 2002 on is about 15, suggesting about a 0.75 percentage-point decline in the number of individuals in the total population who are Catholic. As Catholics make up about 25 percent of the population in the GSS, this decline corresponds to approximately a three percent decline in the Catholic population, $0.75/25 = 0.03$, or a decline of a little more than 2 million members.

Columns 2 and 3 investigate how the scandal affected other religious groups. The results indicate that the decline in Catholic affiliation is compensated by a rise in affiliation with other religious

[17] Probit estimates provide similar results.

traditions. The estimates in Column 2 provide no evidence that sexual allegations increase the fraction of the population without a religious affiliation. These results suggest that Catholics leaving in response to the scandal substituted into other traditions (at least in the short run) and that there was not a significant stigma effect that lowered participation in non-Catholic traditions.

The next three columns in Table 3 provide a test of whether the results are driven by pre-existing trends in the data. For example, certain regions of the country (such as the Northeast) may have already been experiencing an erosion of Catholic support, and places where Catholic support had fallen most might be places where individuals would be especially willing to make allegations of abuse public. To investigate this type of concern, the regressions in columns 4, 5, and 6 introduce controls for future allegations. For example, the 2-year-lead future allegations variable reports, for state *s* in year *y*, the number of allegations that occur in that state in the year $y + 2$. The regressions also include a control for allegations 3 years and 4 years in the future to capture any pre-existing trend in religious adherence that may have anticipated the scandal.[18] If the results in the first three columns of the table are merely driven by declines in Catholicism that encouraged the spread of the scandal, then the inclusion of these lead-allegation controls should attenuate the coefficients on current allegations and the lead-allegation coefficients should suggest similar effects to those shown in the first three columns in the table.

Looking at columns 4 through 6 in the table, it appears that the results are not driven by pre-existing trends. The coefficients on allegations are all similar to before; in fact the results on Catholic and religious-not-Catholic are somewhat larger in absolute value. Turning to the lead-allegations coefficients, they are all much smaller than the true allegation effects, most are wrong-signed, and all nine of the lead-allegation coefficients are statistically insignificant. Places that saw large surges in allegations do not appear to be places where Catholicism had been in decline, nor had they been places where non-Catholicism was especially ascendant prior to the scandal.

The final set of regressions in the table considers this issue using an even stronger specification,

[18] As with the true allegations variable, the future-allegation coefficients in the table reflect the effects of 10 allegations so that the magnitudes are directly comparable across all the allegation coefficients shown. The results are similar if only the two-year lead control is included and the 3- and 4-year leads are dropped.

where region-by-year dummies have been included (here, region refers to the four census regions). These controls allow for differential trends in religious adherence across different parts of the country; the regressions thus base identification off of differences between different states within the same region and year. Including these controls does not qualitatively change the estimates; in fact the results are somewhat larger in magnitude than in the baseline estimates. The future allegation coefficients continue to be small, insignificant, and frequently wrong signed. The results thus suggest that the scandal led to a decline in Catholicism that was compensated at least in part by a rise in non-Catholic adherence, and that these effects are not driven by pre-existing trends in the data.

3B. The Effect of the Scandal on Different Religious Groups

One might wonder which religious groups drive the substitution effect documented in Table 3. Information on the substitution behavior of Catholics can be found from the Religious Landscape Survey (RLS) of the Continental US, conducted by the Pew Forum. The survey, conducted in 2007, provides information on a nationally-representative sample of over 36,000 Americans. The Pew survey included information on both current and past religious affiliation.[19] Of the 36,000 respondents, a relatively large number, 3,251, reported themselves as former Catholics. The survey's acceptably large sample and information on current and past affiliation allows an exploration of what faiths are chosen by those substituting away from Catholicism.

Episcopalianism more closely resembles Catholicism than other Protestant traditions; one might suspect that the Episcopal Church would thus benefit most from the scandal as individuals leaving Catholicism seek a similar substitute. Table 4 suggests that this is not the case. The first column of the Table provides information on the 3,251 former Catholics in the RLS; these are former Catholics who left their faith for any reason. The column shows that few former Catholics—only 2 percent—switch to the Episcopal Church. Indeed, Catholics who leave for another faith are about 4 times as likely to become Baptists as Episcopalians.

[19] The survey asked respondents, "What is your present religion, if any?" and also asked, "Thinking about when you were a child, in what religion were you raised, if any?"

The large effect for Baptists is an unanticipated result, as among major Protestant groups Baptists are arguably the most distant from Catholicism along various dimensions. For example, in 1986, 1988, 1989, and 2004, the GSS asked respondents to rate on a scale of 1 to 100 their "temperature" towards Catholics; Baptists on average gave cooler responses than Lutherans, Episcopalians, Methodists, Presbyterians, or even Jews.[20] In 1988 and 1998 the GSS asked respondents to name "good friends" and asked about the religious affiliation of the first friend named. Baptists were less likely to name a Catholic friend than anyone else, including Jews, non-Christians, and the unaffiliated.[21]

The rest of column 1 shows an even larger fraction of Catholics leaving for non-denominational churches or other Christian alternatives such as Pentecostals, Jehovah's Witnesses, and Mormons. There is striking heterogeneity in destinations among those leaving Catholicism and if anything a preference against traditions that most resemble the Catholic Church in terms of polity, doctrine, and worship style.[22] Column 1 (as well as the next two columns) also shows a large number of unaffiliated Catholics, which appears to contrast with the earlier GSS results. This is discussed momentarily.

One might wonder how column 1 of Table 4 would look if confined only to those who left because of the scandal. In 2009, a follow-up survey to the Religious Landscape Survey asked 699 former Catholics why they left and reported information on their current affiliation.[23] Figure 4 gives information on drivers of disaffiliation from the Catholic Church for these 699 individuals. Respondents could list multiple factors as important reasons for their leaving Catholicism. Figure 4 shows that the scandal is a reasonably important factor in driving away former Catholics; about a fourth of those leaving the church

[20] Baptists' average "temperature" towards Catholics was 61 [se = 0.2], for Lutherans the average towards Catholics was 67 [0.3], for Episcopalians 67 [0.5], for Methodists 66 [0.3], for Presbyterians 65[0.4], and for Jews 62 [0.5]. Catholics' average temperature towards themselves was 80 [0.2].

[21] Only five percent of Baptists named a Catholic friend. The percent of Catholic friends for other groups were: Episcopalian (18 percent), Lutheran (20 percent), Methodist (14 percent), Presbyterian (21 percent), Jewish (9 percent), and no religion (15 percent). The fraction of Catholics naming a Catholic friend was 48 percent.

[22] The GSS data can also be used to create a table similar to column 1 in Table 4. The Religious Landscape Survey offers a better breakdown of faiths (especially compared to earlier years of GSS data) and was the basis for the survey used in columns 2 and 3, and so it is used in column 1. However, the results with the GSS are very similar, reporting 40 percent of former Catholics as non-affiliated, 9 percent as Baptists, 3 percent as Episcopalian, and 15 percent as mainline Protestant. Additional comparison of these results to the GSS is given below.

[23] A small number of individuals were excluded from the follow-up survey because they gave an ambiguous response in the RLS as to either their current or their former religion, but this should not have any substantive effect on the findings in the figure.

mentioned the scandal as an important factor in their decision to leave Catholicism. While not as important as concerns with teachings on abortion or birth control, it is more important than most life events (such as marriage or relocation) or the Church's controversial decision to end Latin Mass.

