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# The Effect of University Characteristics on Student Religiousness: A Meta-Analysis of Catholic Universities

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## Abstract

Despite frequent claims from religious colleges and universities that they instill and promote religious identity and despite evidence of growing student interest in religion, very little research—and no data on Catholic universities—linking university features to student religiousness are currently available. A meta-analysis of twenty-six studies measuring student religious outcomes in Catholic universities since 1960 found that overall religiosity in Catholic universities exceeds that at secular universities by about half a standard deviation. Student church attendance—an “objective” religious activity—is highly sensitive to institutional differences; prayer and self-assessed religiousness—reflecting “subjective” personal devotion or attitude—are not. Church attendance has dropped by half a standard deviation since the 1960s, most of the decline having occurred recently; it rises sharply with increased Catholic concentration and declines in universities that are more selective, as indicated by Carnegie undergraduate profile, and more wealthy, as indicated by average faculty salary. Requiring fewer theology/philosophy courses suppresses church attendance, and very high church attendance suppresses selectivity, indicated by SAT scores and admissions yield. The implications of these findings for improving Catholic identity and institutional metrics are discussed.

There is evidence that interest in religion is on the rise among college students in secular settings (Astin, Astin, and Lindholm 2010; Cherry, DeBerg, and Porterfield 2003). Is this upward trend—when refracted through the lens of an explicitly religious, Catholic university—strengthened, weakened, or unaffected? In other words, how effective are America's Catholic colleges and universities at promoting the development of Catholic faith and practice among their students?

Although it might seem obvious that student religiousness would be augmented in a religious university, a good case could be made that the opposite can occur in Catholic universities. By many accounts, at least until recently, interest in religion had been declining for decades among Catholic colleges themselves. Beginning in the 1960s, the distinctive religious character of Catholic universities was assailed by a kind of perfect storm of cultural and religious forces: the cultural traumas of the 1960s, which simultaneously secularized American religion and undermined the traditional university; the liberalizing effects of the Second Vatican Council (1962–1965), which exposed Catholic institutions more fully to modern and mainstream culture and greatly reduced the ranks of priest and monastic academics; and the increasing importance for university budgets of government funding, carrying with it implicit church-state tensions.

At the same time, American Catholicism itself was rapidly secularizing. The major Catholic ethnic groups—Irish, Italian, and Polish—had experienced significant upward mobility following World War II and, by the 1960s, had successfully assimilated from the outsider immigrant underclass into the mainstream of U.S. society, as was dramatically marked by the 1960 election of John F. Kennedy, an Irish Catholic, to the Presidency. Twenty years later, Catholic sociologist and priest Andrew Greeley (1979: 92) noted, “In education, annual family income and occupational achievement, Catholics have higher mean scores than do Protestants.” American Catholics also became more like Protestants in religious behavior, as measures of religious practice steadily declined through the latter half of the 20th century. The proportion of Catholics attending weekly church services, for example, dropped from an estimated 60 percent in 1960 to half that proportion by the 1990s—a rate indistinguishable from that of Protestants, as measured by the General Social Survey and earlier related polls (Greeley 1989; Sullins 1999). By the end of the 20th century, the rate of Catholic religious practice was lower than that of mainline Protestants.

Propelling and shaping these external social changes were the strong internal forces that were set in motion in American Catholicism by the Second Vatican Council and the related controversy over the moral acceptability of artificial contraception. The numbers of Catholic priests, monks, and nuns dropped dramatically. The special character of consecrated life relative to marriage was diminished as thousands of men left the priesthood, most of them to marry, and the stream of

new entrants to ordination and Catholic religious orders dried up. The 1968 encyclical *Humanae Vitae* was pivotal for the American Catholic laity, which overwhelmingly rejected the Pope's prohibition on the use of contraception in marriage, a dissent that undermined the Church's moral authority in other areas as well. Successive sexual abuse scandals among the clergy further weakened the confidence of Catholics in Church leaders. By the end of the 20th century, D'Antonio and colleagues found in a series of national-sample surveys that the majority of American Catholics held that one could be a good Catholic without following Church teachings on birth control, divorce, abortion, the nature of the sacraments, attending Mass, or donating to the Church (D'Antonio et al. 2001). Greeley and others have debated whether the contraception controversy or cohort effects related to Vatican II are more fundamental in affecting the changing beliefs and behavior of American Catholics (D'Antonio et al. 1996; Davidson 1997; Greeley 1997). Whichever view is correct and whether the subsequent secularizing trend should be evaluated positively or negatively, there is little disagreement that Catholics generally, and their universities particularly, are far less religiously focused than they were fifty years ago.

In the past two decades, the popes and the Vatican curia have called Catholic universities to a renewal of their religious identity, beginning with the 1990 publication of the apostolic constitution *Ex Corde Ecclesiae* (John Paul II 1990). This document, conceived as a "Magna Carta" for Catholic universities, provided new clarity regarding the identity and mission of a Catholic university by setting forth not only principles that defined these matters abstractly, but also juridical norms that began to distinguish, in a concrete and functional way, just what it is about a university that makes it distinctly Catholic. The authority and responsibility for ensuring that Catholic universities regained their religious focus were vested in the American bishops. Subsequent speeches and actions, under two successive popes, have reinforced the Vatican's seriousness about the issue. In the ensuing twenty years, the Catholic bishops and universities in the United States have wrestled with the issue of how to be both genuinely Catholic and a genuine university.

Sometimes bishops and universities have also wrestled with each other, as differing interpretations, authorities, and interests have come into conflict. Since the 1990 publication of *Ex Corde Ecclesiae*, over two dozen U.S. Catholic universities (about 10 percent) either have been declared by Church authorities to be no longer Catholic, beginning with Marist College and Nazareth College in New York, or have formally relinquished any Catholic affiliation, such as Stevenson College in Maryland (formerly Villa St. Julie College). Others have embraced a strong distinctly Catholic identity as central to their institutional identity and mission. The large majority of Catholic universities, however, have charted a middle

course between these extremes, attempting to be simultaneously a respectable American university and a faithful Catholic institution.