Returning to Table 4, column 2 reports the current affiliation of those who listed the scandal as an important reason for their leaving; the figure again confirms strong variety in re-affiliation for those leaving because of the scandal. The sample size here is smaller—only about 180 respondents—but it is obvious that the figure resembles column 2 with many Catholics switching to typically distant alternatives such as Baptists, non-denominational Christian groups, and other Christian groups such as Pentecostals, Anabaptists, and Mormons.

One might wonder whether part of the radical substitution behavior in column 2 and in Table 3 earlier is a form of retaliation against the Catholic Church for the scandal: individuals who are angry at the church not only decide to leave but further decide to choose a patently non-Catholic alternative as an expression of their anger. However, the findings in column 1, which includes individuals leaving the church for *any* reason, are qualitatively similar. Furthermore, Figure 4 indicates that the most common reason for leaving the Catholic faith is relatively mundane: individuals report that they "just gradually drifted away." In column 3 of Table 4, the current religious affiliations of the 458 individuals who report gradually drifting away from Catholicism are shown. The numbers are essentially identical to those in the second column, indicating that the substitution seen here is not specific to the scandal.

Table 5 provides additional information on the destinations of those leaving the Catholic Church using regressions on the GSS data. The GSS does not provide a breakdown of faiths identical to the RLS and the categorization of respondents in the GSS who report a faith other than Catholic, Protestant, or Jewish changes during the period considered. But the breakdown in Table 5 will still provide a comparison to Table 4 and information on substitution more generally. Panel A of Table 5 uses a regression specification identical to the regressions in the first 3 columns of Table 3 and equation (1) earlier. The coefficient in the first column is a dummy for no affiliation; this regression is the same as in column 2 of Table 3. The next column uses a dummy if a respondent names any protestant affiliation; the

estimate is positive and significant. Columns 3 through 8 report dummies for individual faiths. Many of the results are imprecise, which is not surprising given the large heterogeneity in destinations found in Table 4: even if several million Catholics left the church from the scandal, Table 4 indicates that the amount substituting to any particular faith were often in the tens or hundreds of thousands, effects that are potentially too small to identify in the GSS.

However, despite the imprecision, Panel A of Table 5 appears consistent with Table 4 in at least three key ways. First, the largest coefficient for the Protestant groups in Panel A is for Baptist affiliation, and (in contrast to most of the other coefficients) it *is* marginally significant, again suggesting that Baptists gained importantly from the scandal. Second, the results again confirm that the Episcopal Church was not the main winner from the scandal. The coefficient in column three on Episcopal affiliation is quite small and insignificant. Moreover, the standard error is small enough to rule out the Episcopal Church driving substitution away from Catholicism; the upper-bound of the 95-percent confidence interval on the coefficient is only 0.0015. Third, the point estimates again indicate significant heterogeneity in the destinations of those leaving Catholicism; there is no group that appears to be driving the substitution alone.

One notable fact from the Pew Surveys in Table 4 is that a large fraction of individuals leaving Catholicism report no current affiliation; this contrasts with the results in the GSS. One potential explanation for this distinction is that some individuals who left the Catholic Church after the scandal may have initially tried another faith and then become unaffiliated, or more generally that the decision to become unaffiliated was more gradual than the decision to substitute.

Panel B of Table 5 considers this possibility by redoing the estimates in Panel A, but now a variable equal to the average number of allegations in the prior 5 years is included.[24] The results in column 1 of Panel B clearly indicate an increasing prevalence of non-affiliation over time as a result of the scandal. One potential explanation for this result is that some Catholics "try out" another faith when

[24] Of course, the coefficient for this variable could also be interpreted as measuring the sum of all allegations in the prior 5 years, in which case it would simply be scaled by a factor of 0.2.

the scandal hits, but then eventually become unaffiliated. Turning to the other columns, the largest coefficient in both the short-run and over time is for Baptist affiliation; it is about six times larger than the Episcopalian coefficient and it is again marginally significant. The non-Baptist columns typically show smaller and imprecise effects; the imprecision is again not surprising given the GSS' sample size. Overall, the results from Tables 4 and 5 indicate significant heterogeneity in the destination of those leaving Catholicism, with relatively distant groups appearing to gain more from the scandal than the relatively similar option of the Episcopal Church.

3C. Results from a Denomination-Specific Dataset

One might wonder whether additional evidence on how non-Catholic religious groups benefited from the scandal could be provided by the groups themselves. One challenge to this is that, as mentioned above, many groups may have received several thousand former Catholics, a number too small to see even in administrative data. Further, Table 4 shows that nondenominational and non-mainline-Protestant groups received a large portion of Catholic converts after the scandal; these groups generally do not collect information on finances or membership (or share this information with researchers or outside organizations).

Perhaps the most promising non-Catholic denomination for this purpose is the Southern Baptist Convention, or SBC. The SBC is the second largest denomination in the United States. Moreover, the results from Tables 4 and 5 suggest that Baptist groups saw relatively large increases in membership from the scandal; the SBC is easily the largest Baptist denomination in the country and may have been a key beneficiary from such substitution.

The results in this subsection look at the effect of the scandal on Southern Baptist outcomes using administrative SBC data. The SBC is organized into state conventions. SBC churches are annually asked to report membership and financial information to their convention; this information is then collated and aggregated into a convention-level dataset.[25] The data used here includes information on Southern Baptist membership and donations for each state convention each year from 1990 to 2007. Donations

[25] This is done by LifeWay Christian resources, who made the data available for use here.

include voluntary offerings made to SBC churches and capture most church income.[26] More specifically, donations include donations and offerings made to congregations by members and attendees, as well as "designated" gifts that are collected by churches for particular causes, which may be church-specific (e.g., a building fund) or denomination-specific (e.g., the Lottie Moon Christmas Offering, which supports SBC missionary work).[27] Donations are in year 2000 dollars. There are 36 conventions in the sample, covering the continental United States.[28] There are about 15.5 million adherents included in the data in a typical year.

Figures 5 and 6 show basic trends in the data across states hard-hit by the scandal and states not hard-hit in the years before and after the scandal. As before, hard-hit states refers to states with 30 or more allegations in 2002 as listed in Table 2. Figure 5 shows annual membership normalized to 100 for each group. Figure 6 shows annual donations. The SBC data is reported by the denomination each April; the year 96-97 refers to data reported on April of 1997. There is a break in each figure between the last pre-scandal year in 2000/2001 and post-scandal years starting in 2002/2003. The two figures show a sudden and striking gain in membership and finances for Baptist conventions where the scandal hit especially hard.

To more rigorously investigate the trends shown in Figures 5 and 6, consider the equation:

$$lvar_{sy} = \beta allegations_{sy} + \delta X_{sy} + \phi_s + \theta_y + \varepsilon_{sy}, \quad (2)$$

[26] A small amount of church income from other sources, such as the rental of property, is not included in this measure.

[27] For two years the California convention did not report donations, and in 1996 California reports a potentially erroneous donations value that is many multiples larger than in surrounding years. Data for these observations were imputed; donations in year y were imputed by multiplying the state's donations in year $y-1$ by the growth rate between $y-1$ and y in total donations to all other state conventions. Simply dropping these imputations from the sample yields estimates similar to those below.

[28] Most conventions in the SBC correspond to state boundaries, but several encompass multiples states. For example, the Kansas-Nebraska convention encompasses churches in Kansas and Nebraska. In the regressions below, state-level controls for a multi-state convention were made by using population-weighted averages across the states in the convention. The list of multi-state conventions is: Northwest Convention (containing Oregon and Washington), the Dakotas Fellowship (North and South Dakota), Kansas-Nebraska (Kansas and Nebraska), Maryland-Delaware (Maryland and Delaware), Minnesota-Wisconsin (Minnesota and Wisconsin), New England (Connecticut, Rhode Island, Massachusetts, New Hampshire, Vermont, and Maine), Penn-South Jersey (Pennsylvania and New Jersey) and Utah-Idaho (Utah and Idaho).

where, for state convention *s* in year *y*, $lvar_{sy}$ is the either (a) the log of total SBC membership or (b) the log of monetary donations to the SBC. The variable $allegations_{sy}$ is total allegations of abuse,[29] X_{sy} is a set of state controls for percent of the population Hispanic, percent black, the rate of insured unemployment, and per-capita disposable income, ϕ_s is a set of state conference dummies, and θ_y is a set of year dummies. As before, the coefficient of interest is β. The denomination itself typically regards data reported in April of year *y* as matching with year *y* – 1 and that approach is used here, although matching data reported in April of year *y* with allegations data from year *y* produces similar estimates. The transition year 2001/2002 is dropped from the estimates, but including this year does not meaningfully change the results. Regressions are weighted by cell size (i.e., convention membership) as of 1990; using contemporaneous cell size produces similar estimates to those shown here.

The results from estimating equation (2) are given in Table 6. As before the coefficient and standard errors report the effect of 10 allegations for readability and comparability with the earlier GSS tables. Robust standard errors clustered by state are given in brackets. The coefficient in column 1 indicates that 10 new allegations will raise membership in an SBC state convention by about half a percent. The mean number of allegations is about 3; from 2002 on it is about 7.8. The average number of members in a state convention, in levels, is about 430,000. The results suggest that the average post-scandal observation thus saw membership increase by about 0.30 percent ($7.8 \times 0.0004 \cong 0.0030$), or about 1,300 members, a reasonably large effect.

The second column considers the impact of allegations on donations to the SBC. The coefficient in column 2 indicates that 10 new allegations will raise donations to SBC churches in a state by about 2.4 percent. The mean amount of donations in the sample, in levels, is about $200 million (in year 2000 dollars), suggesting that the average SBC state convention saw an increase of about $3.7 million from the scandal ($7.8 \times .0024 \times 200 \cong 3.6$). Adding up over states and years would suggest that the scandal led to

[29] Using allegations per capita produces similar estimates for membership, but the regressions on donations are in this case imprecise.

about a $675 million dollar increase in donations for the SBC in the half-decade following the scandal.

One can use this estimate on donations to perform a back-of-the envelope calculation of how total monetary donations to non-Catholic faiths may have been affected by the scandal. Table 4 suggests that about half of all those leaving Catholicism because of the scandal chose a religious alternative (as opposed to non-affiliation), and as noted above the SBC may have received between 5 and 10 percent of those leaving, or thus up to 20 percent of those leaving for another faith. Extrapolating the $675 million affect on donations to other faiths; the estimates here would be consistent with a $3.38 billion increase in donations to non-Catholic faiths as a result of the scandal (or more, if the SBC represents less than 20 percent of those leaving Catholicism for another faith); a reasonably large amount.[30]

The next pair of columns consider pre-existing trends in Southern Baptist membership and donations. If places that saw large numbers of allegations were places that had been experiencing especially strong Southern-Baptist growth, this could be driving the results in the baseline estimates. The regressions in columns 3 and 4 add in controls for allegations 2, 3, and 4 years in the future (as with the true-allegation coefficients, these future-allegations coefficients show the effect of 10 allegations); regressions including only a 2-year allegation lead and omitting the 3- and 4-year leads are similar to those shown here. The results in columns 3 and 4 are similar to before; the effect for membership increases in size and the effect on donations is similar and slightly smaller. This slight decline from column 2 to column 4 is not driven by the future allegation variables but by the change in the sample; redoing the baseline regression on donations in column 2 using only the sample with non-missing future allegations yields a coefficient of 0.0178 [0.0084].[31] Moreover, the controls for future allegations in columns 3 and 4 are smaller, inconsistently signed, and mostly insignificant (a result which also matches

[30] These estimates are also comparable to Figures 5 and 6. The average hard-hit state had about 80 more allegations of abuse across 01/02 and 02/03 than did the average not-hard-hit state; the regression coefficients would suggest a relative increase of about 3.5 percent in membership and about 19 percent in donations for these states between 00/01 and 02/03. The actual change in membership is slightly larger (about 6 percent) and the change in donations slightly smaller (about 13 percent); values that would yield a 6 percent membership effect and a 13 percent donations effect are well within the confidence intervals of the baseline coefficients and in fact are close to coefficient values given elsewhere in the table (e.g., columns 5 and 6).

[31] Redoing the regression in column 1 using the sample with non-missing future allegations slightly increases the size of the coefficient in column 1 to 0.00698 [0.0036].

the lack of pre-existing trends in Figures 5 and 6). The last pair of columns include region-by-year dummies as in Table 3. As before, these controls have little impact, with the true allegations coefficients increasing in magnitude.

Overall, the results here indicate that the sex-abuse scandal led to a decline in Catholic participation, and that this decline was compensated by a rise in non-Catholic participation. Over time, both non-affiliation and non-Catholic participation appear to have increased in areas hard-hit by the scandal. The results do not seem to be driven by pre-existing trends and are qualitatively similar in a variety of datasets. The results suggest a high degree of heterogeneity in the religious traditions chosen by those leaving Catholicism and consistently suggest that the relatively similar option of the Episcopal Church played a less important role than more distant options. In particular, the results in the GSS, both Pew Surveys, and in Southern Baptist administrative data all consistently suggest that Baptists gained significantly from the scandal.

Conclusions

This paper examines how a large, negative, unanticipated, institutionally-specific shock—the Catholic Church sex-abuse scandal—impacted religious practice. The results suggest that religious organizations do compete for members, or more specifically that a negative shock which causes one organization to lose members leads to a gain in membership for other organizations. There is no evidence of a stigma effect; the negative shock on the Catholic Church does not appear to have led to a decrease in religious participation more generally. The results also document a high degree of heterogeneity in the decisions of those who left the Catholic Church. Further, highly non-Catholic alternatives, such as Baptist traditions, appear to have gained from the scandal. The results indicate that regulations or shocks ostensibly focused on a particular religious tradition could have important implications on both non-affiliation and on participation in other traditions, including seemingly "distant" alternatives. While prior research has not used such a shock to study religious markets, Iannaccone, Finke, and Stark (1997) and Hungerman (2010) propose the possibility and list several historical shocks that may be worthy of study.

Extending the results here to the historical episodes described in those papers, or to other shocks, is an excellent topic for future work.

Future work may also try to reconcile the findings here with past theories of religious adherence, including religious capital theories and work based on spatial competition. One possible avenue for extension would be to consider spatial models where goods are differentiated on multiple characteristics, rather than along one dimension (although it may not be immediately clear what dimension would explain the Catholic-to-Baptist results found here, given the differences between Baptism and Catholicism in theology, polity, worship style, culture, and social interaction). Alternately, it could be that Catholics came to associate the scandal with some constellation of attributes provided by the Catholic Church, and so defecting Catholics sought out groups with entirely different attributes. This is certainly plausible, although an exploration of this idea would have to address the fact that Episcopalianism did not decline from the scandal—that is, any association of the scandal with "Catholic-like" attributes would be an association that drove Catholics away from Episcoplaniasm, but did not drive Episcopalians away from their own faith.