Whether or not such a moderate course is possible in principle, in practice the attempt to avoid both indifferent secularity and Catholic exceptionalism appears to have led to indifferent Catholicism. Reporting in 2004 on over 120 interviews with Catholic university administrators about the Catholic identity of their institutions, Morey and Piderit found that Catholic university leaders, under intense pressure for institutional success as defined by the norms of the secular academy, repeatedly opted for a nominal Catholic identity. Catholic universities, they observe, “are willing to put a dash of religion in their collegiate stew, but, wary of having it overpower, they put just enough to make it interesting, not enough to make it truly distinctive” (Morey and Piderit 2006: 349). More recently, Hendershott has expanded on this thesis in the book *Status Envy*, which documents numerous recent Church-academy conflicts to argue that a substantial “loss of the Catholic identity is occurring on Catholic campuses throughout the country as faculty and administrators pursue upward mobility by shedding much of their Catholic culture to conform to status expectations” (Hendershott 2008: 9).

What has been the effect of this apparent religious inattention on students? Surprisingly, this rather fundamental question has received scant attention. In all of the discussion of *Ex Corde Ecclesiae*, little attention has been paid to the reason that Catholic institutions of higher education exist in the first place: their students. Indeed, the question of the relationship between the faith development of Catholic students and the secularity of their schools has not even been raised. Do students increase or decline in orthodoxy of belief and/or practice during their college years, and does it make any difference whether they attend a secular or religious school? What practices or features of an institution promote (or detract from) the faith development of students? This issue, of course, is not confined to Catholic universities but is a concern for any religious university.

In 2005, Archbishop J. Michael Miller, Secretary of the Vatican Congregation for Catholic Education, gave impetus to such questions by proposing that measures of student religiousness could serve as benchmarks to assess the Catholic character of a university. In an important address at Notre Dame, he put American Catholic universities on notice that the presumption that the Church wants to preserve universities that retain only a nominal Catholic identity may be giving way to a presumption that “if a nominally Catholic university is no longer motivated by a strong sense of its institutional Catholic identity, it may be better to let it go, to end its claim of being Catholic” (Miller 2005: 13). In a related interview, Miller suggested that useful benchmarks for determining a university’s effective Catholicity could include assessments of students’ sacramental and devotional life, their doctrinal and religious beliefs and attitudes, and their practice of the

faith. Do students pray, attend Mass regularly, and show an interest in vocations? Do they support and show interest in what the Church teaches? The question American Catholic universities must face, Miller's speech clarified, is not "how 'Catholic-lite' a university can be and still be 'Catholic,' but whether it is an honest and effective Christian witness. . . . The burden of proof," he added, "now falls on the university itself" (Allen, 2005: A1).

### *REVIEW*

Scholarly interest in the role of religion on American college campuses has grown in recent years. The uniformly secular ethos of the 1960s and 1970s academy has given way to more acceptance of diversity in religion as well as in ethnicity and gender, and there is evidence that recent cohorts of college undergraduates may have grown more personally religious. A landmark study of student religiousness by the Higher Education Research Institute (2005) found that about eight in ten college students believe in God and in the sacredness of life, say that they are interested in spirituality, and identify with a religious denomination. Four in ten college students report that religion is very important in their lives, and two in ten say that they discuss religion frequently. Seventy percent of college students identify as Christians—20 percent more than the proportion in the general population—almost one third (31 percent) of these professing to be born-again Christians. Several subsequent studies have confirmed these findings (for a review, see Mayrl and Oeur 2009).

The long-standing truism that college secularizes religious individuals has been challenged by recent studies showing that while religiousness does decline during college, college students decline less in belief, though not in practice, than their contemporaries who opted out of college and that both religious faith and practice rebound to even higher levels after graduation (Uecker, Regnerus, and Vaaler 2007). However, widespread religious belief during college does not appear to translate into corresponding religious practice. A flurry of studies has found that church attendance and prayer practices drop sharply during college, with regular or frequent practice dropping much more than occasional practice, suggesting that, in sum, college student religiousness is "more broad than deep" (Mayrl and Oeur 2009: 260).

In all this renewed interest in student religiousness, the experience of college has been treated as generic. Despite the presence of a substantial minority of religiously affiliated colleges, many of whom claim to foster a religious identity or a more meaningful college outcome because of their religious character or history, very little research has examined the effect of institutional college religious identity on differences in student religiousness. In a definitive review of the more than

2,500 extant studies of the social effects of college on students, Pascarella and Terenzini (2005: 292) found only “two studies that dealt with net college effects on student religious attitudes and values”; both studies were too flawed to suggest what the effect might be. They found no research whatever that has examined how college affects religious activity, such as prayer, church attendance, or religiously related service activity. The authors conclude that that this is “an area of the scholarship on college effects that needs more empirical attention” (Pascarella and Terenzini 2005: 293). The state of knowledge has improved somewhat since then, with the completion of two or three studies in this area, discussed below; but a more recent review of research on religion in college still laments that “we know little of how the religious composition and organization of religious life varies on . . . different types of campuses, let alone how these campus cultures might influence students’ religious commitments. Do denominational colleges improve students’ ability to retain their beliefs?” (Mayrl and Oeur 2009: 261).

In line with the wider trend, interest in student religion in Catholic universities has also increased, stimulated by the magisterial interest reflected in Archbishop Miller’s remarks and earlier by *Ex Corde Ecclesiae*. To date, however, there have been just four studies to my knowledge that have examined student religiousness as reflective of the identity or effectiveness of Catholic universities. The findings of all four are suggestive and lead to helpful insights but are not necessarily representative of American Catholic universities.

Two studies that produced somewhat different findings and distinctly different interpretations examined results from the survey programs of the Higher Education Research Institute (HERI) comparing the freshman year and junior or senior year responses of several thousand Catholic students at several dozen Catholic universities nationwide. Reilly (2003: 43), reporting on 2001 data, observed that “the HERI survey results show increasing dissent and declining morality among students during their four years of a Catholic college education.” In the findings, the proportion of students attending church “frequently” dropped by over a quarter (25.7 percent) from freshman year to junior year; the proportion of those attending “not at all” rose by 10 percent. The proportion of students who prayed dropped by 12 percent. Dissent from church teaching rose by 14 percent on abortion, by 17 percent on same-sex marriage, and by 21 percent on premarital sex. By the logic of Miller’s benchmarks, that is, that students’ belief and commitment should increase during exposure to a Catholic college, these results, if they are accurate and representative, clearly indicate that Catholic identity or effectiveness is extremely weak at Catholic universities.