The well-known club-goods model of religious participation developed by Iannaccone (1992) may also provide a potential explanation for the results here. As noted in Iannaccone (1992) and Hungerman (2011), the model has a strong empirical track record for explaining the decisions of religious adherents in strict-church environments and the model suggests that radical defection may be especially likely for those leaving a strict religious group. However, the extent to which the tradition considered in this paper—the Catholic Church—would qualify as a strict religious group in the sense of the club-goods model is an open question. These and other extensions of theories of religion to account for the findings here are left for future work.

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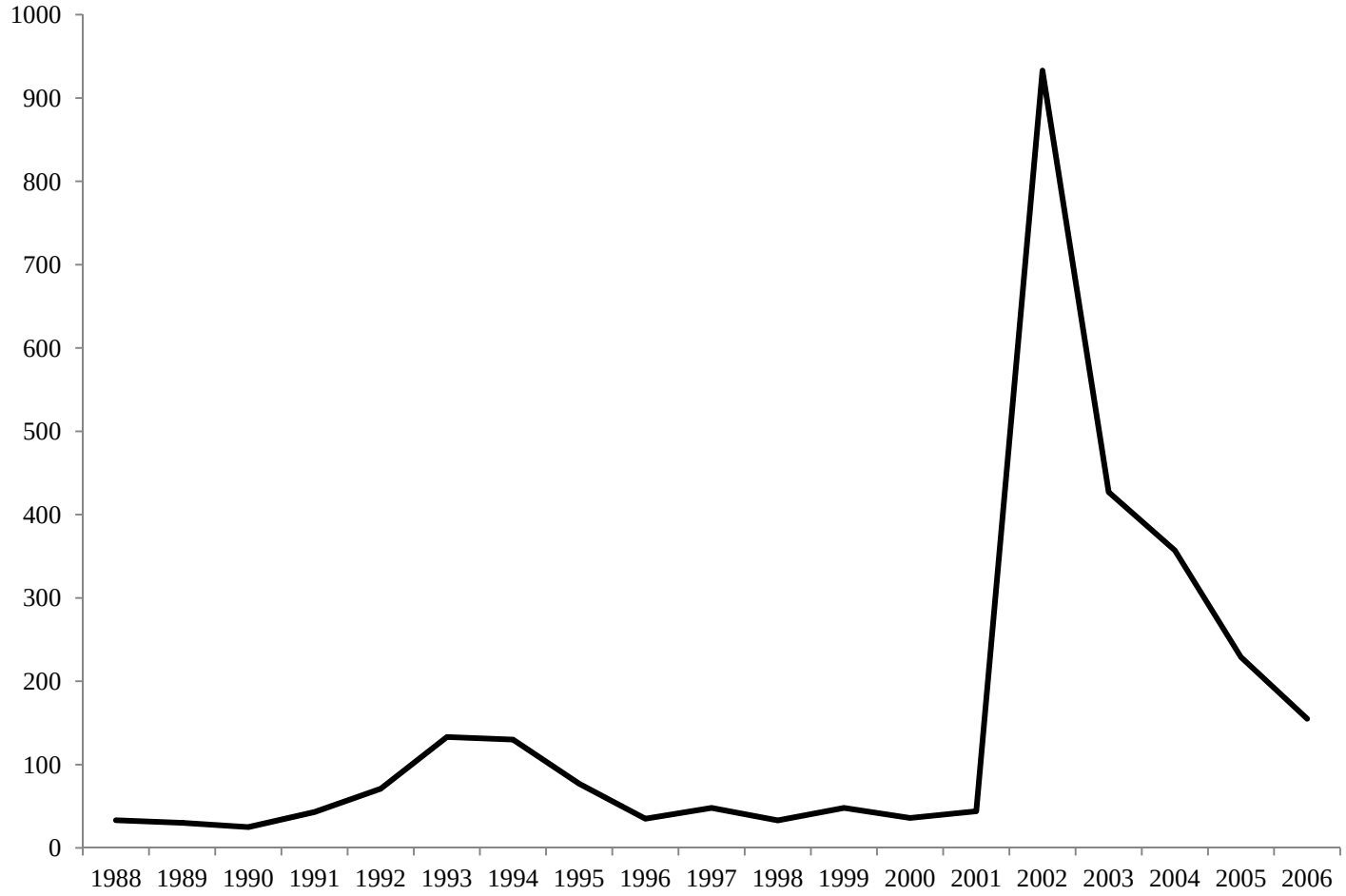
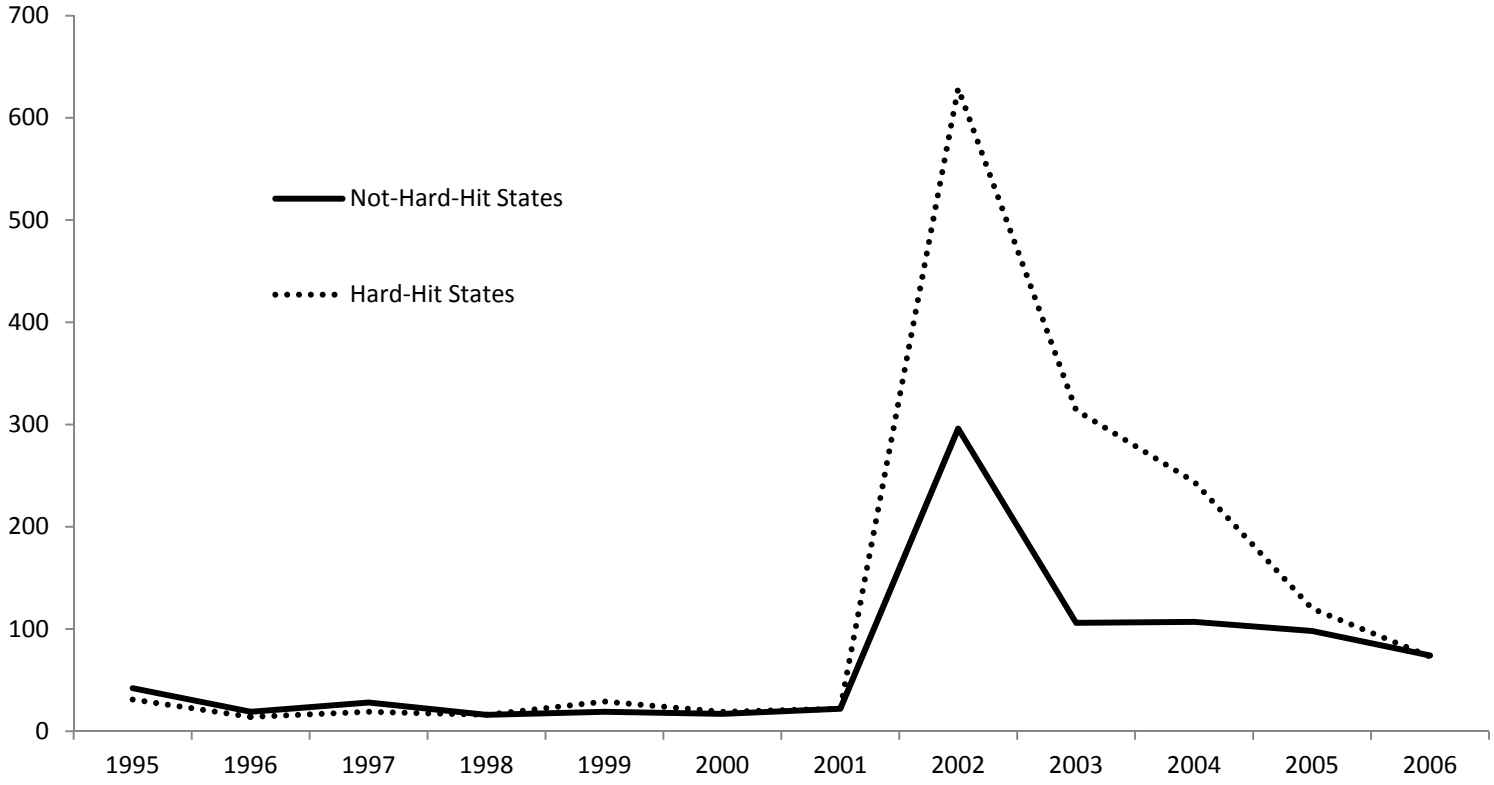
Figure 1: Allegations



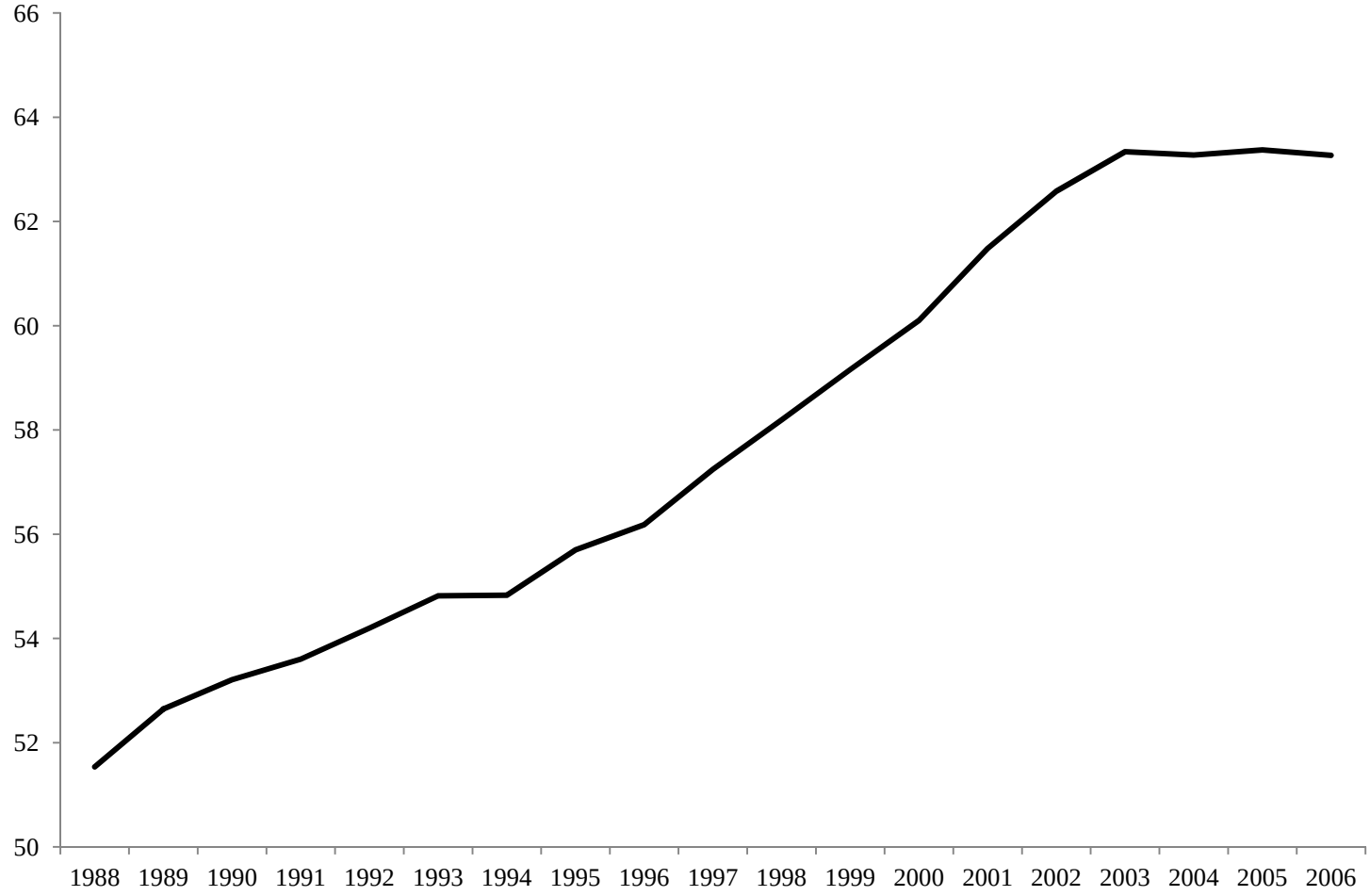
The figure shows, for each year, the number of Catholic officials accused of sexual abuse for the first time. Data on allegations are from the continental United States and are from Bishop Accountability (see text).

Figure 2: Allegations across States



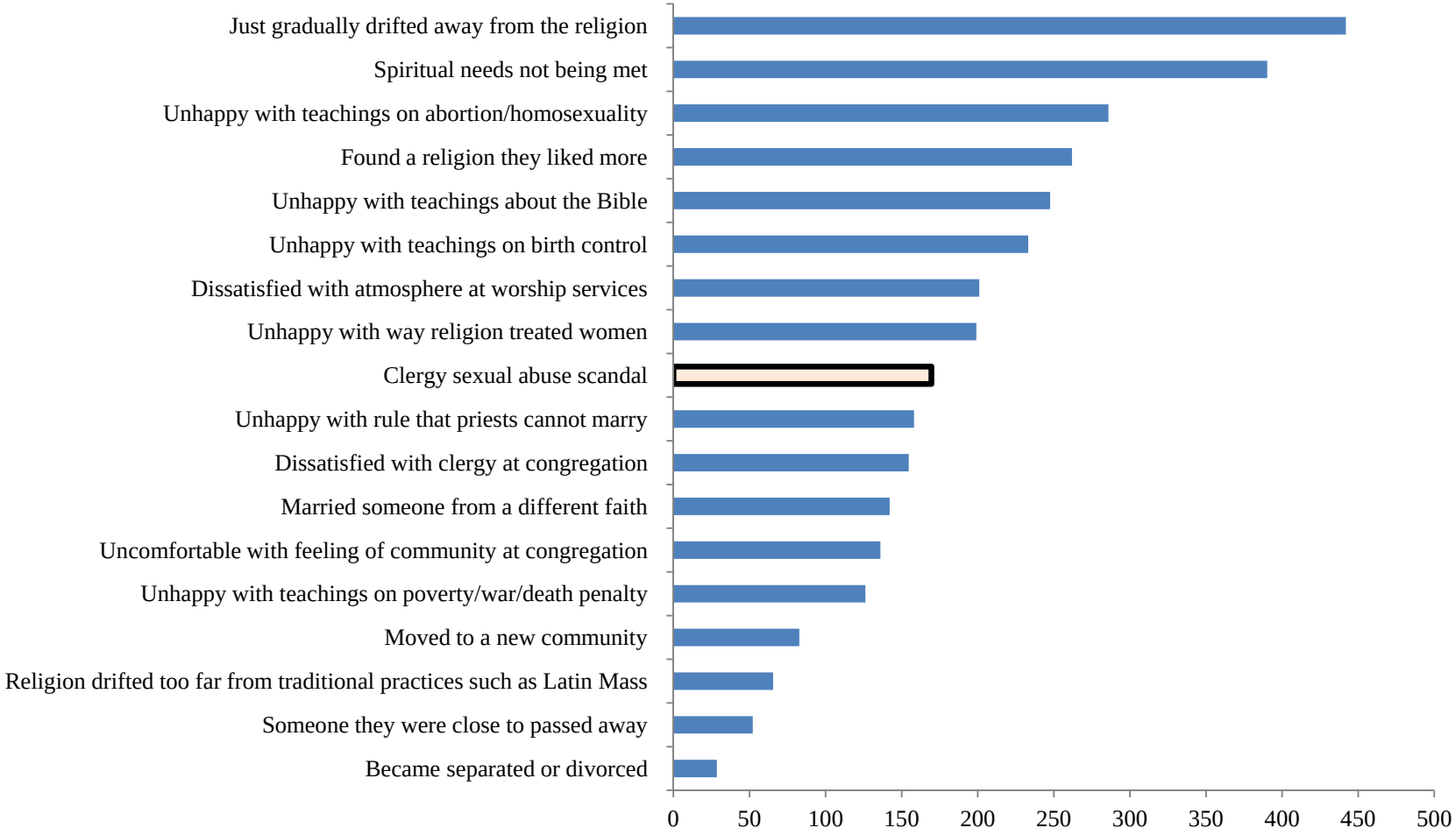
The figure shows total allegations each year for two groups of states: those "hard hit" by the scandal (having 30 or more allegations in 2002) and those not-hard-hit by the scandal. States with 30 or more allegations in 2002 are listed in Table 2.