A replication of the above findings by Gray and Cidade (2010) using similar HERI data six years later found smaller declines in student Catholic identity on most comparable measures, which these authors interpret as suggesting that the

effectiveness of Catholic universities may be increasing. However, on most measures, the reduced decline was not due to the fact that Catholic university students were less dissenting as juniors but to the fact that they were less consenting as freshmen. Approval of premarital sex, for example, rose only 9 percent in 2007 (compared, as already noted, to 21 percent in 2001), but approval of premarital sex among comparable entering freshmen rose by over ten percentage points between 2001 and 2007; the resulting levels of approval of premarital sex among Catholic college juniors is similar in the two years (48 percent in 2001 and 46.4 percent in 2007). Likewise, frequent church attendance dropped by six fewer percentage points by 2007 but from a freshman level of frequent attendance that was ten points lower in the 2007 survey (58.4 percent) than in the 2001 survey (68.3 percent). The resulting junior year frequent church attendance was lower in 2007 (39 percent) than in 2001 (43 percent). It seems strange to interpret this kind of change as an improvement in Catholic identity, a point that I will pursue in the next section. At the same time, Gray and Cidade found that students feel that they have a strong commitment to being Catholic and are growing more religious in college.

These two studies helpfully raise and explore issues of student religiousness at Catholic colleges, but there are good reasons to doubt both the accuracy and the representativeness of their findings. The HERI survey data are not based on a representative sample of U.S. Catholic universities. Institutions voluntarily participate in HERI surveys for a fee, a condition that biases the data toward larger, better-funded universities; but Catholic universities tend, as a group, to be smaller and less well funded. Fewer than one sixth of Catholic universities participate in any given year, and fewer than one third have ever participated in a HERI survey. Moreover, many universities that do participate do so intermittently, participating one year, then skipping a year or more before participating again. This reduces the reliability of the data for observing trends, since the list of participating institutions is different each year. The Catholic universities that participated in 2001, for example, were not the same as those that participated in 2007. Furthermore, student participants are not randomly selected by the researchers but are chosen by each participating institution in an unknown way that no doubt varies from one institution to another. To the extent to which Catholic universities are relatively homogeneous, the HERI findings may raise, but do not settle, the question whether the trends observed in the data actually represent more general trends among Catholic universities. Both studies that have used the HERI data acknowledge most of these limitations. They have used the data, despite their flaws, for the simple reason that there is no other accessible source of similar information on Catholic universities.

In the only other study that focused on Catholic institutions, Bolduc (2009) measured student religiousness at four Catholic colleges in the Northeast as a kind of validation of the possibility and usefulness of student benchmark data for institutional Catholic identity. In addition to looking at change in religiousness during college, he compared the colleges on the magnitude of aggregate religiousness among their students, a sensible practice for which I will argue further below. Bolduc found that there were meaningful differences in religiousness among the four colleges; two of the four were consistently higher on most measures of fidelity and Catholic practice than the other two. Deploying an impressive array of questions that explored a wide range of religious dimensions, Bolduc found that Catholic commitment and practice dropped substantially during college: “At every college, far more students reduced their attendance at religious services than increased it. . . . At none of the four colleges did more students increase their commitment to the Catholic Church rather than decrease it” (Bolduc 2009: 137). General or subjective religiousness did not decline as much as more specific Catholic religious activity did, and campus ministry activities tended to increase the faith or spirituality of a small proportion of students. Bolduc (2009: 139) commented, “Why so many changes were in the direction of decreased religious commitment—especially toward the Catholic Church—is a question worthy of further research.” Like the HERI studies, Bolduc’s data are suggestive but are not representative of any larger group of Catholic universities.

Other research that includes, but is not focused on, Catholic universities has confirmed these findings. In a study of institutional influences on religious participation during college, Hill (2009) compared student religious participation at public, Catholic, evangelical, and mainline Protestant colleges using data from the National Longitudinal Survey of Youth (NLSY). He found that in all types of colleges, religious participation drops from freshman to junior year but that “students attending Catholic and mainline Protestant affiliated institutions decline in religious participation at a faster rate than students attending evangelical institutions or students attending nonreligious public colleges and universities.” Students at Catholic colleges begin college with higher rates of church attendance than do public university students, but “[b]y Year 3 of college, students attending Catholic . . . institutions look remarkably similar in their level of religious participation to those that attend public institutions” (Hill 2009: 515). Henderson (2003) also found that the religiousness of Catholic students in Catholic schools declined slightly during college.

Although too sparse for their results to bear much weight, these few studies do produce some common findings about student religiousness at Catholic universities. Most significantly, all four studies found that religious participation declines during attendance at a Catholic college. Reilly (2003) and Hill (2009) found that

the decline in religiousness of students at Catholic universities is comparable to that at public universities; Gray and Cidade (2009) and Bolduc (2009) suggest that it is somewhat higher. The three studies focusing on Catholic institutions found that student religiousness varies among Catholic colleges and over time. They also agreed that student religiousness declines more, and more consistently, with regard to church attendance and other objective, public religious behaviors than with regard to private, subjective religious practices or feelings.

These findings have several implications for the project of assessing Catholic identity by means of student religiousness. First, they suggest that a decline in student religiousness is not necessarily dispositive regarding the intensity of a college's religious focus. Hill found that students who were less religious entering college experienced less of a decline in religiousness during college, an effect that is also observed in the comparison of Gray's and Reilly's findings presented earlier. The statistical dynamic of regression to the mean suggests that this trend will be a general one; in other words, larger drops in religiousness are more likely at more religious colleges, not less religious ones. If average weekly Mass attendance during college drops from 80 percent to 50 percent at school A and from 50 percent to 30 percent at school B, which school has greater Catholic identity? This question is not hypothetical. Reilly (2003) reported a freshman-to-senior decline in frequent Mass attendance at Catholic universities of 26 percent, from 68.3 percent to 42.6 percent. But for all students nationwide, frequent church attendance declined by 23 percent during the first three years of college, from 52 percent to 29 percent (Astin, Astin, and Lindholm 2010). Does this mean that Catholic colleges, where, after a greater decline, 43 percent of seniors go to church, are to be considered less religious than secular universities, where only 29 percent of seniors still go to church? Clearly, the outcome level of Mass attendance is at least an important additional consideration. A measure of average church attendance combining the four years of college reflects both the level and rate of decline in Mass attendance and therefore may be a better benchmark or predictor of institutional Catholic identity than is either decline or level of Mass attendance by itself.

Second, subjective indicators of religiousness, such as how religious students felt they were or how much they had increased or declined in religiousness during college, did not vary as much by institution and did not correlate highly with more objective measures of religious participation or activity. This suggests that the latter may be more sensitive to, and may more accurately reflect, differences in Catholic identity.

Finally, only one study so far, that of Bolduc (2009), has actually compared different Catholic colleges using the same survey measures. Although he found differences in student religious participation that are encouraging with respect to the possibility of comparative benchmarks, we do not know whether this variation

extends to a larger group of colleges. Because of the need to preserve the anonymity of the participating colleges, Bolduc was unable to be very specific about the institutional characteristics that related to differences in student religiousness.

The limited findings of this brief review make one implication clear: To effectively examine the relationship between student religiousness and institutional identity will require baseline data by which universities can be compared on both student religiousness and institutional characteristics. Only in this way can the effect of different institutional characteristics on variations in student religiousness be determined.

### *METHODS*

One way to gain the kind of data required to address these questions more fully is through a meta-analysis. This research procedure synthesizes a group of research studies into a common frame of reference that permits their individual findings to be compared and analyzed again (meta-analyzed) as if they were separate findings of one large study. Each of the individual findings, in essence, becomes one case in a dataset composed of the aggregate findings of all the studies (Glass et al. 1981).

To try to address the questions raised above, I conducted a meta-analysis of extant social science studies to collect data on student religiousness by college or groups of colleges. The procedure began with an extensive search of library catalogues and scholarly databases for empirical studies, books or surveys that had collected data on religiosity among Catholic university students. Over thirty independent databases (e.g., ERIC, PsycINFO, JSTOR, Dissertation Abstracts) were searched by using variants and combinations of the terms “Catholic,” “university,” “college,” “religion,” and “students.” This initial search discovered fifty-one studies of U.S. Catholic university students that had been published within the past fifty years.

Owing to a lack of social science consensus on measuring religion and related concepts, the initial search was not confined to any particular metric. The studies that were discovered in the search used a wide variety of religious measures, reflecting their varying interest in religious doctrine, attitudes, or behavior. Altogether, I found nineteen different religious measures used in the fifty-one studies. Nine multiple-item scales that were constructed on a psychometric model were employed in various studies: scales of External Religiousness, Internal Religiousness, Spiritual Engagement, Spiritual Quest, Spiritual Identification, and Personal Faith Involvement; the Religious Life Inventory, Faith and Religious Values Questionnaire; and the Santa Clara Strength of Religious Faith Questionnaire (SCSORF). In addition, ten direct or single-item measures of religiousness were

used in various studies: church attendance, frequency of prayer, the importance of religion, belief in God, belief in an afterlife, religious change during college, belief in transubstantiation, views on abortion, views on contraception, and views on homosexuality. This list is arranged from most to least frequent and excludes minor variants.

Only the first three direct measures—church attendance, prayer, and the importance of religion—were used in three or more studies, the amount necessary for minimal comparative purposes. Accordingly, I dropped studies based on other direct measures from the meta-analysis. I then examined the multiple-item scales both substantively and statistically to assess whether they plausibly corresponded to one of the three remaining dimensions. Some scales, such as Internal Religiousness and the SCSORF, exhibited properties that were highly correlated with the importance of religion measured directly. Others, such as External Religiousness and the Religious Life Inventory, overlapped highly with the religious activity dimension measured directly by church attendance. Studies that employed such scales were retained in the meta-analysis as representing the corresponding direct measure; the remaining studies were dropped from the analysis. Altogether, I excluded fifteen studies owing to a lack of comparable measures. An additional ten studies were subsequently dropped for lack of sufficient information or clarity to enable further analysis; in most cases, these studies failed to report standard deviations (or enough information to permit standard deviations to be estimated). For the remaining twenty-six studies, I transformed measures of church attendance, prayer, and the importance of religion into a common scale and standardized them for comparison.

In all the included studies, church attendance was measured by an ordinal scale, which ranged from three to nine categories in various studies. The question was, with variants, “How often do you attend religious services?” The lowest category in all the scales was “Never” or “Not at all.” For most studies, the highest category was “Daily” or “More than once a week.” For three studies, the highest category was “Weekly.” The most extensive metric was the nine-category scale used on the General Social Survey (or a close variant), with options of “Never,” “Less than once a year,” “About once or twice a year,” “Several times a year,” “About once a month,” “Two to three times a month,” “Nearly every week,” “Every week,” and “Several times a week.” Prayer was measured by the question (or a variant) “How often do you pray?” Response categories ranged from “Never” to “Several times a day” with two to five intermediate categories. Importance of religion asked “How important is religion in your life?” or a very similar question. A close variant was “How religious are you?” Response options ranged from two to five categories, typically including “Very important,” “Somewhat important,” “Not very important,” and “Not important at all.” For these variables,

scale mean values were equated by substantively matching category assignments as closely as possible, collapsing or partitioning distributions as necessary; expressing the linearized mean and standard deviations in standard form; and then computing the outcome statistic relative to the reference value.

The statistic resulting from this analysis was an effect size, which is a measure of the strength of the relationship between two variables that is independent of the particular characteristics of the population in which they occur. An effect size therefore does not reflect any real-world measurement, such as inches or income or points on an exam, but is expressed in terms of standard deviations, that is, the amount of variation on a standardized distribution that is represented by the effect in question. Effect sizes give us a fairly precise basis for comparing results but cannot be easily related to actual behavior. If the effect size for a variable's effect on church attendance is 0.20 for one group and 0.60 for another group, for example, we can say that the effect of the variable is three times as large for the latter group. We also know that the latter group, net of other effects, attends church more often, perhaps much more often, but we are unable to say exactly how much more often.

An effect size presumes a comparison between two values, on the model of an experiment in which one value reflects the treatment condition and the other is a control condition. Because this study is interested in the unique effect, if any, of Catholic universities on student outcomes, the "treatment" is attendance at a university that is Catholic, in contrast to the "control," which would be attendance at a non-Catholic or secular university. In this comparison, we are asking the question "What difference to student religiousness does it make to attend at a particular university that is Catholic, as opposed to any other university?"