Figure 3: Catholic Population (Millions)



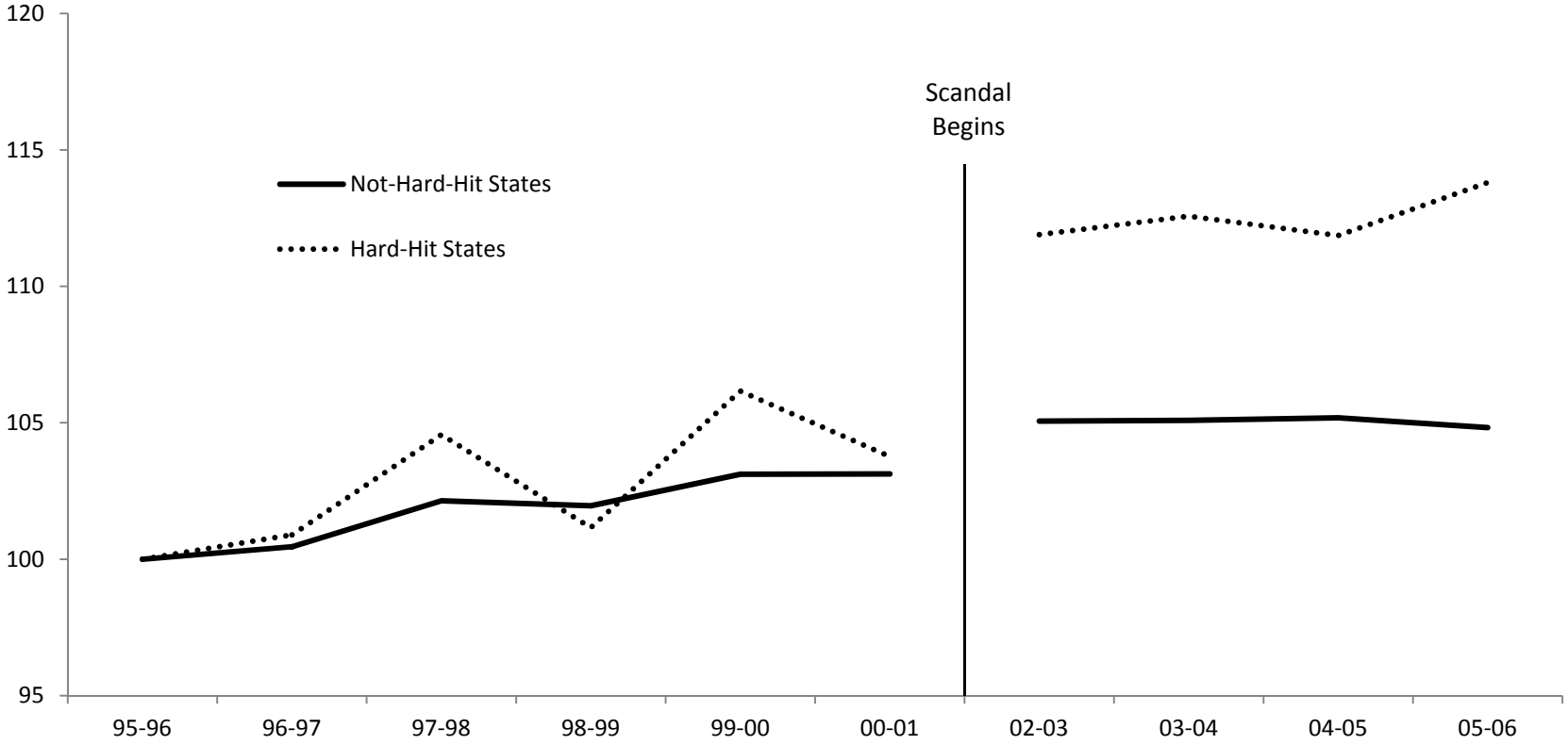
The figure shows, for each year, the total Catholic population in the continental United States. The data are from various years of the Official Catholic Directory.