The measure of effect size computed for this study was Cohen's  $d$ , a common meta-analytic statistic. This is a measure of comparable effects that adjusts for the pooled variance of the two distributions that are being compared. Values can range from zero to infinity, though values over 4 are not practically feasible. Cohen proposed that, in general, a  $d$  of 0.20 or less represents a small effect and a  $d$  above 0.80 indicates a very large effect. Values between these amounts express moderate effects.

The most plausible control value therefore would be the average religiousness, on any particular measure, of U.S. college students who are not attending a Catholic college. This number is not publicly available; however a close proxy, which results in a conservative measure of effect size, is the average religiousness of all U.S. college students. Suitable data to provide this information were available from the 1997 wave of the NLSY. This large dataset, funded and administered by the Bureau of Labor Statistics of the U.S. Department of Labor, followed a representative sample of the U.S. population of college age in 2002 through all four

years of college. In each year, participants completed a lengthy interview that gathered information about their religious activities and attitudes, among many other things. Reference values for this study were computed from aggregate 2002–2005 NLSY data for college students only ( $N = 8,935$ ).

Because this control value includes Catholic university students, effect sizes in this study may be understated. However, because the same control is used for all effect sizes, this has no effect on any comparison among effect sizes. Moreover, any understatement of effects is probably very slight. As was mentioned above, Hill (2009), in his analysis of NLSY data that did include college religious affiliation (from sources not readily available),<sup>1</sup> reported that there was no significant difference in the drop in church attendance between students attending Catholic universities and those attending public universities. Earlier, Reilly (2003) reported the same result, using HERI data.

To measure church attendance, the NLSY asked, “In the past 12 months, how often have you attended a worship service (like a church or synagogue service, or a service at a mosque)?” Possible responses were “Never,” “Once or twice,” “Less than once a month,” “About once a month,” “About twice a month,” “About once a week,” “Several times a week,” and “Everyday.” The raw mean value for U.S. college students in 2002–2005 was 3.35 (standard deviation: 1.99); the standardized mean used for reference is 0.479 (s.d.: 0.283). Substantively, this indicates that U.S. college students attend worship services, on average, about every other month. Twenty-three percent of respondents attend church every week or more often, and 22 percent never attend.

For the importance of religion, NLSY asked, “How important or unimportant is religious faith in shaping how you live your daily life?” Response options were “Extremely important,” “Very important,” “Somewhat important,” “Not very important,” and “Not important at all.” The standardized mean response for all college students was 0.500 (s.d.: 0.325).

For prayer, the NLSY asked whether the statement “I pray more than once a day” is true or false. This unusually strict standard results in a mean value that is certainly low for comparison purposes. As was noted above, most metrics on prayer also distinguish praying daily, praying less often than daily, and never praying. The standardized mean used for reference was 0.336 (s.d.: 0.472). This indicates that one third (33.6 percent) of students in college reported that they prayed more than once a day.

These values from the NLSY compare reasonably with similar measures from the HERI data. Bowman and Small (2010) combined two scales of spirituality

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<sup>1</sup> The publicly available NLSY data do not identify individual colleges, but this information can be obtained at additional expense after screening and approval by a university researcher’s institutional review board. The current study lacked the resources to obtain these additional data.

(Spiritual Identification and Spiritual Quest) constructed from the 2004 and 2007 College Student Beliefs and Values (CSBV) HERI supplement to measure dimensions of what generally corresponds to subjective religiosity. The standardized mean value of their spirituality scales, at 0.504 (s.d.: 0.203), is almost identical to the 0.500 mean for subjective religiosity on NLSY. Bowman and Small's mean "Spiritual Engagement," a statistic that largely reflects church attendance, is 0.491 (s.d.: 0.199), which is similar to NLSY's mean of 0.479. The NLSY, which reflects a random sample, is likely more accurate; however, none of the analyses of this study would result in different conclusions if the reference values were based on the HERI data.

The result of this procedure of search, analysis, refinement, and statistical transformation was a set of twenty-six independent data traces on the religiosity of students at Catholic universities. Table 1 presents the list of studies and related effect sizes. Four studies used HERI data or other national combined data. The twenty-two studies that reported data from a single institution reflected a total of 5,700 cases, an average of 250 per institution; institutional samples ranged from 31 to 264 cases.

The studies that are included in the meta-analytic sample reflect a wide range of research contexts and theoretical interests. As was discussed above, the reports by Reilly (2003), Gray and Cidade (2010), and Bolduc (2009) (with data on four colleges), addressed directly the questions of this study. Barry and Nelson (2009) and McCrohan and Bernt (2004) also addressed institutional factors in student religiosity but were not focused on Catholic universities. The two studies with Moberg as the lead author (Moberg and Hoge 1986; Moberg and McEnery 1976) reported descriptive data on student religiosity at one Catholic university at three points in time. The remaining studies, for the most part, gathered data on student religiosity as an independent variable affecting some other factor, such as attitudes toward marriage or sex roles (Maher, Sever, and Pichler 2007; Prince 1966; Wicks and Workman 1978), psychological well-being (Epperly 1999; McElroy 1999), or alcohol use (Fenzel 2005). The studies by Plante and Boccaccini (1997), Freiheit and colleagues (2006), and Milevsky, Szuchman, and Milevsky (2008) were performed to validate or apply a new psychometric measure of student spirituality. Several other studies pursued a theoretical question in psychology or regarding spirituality using student surveys. Three of the included studies (Epperly 1999; McElroy 1999; Polichnowski 2008) are unpublished Ph.D. dissertations. Dissertations are considered particularly valuable for meta-analysis, since they have not been screened by a peer review process, which may introduce selective bias.