Figure 4: Reasons for Leaving Catholic Church



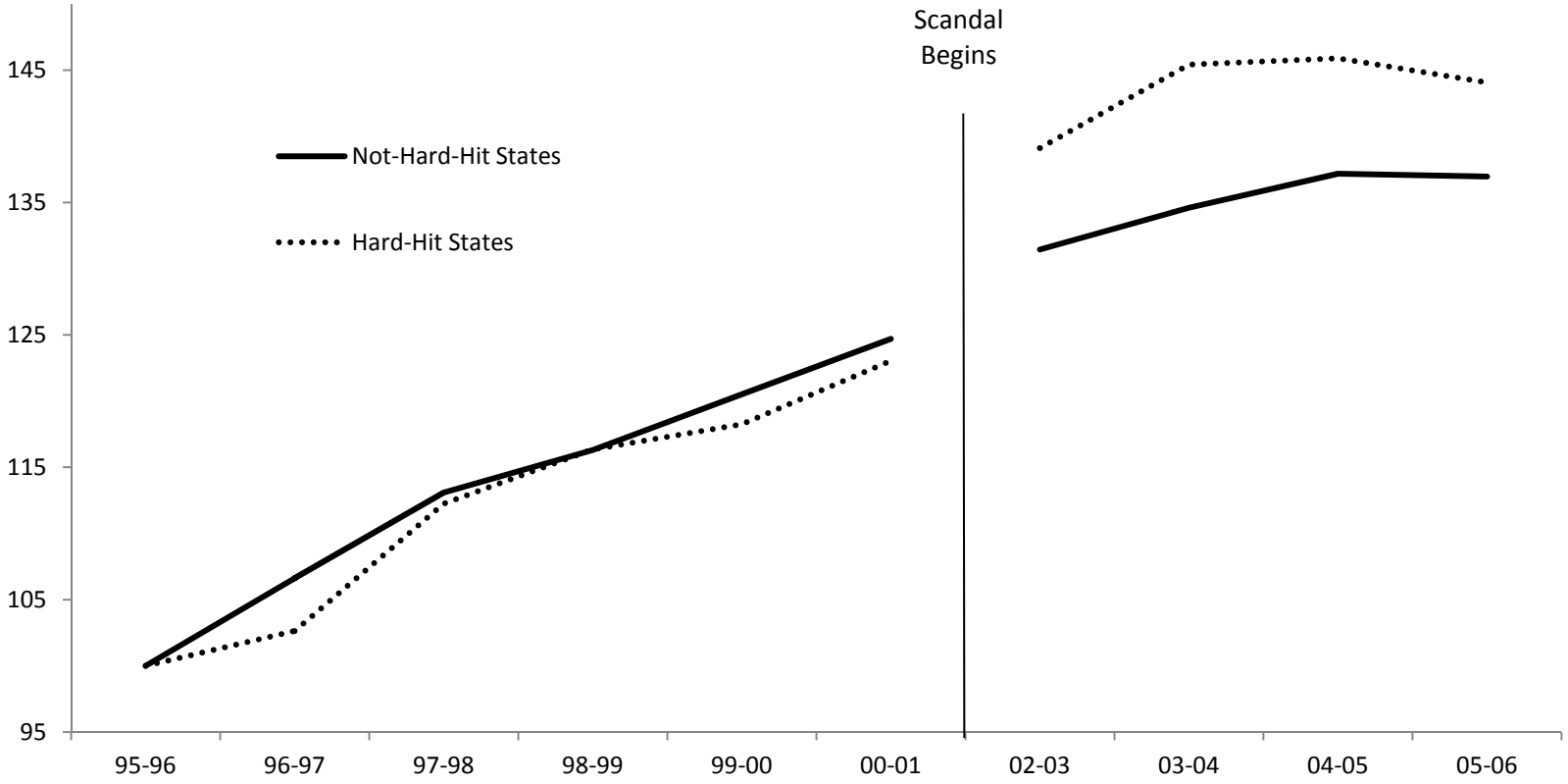
The figure shows the number of respondents listing each item as an important reason for leaving Catholicism. The figure includes 699 respondents who had left Catholicism (and are now Protestant or unaffiliated); respondents could say that multiple reasons were important for their decision to leave. Source: Pew Forum's Conversion Recontact Survey, (Pew Forum, 2009); the survey was conducted in October and November of 2008.

Figure 5: Southern-Baptist Membership across States



The figure shows annual membership for Southern Baptist churches in state conventions hard-hit by the scandal and state conventions not-hard-hit by the scandal; for each group membership in 95-96 is normalized to 100. Data from 95-96 correspond to data reported on April, 1996, (and similarly for other years). Hard-hit state conventions are conventions with a state seeing 30 or more allegations in 2002, as shown in Table 2; these include California , Illinois, Kentucky, Maryland-Delaware (a multistate convention including Maryland and Delaware), Michigan, New England (including Connecticut, Rhode Island, Massachusetts, New Hampshire, Vermont, and Maine), New York, Ohio, and Penn-South Jersey (including Pennsylvania and New Jersey).

Figure 6: Southern-Baptist Donations across States



The figure shows annual donations, in year 2000 dollars, for Southern Baptist churches in state conventions hard-hit by the scandal and state conventions not-hard-hit by the scandal; for each group donations in 95-96 are normalized to 100. Data from 95-96 correspond to data reported on April, 1996, (and similarly for other years). Hard-hit state conventions are conventions with a state seeing 30 or more allegations in 2002, as shown in Table 2; these include California , Illinois, Kentucky , Maryland-Delaware (a multistate convention including Maryland and Delaware), Michigan, New England (including Connecticut, Rhode Island, Massachusetts, New Hampshire, Vermont, and Maine), New York, Ohio, and Penn-South Jersey (including Pennsylvania and New Jersey).

Table 1:
A Brief Timeline of Events Related to the Scandal

June 1985	Ray Mouton and Father Tom Doyle prepare a confidential report discussing the potential for a future crisis related to sexual abuse and providing suggested responses to allegations of abuse.
February-July 1992	Media attention highlights incidents of abuse, including a 30 minute primetime show by Diane Sawyer on accusations against the Rev. James Porter.
1992	U.S. Conference of Catholic Bishops (USCCB) adopts 5 principles for dealing with sex abuse accusations.
January 6, 2002	The Boston Globe releases a story featuring the defrocked priest John Geoghan and his long history of sexually-abusing children. The article sets off an explosion of media attention.
January-March 2002	The sex scandal grows increasingly widespread as accusations are made across the country.
April 2002	The Pope calls for an emergency meeting of US Bishops together to discuss the Scandal.
June 2002	The USCCB holds a conference in Dallas; at the conference the USCCB adopts policies to address sexual abuse scandals.
2002 - 2003	Allegations of abuse continue to be made throughout the country.
February 2004	*The Nature and Scope of the Problem of Sexual Abuse of Minors by Catholic Priests and Deacons in the United States*, typically known as The John Jay Report, is issued by the National Review Board (a lay watchdog panel).
September 2005	US government states that the Pope cannot be sued because as the head of a state he has immunity from charges.
September 2005	Philadelphia Grand Jury report issued with additional details of abuse.

Table 2:
Where did the Scandal Hit Hardest?
Allegations by State in 2002

State	Allegations	State	Allegations
Massachusetts	138	Tennessee	7
New York	80	Virginia	6
California	77	Mississippi	4
Ohio	55	Nebraska	4
New Hampshire	52	Rhode Island	4
Illinois	49	South Carolina	4
Michigan	43	Vermont	4
Kentucky	38	Georgia	3
Pennsylvania	35	Kansas	3
Maryland	32	North Carolina	3
New Jersey	30	North Dakota	3
Wisconsin	29	Oklahoma	3
Florida	28	Alabama	2
Connecticut	25	Delaware	2
Missouri	22	South Dakota	2
Oregon	22	Utah	2
Texas	22	Idaho	1
Arizona	17	New Mexico	1
Minnesota	17	Nevada	1
Indiana	13	Arkansas	0
Louisiana	12	Colorado	0
Washington	12	Montana	0
Maine	10	West Virginia	0
Iowa	8		

This table shows the total number of priests in a state accused of sexual abuse in 2002. The data were compiled with the help of Bishop Accountability.