**Table 1: Studies Included in the Meta-Analysis for Catholic College Student Religiosity, Listed by Effect Size for Subjective Religiosity**

| <b>Study</b>                     | <b>Year</b>    | <b>Mass Attendance</b> | <b>Subjective Religiosity</b> | <b>Frequency of Prayer</b> |
|----------------------------------|----------------|------------------------|-------------------------------|----------------------------|
| Singleton                        | 2002           | 0.18                   | 0.85                          | 0.49                       |
| Bolduc C                         | 2009           | 0.07                   | 0.78                          | 0.55                       |
| Bolduc D                         | 2009           | 0.04                   | 0.78                          | 0.59                       |
| McCrohan and Bernt               | 2004           | —                      | 0.51                          | 0.60                       |
| Milevsky, Szuchman, and Milevsky | 2008           | —                      | 0.50                          | —                          |
| Freiheit et al.                  | 2006           | —                      | 0.45                          | —                          |
| McElroy                          | 1999           | —                      | 0.44                          | —                          |
| Maher, Sever, and Pichler        | 2007           | —                      | 0.38                          | —                          |
| Plante and Boccaccini            | 1997           | —                      | 0.21                          | —                          |
| Fenzel                           | 2005           | —                      | 0.21                          | —                          |
| Bolduc A                         | 2009           | -0.13                  | 0.15                          | 0.41                       |
| Brady and Hapenny                | 2010           | 0.95                   | 0.14                          | 0.34                       |
| Bolduc B                         | 2009           | -0.20                  | 0.12                          | 0.41                       |
| Barry and Nelson                 | 2005           | 0.09                   | 0.11                          | —                          |
| Rose                             | 1963           | 2.38                   | —                             | —                          |
| King                             | 1991           | 1.87                   | —                             | —                          |
| Moberg and Hoge                  | 1986<br>(1961) | 1.01                   | —                             | 0.26                       |
| Prince                           | 1966           | 0.77                   | —                             | —                          |
| Reilly                           | 2003           | 0.54                   | —                             | —                          |
| Gray and Cidade                  | 2010           | 0.37                   | —                             | —                          |
| Moberg and Hoge                  | 1986<br>(1982) | 0.28                   | —                             | 0.38                       |
| Polichnowski                     | 2008           | 0.23                   | —                             | —                          |
| Moberg and McEnery               | 1976<br>(1971) | 0.21                   | —                             | 0.05                       |
| Epperly                          | 1991           | 0.12                   | —                             | —                          |
| Wicks and Workman                | 1978           | 0.00                   | —                             | —                          |
| Feldman and Newcomb              | 1969<br>(1962) | —                      | —                             | 0.88                       |

“Year” reports the year of the study, not the year of data collection. Where data collection occurred five or more years before the study, the year of data collection is reported in parentheses. Bolduc reported findings from four confidential Catholic college surveys, which are reported in the table as Bolduc A, B, C, and D. Moberg and Hoge reported results from two college surveys, which are listed by survey year.

In addition to student outcomes, a wide array of institutional characteristics for each included college were recorded in the database for analysis. A review of college websites and other informational material provided data on educational program and student religious affiliation. Other institutional factors, such as tuition, endowment, faculty salary, and admissions yield, were obtained from the Integrated Postsecondary Education Data System (IPEDS) database maintained by the National Center for Education Statistics (2010) of the U.S. Department of Education. Table 2 presents a complete list of the institutional characteristics used in this study.

**Table 2: Correlation of Student Religiousness with Selected Catholic University Characteristics**

| Item                                 | Church Attendance | Prayer  | Subjective Religiousness |
|--------------------------------------|-------------------|---------|--------------------------|
| Year                                 | -0.50*            | —       | —                        |
| Percent Catholic students            | 0.84**            | —       | —                        |
| Subjective religiousness             |                   | 0.78 ** |                          |
| Percent female enrollment            | 0.73*             |         |                          |
| Percent admitted                     | 0.69*             |         |                          |
| Admissions yield                     | 0.60***           |         | 0.72 *                   |
| SAT Critical Reading 25th percentile | -0.68*            |         |                          |
| SAT Math 25th percentile             | -0.85**           |         |                          |
| SAT Critical Reading 75th percentile | -0.63***          |         |                          |
| SAT Math 75th percentile             | -0.76**           |         |                          |
| Carnegie Undergraduate Profile       | -0.88**           |         |                          |
| Number of full-time faculty          | -0.57*            |         |                          |
| FTE enrollment <sup>a</sup>          | -0.60***          |         |                          |
| Urbanization                         | 0.64*             |         |                          |
| Carnegie Size and Setting            | -0.66*            |         |                          |
| Total tuition and fees               | -0.71*            |         |                          |
| Value of endowment assets            | -0.72*            |         |                          |
| Average faculty salary               | -0.91**           |         |                          |

Reports Cohen's *d* compared to 2000–2010 NLSY college average.

\*Significant at 0.05; \*\* significant at 0.01; \*\*\*  $p < 0.052$ .

<sup>a</sup>FTE = full-time equivalent.

### *HYPOTHESES*

The meta-analysis attempted to gain data to test a number of research questions rising out of the issues discussed in the introduction and review above. Meaningful information was found to address many, though not all, of these questions.

The first three hypotheses reflect basic assumptions about the religious culture of Catholic universities that are often assumed to be true but have never been tested empirically. First, are there substantial institutionally related differences in religiousness among Catholic universities? This question is fundamental to the notion of benchmarks, which assumes that institutional differences are associated with significant variation in student religiousness. This is very likely true, although it has not been empirically tested. The presence of significant correlations of religiousness with institutional characteristics provides a clear test of this hypothesis in these data.

Second, is student religiousness at Catholic universities any higher than that at non-Catholic or secular universities? The findings in the literature reviewed above were mixed on this question, which is fundamental for the debate over Catholic identity. To what extent, if any, are Catholic universities responsible for student catechesis and faith development? On the other hand, if student religious outcomes at Catholic universities are no different (or possibly lower) than those at secular ones, what is the justification for the Church supporting Catholic universities? Owing to selection effects, results on this question in these data are not entirely dispositive for this debate. For the same reason, that is, that students who are more religious choose to attend Catholic schools, it is plausible that average student religiousness will be somewhat higher at Catholic universities even if their Catholic character were entirely nominal. In line with the methods discussion above, average overall religiousness will be used to test this hypothesis; this test is embedded in the effect size numbers, which directly report aggregate student religiousness for each university compared to the secular university average.

Third, are students at Catholic universities growing more or less religious over time? As I noted in the introduction, a wealth of anecdotal and ad hoc evidence asserts that religious activity at Catholic universities has dropped steeply since the 1960s, in line with the general trend of declining religiousness among all American college students. Whether this is the case empirically can be tested directly by examining average religiousness by year in the meta-analysis data. This question goes directly to the issue of secularization over the long term. In the short term, as was discussed above, it is pertinent to the relationship between Catholic university religious culture and that of secular universities, where religiousness is rising.