Table 3:
Effects of Scandal on Self-Reported Membership in the GSS

	Baseline			With Future Allegations			With Region-by-Year Dummies		
	Catholic	None	Not Catholic	Catholic	None	Not Catholic	Catholic	None	Not Catholic
Allegations	-0.0046 [0.0018]	-0.0004 [0.0013]	0.0051 [0.0023]	-0.0080 [0.0029]	0.0018 [0.0023]	0.0061 [0.0035]	-0.0082 [0.0034]	0.0008 [0.0031]	0.0074 [0.0044]
Future Allegations (2-Year Lead)	-	-	-	0.0004 [0.0025]	-0.0021 [0.0029]	0.0018 [0.0034]	0.0025 [0.0033]	-0.0013 [0.0040]	-0.0012 [0.0049]
Future Allegations (3-Year Lead)	-	-	-	0.0019 [0.0026]	-0.0009 [0.0032]	-0.0009 [0.0032]	-0.0032 [0.0038]	0.0017 [0.0039]	0.0015 [0.0039]
Future Allegations (4-Year Lead)	-	-	-	-0.0002 [0.0017]	0.0029 [0.0028]	-0.0027 [0.0026]	0.0029 [0.0026]	0.0007 [0.0032]	-0.0036 [0.0037]
RHS Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region × Year Dums?	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State Dummies?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age Dummies?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Marital Dummies?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	21922	21922	21922	14765	14765	14765	14765	14765	14765
R-squared	0.128	0.067	0.149	0.126	0.068	0.153	0.127	0.069	0.154

The above regressions are linear probability regressions using data from the General Social Survey from 1993 to 2006. Residuals are clustered by state. The variable allegations counts the number of newly-accused Catholic officials in a given state and year. For readability, the variable allegations has been divided by 10, so the coefficient shows the effect of 10 allegations. The future-allegations variables have also all been divided by 10. From 2002 on, the sample mean of allegations is about 15. The dependent variable in the first column is a dummy for whether a respondent reports their current religion as "Catholic" (about 25% of the sample); in the second column it is a dummy for reporting no religious affiliation (13% of the sample), and in the third column it is a dummy for reporting a religious affiliation other than None or Catholic. The regressions in columns 4, 5, and 6 are identical to those in the first 3 columns except they include controls for future allegations (see text). The final three columns add region-by-year dummies where "region" refers to the four ensus regions. Controls include variables for respondents' age, sex, marital status, education, race, income, and state level income, unemployment, and state fraction black and Hispanic.

Table 4:
Destinations of those Leaving Catholicism

	Reason for Leaving:		
Percent of former Catholics Who are Now:	**Left for Any Reason**	**Left because of Scandal**	**"Just Gradually Drifted Away"**
Episcopal	2	2	1
Baptist	8	6	6
Other Mainline	9	8	8
Non-denominational	13	10	11
Other Christian	16	17	16
Other Religion	6	6	4
Unaffiliated	46	51	54
Total	100	100	100
Survey	RLS	FFS	FFS
Observations	3251	178	458

Data in column 1 are for 3,251 respondents who were raised Catholic but no longer report being Catholic in the Religious Landscape Survey of the Continental US, or RLS (Pew Forum, 2007). The data in column 2 are for 178 respondents in the follow-up Faith in Flux Survey, or FSS (Pew Forum, 2009) who left the Catholic Church and list the sexual abuse scandal as an important explanation for doing so. The data in column 3 are for 458 individuals in the Faith in Flux Survey who left the Catholic Church and list "Just Gradually Drifted Away" as an important explanation for doing so. "Other Mainline Protestant" denominations include Methodists, Lutherans, and Presbyterians. Other Religion groups include (among others) Jews, Muslims, Buddhists, and Hindus. Other Christian groups include (among others) Pentacostals, Jehovah's Witnesses, Adventists, Anabaptists, and Mormons.

Table 5:
Which Groups Gained From the Scandal? Results from the GSS

Panel A

	None (1)	Protestant (2)	Episcopal (3)	Baptist (4)	Presby. (5)	Lutheran (6)	Methodist (7)	Jewish (8)
Allegations	-0.0004 [0.0013]	0.0051 [0.0018]	0.0004 [0.0007]	0.0030 [0.0021]	0.0012 [0.0006]	-0.0004 [0.0010]	0.00001 [0.0009]	0.0001 [0.0005]
RHS Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	21922	21922	21922	21922	21922	21922	21922	21922
R-squared	0.067	0.192	0.027	0.194	0.024	0.091	0.042	0.038

Panel B

	None (1)	Protestant (2)	Episcopal (3)	Baptist (4)	Presby. (5)	Lutheran (6)	Methodist (7)	Jewish (8)
Allegations	-0.0004 [0.0013]	0.0051 [0.0018]	0.0004 [0.00007]	0.0030 [0.0019]	0.0012 [0.0007]	-0.0004 [0.0010]	0.0001 [0.0009]	0.0002 [0.0005]
Average Allegations in Prior 5 Years	0.0071 [0.0033]	0.0090 [0.0054]	0.0002 [0.0013]	0.0060 [0.0041]	0.0018 [0.0020]	-0.0018 [0.0020]	0.0048 [0.0024]	-0.004 [0.0015]
RHS Controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	21922	21922	21922	21922	21922	21922	21922	21922
R-squared	0.067	0.192	0.027	0.194	0.024	0.091	0.042	0.038

The above regressions are linear probability regressions using data from the General Social Survey from 1993 to 2006. In both panels A and B, the dependent variable in the first column is a dummy that equals unity if a respondent reports their religious preference as "none;" the first regression in Panel A matches column 2 of Table 3. The dependent variable in column 2 is a dummy that equals unity if a respondent names any Protestant religious affiliation. The dependent variable in the third column is a dummy that equals unity if a respondent reports an Episcopal affiliation; the fourth column uses a dummy for Baptist affiliation, and so on. Residuals are clustered by state. The variable allegations counts the number of newly-accused Catholic officials in a given state and year. For readability, the variable allegations has been divided by 10, so the coefficient shows the effect of 10 allegations. The regressions in panel B include the average number of total allegations (again divided by 10) in a state over the prior 5 years as a control. Controls are the same as in the first 3 columns in Table 3 and include variables for respondents' age, sex, marital status, education, race, income, and state level income, unemployment, and state fraction black and Hispanic.

Table 6:
Allegations of Abuse and Southern-Baptist Outcomes

	Baseline		With Future Allegations		With Region-by-Year Dummies	
	Log Members	Log Donations	Log Members	Log Donations	Log Members	Log Donations
Allegations	0.0042 [0.0025]	0.0242 [0.0088]	0.0050 [0.0030]	0.0146 [0.0073]	0.0080 [0.0048]	0.0145 [0.0077]
Future Allegations (2-Year Lead)	-	-	-0.0025 [0.0026]	0.0038 [0.0034]	0.0012 [0.0026]	0.0038 [0.0042]
Future Allegations (3-Year Lead)	-	-	0.0011 [0.0042]	-0.0019 [0.0031]	-0.0014 [0.0027]	-0.0009 [0.0040]
Future Allegations (4-Year Lead)	-	-	-0.0154 [0.0042]	-0.0112 [0.00034]	-0.0078 [0.0030]	-0.0114 [0.0060]
RHS Controls?	Yes	Yes	Yes	Yes	Yes	Yes
Region × Year Dummies?	No	No	No	No	Yes	Yes
Conference Dummies?	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	612	612	468	468	468	468
R-squared	0.998	0.991	0.999	0.997	0.999	0.997

The above regressions are regressions on Southern Baptist administrative data provided by Lifeway Christian Resources for the years 1990 to 2007; the unit of observation is churches in a given state convention and year. In the first column the dependent variable is the log of total Southern Baptist membership and in the next column the dependent variable is the log of monetary donations to SBC churches. The regressions in columns 3 and 4 include controls for future allegations. The mean number of members (in levels) for the regression sample is about 430,000, the mean of monetary donations is about $200 million. The variable allegations counts the number of newly-accused Catholic officials in a given state and year. For readability and comparability with earlier tables, the variable allegations has been divided by 10, so the coefficient shows the effect of 10 allegations. The future allegations variables have also been divided by 10. The sample mean of allegations is about 3.4; from 2002 on it is about 7.8. The regressions include 36 conferences; several conferences include multiple states and in this case allegations and right-hand side controls are population-weighted averages. The regressions are weighted by cell size as of 1990 (using contemporaneous cell size produces similar estimates). Controls include state level income, unemployment, and state fraction black and Hispanic.