Although I had hoped to be able to look at changes in religiousness during college or to compare Catholic universities on a number of other measures of student

belief and values related to the Catholic faith, the meta-analysis did not yield sufficiently dense information on these issues to permit meaningful analysis. There was not enough variation by academic class (freshman, sophomore, junior, senior) to examine changes in student religiousness during college. Almost half of the included studies (twelve of twenty-six) did not report the academic year of the respondents. Only three studies presented findings for a single academic year, in all cases juniors. No study included data from seniors. The remaining ten studies combined data from several academic years. On other Catholic-related measures of beliefs and values, there were simply too few cases for meaningful analysis. Only seven studies reported students' views on abortion or on their own change in religiousness during college. Five studies reported views on contraception, five reported on premarital sex, four reported on transubstantiation, and four reported on belief in God. Examination of these questions will have to wait for more complete data.

Three further questions addressed theories or practices designed to explain some or all of the differences in student religiousness (if any). These questions will each be described more fully in the course of the analysis below. The first of these, or the fourth question overall, examines whether the notion of a moral community, or peer influence, accounts for any of the difference in student religiousness. Peer influence or community is related to the percentage of students in the university who are Catholic. Catholic universities that have a higher proportion of Catholic students are likely to be ones in which Catholic culture and norms are more dominant. Such universities are likely have higher religious participation per student. The fifth question examines the notion of status envy by testing the association of religiousness with institutional status. If the status envy theory is applicable, then institutions with higher institutional status or indicators of success will have lower student religiousness. This question can be tested by examining the association of institutional selectivity, size, and financial status with levels of student religiousness. My hypothesis was that the association will be negative. Sixth, what effect, if any, do required theology and/or philosophy courses have on student religiousness? Required theology or philosophy courses are generally considered essential carriers or evidence of a university's Catholic mission and are often the major curricular arrangement in which the university invests to instill Catholic identity. The effect on student religiousness is tested directly by examining whether universities that have more required theology/philosophy courses also have higher student religiousness. My hypothesis was that they will.

## ANALYSIS AND DISCUSSION

Table 2 presents the significant meaningful correlations of Catholic universities' institutional characteristics with student religiousness from the combined meta-analysis data. These findings are presented here for reference and will be referred to throughout the discussion below.

### *Religious Feelings Versus Practices: A Benchmark Caution*

On the first hypothesis, which predicts that there are substantial institutionally related differences in religiousness among Catholic universities, Table 2 yields a surprising result: Church attendance varied in many ways according to the institutional features of the Catholic university, but prayer and subjective religiousness had almost no relation to institutional characteristics. Subjective religiousness was significantly correlated with only one institutional characteristic, and student prayer activity was not correlated with any. By contrast, church attendance was significantly correlated with eighteen institutional characteristics.

Prayer and subjective religiousness were highly correlated (+0.78), while neither was correlated with church attendance. The first two variables therefore appear to measure a similar dimension that is distinct from the dimension of religiousness that is measured by church attendance. They may be measuring what is more properly called spirituality rather than religiousness. A better distinction might be between religious affections, which are measured by prayer and self-assessed religiousness, and religious participation, which is measured by church attendance. On the basis of the results described in the review section above, I predicted that affections would be less highly affected by institutional identity than participation, but I did not envision that the disjunction would be so extreme.

This counterintuitive result, if confirmed by further research, is highly consequential for the idea and application of benchmarks of student religiousness. Benchmarks that measure personal, private activities, attitudes, or subjective, self-assessed religiousness will not be able to distinguish among Catholic universities in important ways. Questions that ask students about religious feelings—such as how committed they are to their faith, how strong a Catholic they are, even their attitudes and beliefs, and especially how spiritual they are—do not appear to relate very well to the institutional characteristics of the particular Catholic university they attend. To assess differences of institutional arrangements and culture relative to Catholic identity, benchmarks will need to measure objective, observable, public religious activity, even if they do so by self-reports.

None of the institutional features measured in Table 2 are themselves explicitly religious or directly related to the institutions' Catholic identity. Benchmarks

that include institutional activities and characteristics that directly promote Catholic identity and that measure students' particular beliefs and behavior in relation to Catholic doctrine more explicitly may well reveal associations between institutions and student religiosity that are not visible here. Indeed, the prospect that they may do so, and thereby provide policy guidance for encouraging stronger student outcomes related to Catholic identity, constitutes one of the strongest prospective benefits of developing such benchmarks, which currently do not exist. I will return to this point in the conclusion.

### *The Catholic Difference*

Are students at Catholic universities no more religious than those at secular schools? To this, our second question, the answer in these findings is "no." All measures of religiosity in this study agree that student religiosity at Catholic universities is higher, on average, than that at non-Catholic or secular schools. Of all the individual effect sizes reported in Table 1, only two are negative. The increased "Catholic difference," moreover, is about the same regardless of how it is measured.

Table 3 reports the average effect size comparing Catholic university students to all U.S. university students for all three religious measures. Over all the included studies, Catholic university students exceeded the average religiosity for U.S. college students by two fifths to one half of a standard deviation. This difference, of course, may have little to do with the Catholic identity of the school, reflecting only the prior elevated religious interest of students who choose to attend a religious college. This is particularly likely in light of the findings, reviewed above, showing that religiosity tends to drop during attendance at a Catholic college. This question cannot be resolved in the absence of longitudinal data.

**Table 3: Mean Effect Sizes for Catholic University Student Religiosity**

| <b>Religiosity Measure</b> | <b>Mean Effect Size</b> |
|----------------------------|-------------------------|
| Church attendance          | 0.49                    |
| Subjective religiosity     | 0.40                    |
| Prayer                     | 0.45                    |

This "Catholic difference" may also reflect features of Catholic universities other than their Catholic identity, such as the fact that they are private universities, or a generic "religious difference" that characterizes all religiously affiliated universities. These important distinctions cannot be examined with the data available here, but Hill's (2009) study cited above gives a general indication, using the

NLSY, of their importance and effect on student religiousness. Hill reported estimated differences in student church attendance for several subsets of U.S. colleges and universities that are of interest here, including Catholic, public, private nonsectarian, mainline Protestant, and evangelical Protestant colleges. The latter group is divided further into those evangelical schools that are members of the Council for Christian Colleges and Universities (CCCCU), which tend to be more religiously conservative, and the remainder of evangelical schools that are not CCCCU members.

Table 4 reports mean church attendance for these groups of colleges, compared to Catholic universities; the table is adapted from Hill's findings.<sup>2</sup> The differences shown in the table cannot be compared to other data with sufficient precision, nor is it possible to assess their statistical significance, but they are reasonably reliable. The pattern of differences shown is generally compatible with my findings in this study. Church attendance at Catholic universities is higher than that at public and nonsectarian private universities generally, although the difference is small, and is very similar to that of mainline Protestant religious schools. Since nonsectarian private and public schools accounted for 86 percent of the students surveyed in the data Hill reports, the Catholic advantage in student religiosity over these types of institutions is consistent with my finding of a Catholic advantage generally. Moreover, the Catholic difference does not appear to be due to the fact that they are private universities; indeed, student religiousness at nonsectarian private universities is a little lower than that at public universities. At the same time, Table 4 suggests that at most other religious (Protestant) universities, student religiosity has a strong and positive association with the religious conservatism, increasingly strongly on a continuum from the relatively liberal mainline colleges to the non-CCCCU evangelical colleges and increasing yet again in the CCCCU colleges. This range of differences among Protestant universities is similar to the range that I found among Catholic universities, as discussed below, suggesting that a future study that is able to obtain a measure of the conservatism of Catholic institutions, which was not available to me for this study, may well find that similar religious and educational forces are involved. The comparisons in Table 4 may suggest other interesting and pertinent questions about student religiousness by college type among American universities that are beyond the scope of this study and could profitably be explored in future research.

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<sup>2</sup> The data in Table 4 are interpolated by inspection of Figure 1 in Hill (2009). Hill did not report the numbers for his findings but merely presented them in a chart. The values presented, moreover, are not direct measures, but the estimated values of a random effects regression. No measure of uncertainty, standard deviation, or indicator of significance is reported. Although they can be compared reliably with one another, the validity of the values is much too uncertain to support comparison to any external data.

**Table 4: Student Church Attendance at Catholic Universities Compared to Other College Types (Estimated)**

| College Type                      | Mean Church Attendance |
|-----------------------------------|------------------------|
| Evangelical Protestant (CCCU)     | 38                     |
| Evangelical Protestant (non-CCCU) | 26                     |
| Mainline Protestant               | -0.5                   |
| Public                            | -2                     |
| Private                           | -4                     |

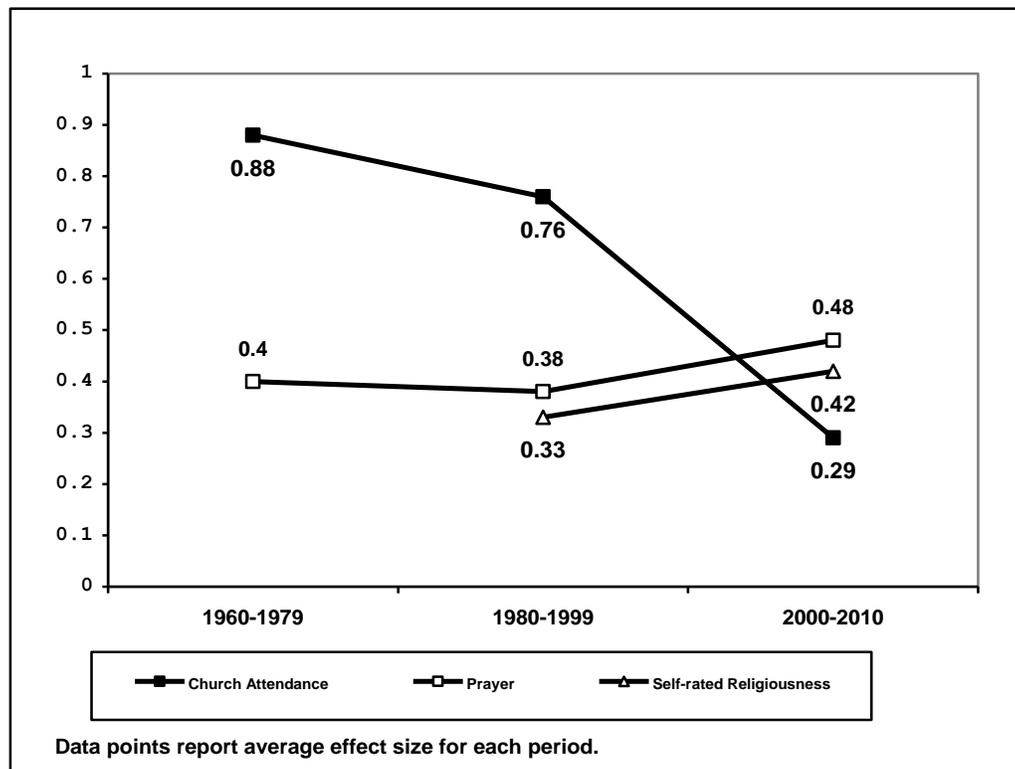
Reference value is Catholic university. Table values are transformed to percent difference.

### *Secularization*

On the third hypothesis, predicting declining religiosity over time, the data clearly indicate that over the past fifty years, there has been a sharp drop in church attendance at Catholic universities. From the 1960s to the 2000s, church attendance among Catholic university students plummeted by over two thirds, from 0.88 to 0.29. Figure 1 illustrates the trend. Table 2 reports a strong negative correlation (-0.50) of survey year with church attendance. This dramatic decline provides direct evidence of secularization, that is, declining conformity with expected Catholic practice, among Catholic university students.

It should be borne in mind that comparing Catholic university students in former periods to the U.S. average in a later period (2002–2005) does not tell us what the religiosity of Catholic university students was in the former periods compared to their contemporaries. Figure 1 tells us that Catholic university students in the 1960s and 1970s attended church at a rate about nine tenths of a standard deviation higher than all U.S. students in the early 2000s, but it does not tell us how much higher, if any, their church attendance was than the average of all university students in the 1960s. Religious participation among college students, as among all Americans, is generally acknowledged to have declined since the 1960s (though it appears to have rebounded somewhat recently). The decline in church attendance at Catholic universities, then, may reflect, in part or in whole, this more general secularizing trend in U.S. society.

**Figure 1: Trends in Student Religiousness in Catholic Universities, 1960–2010**



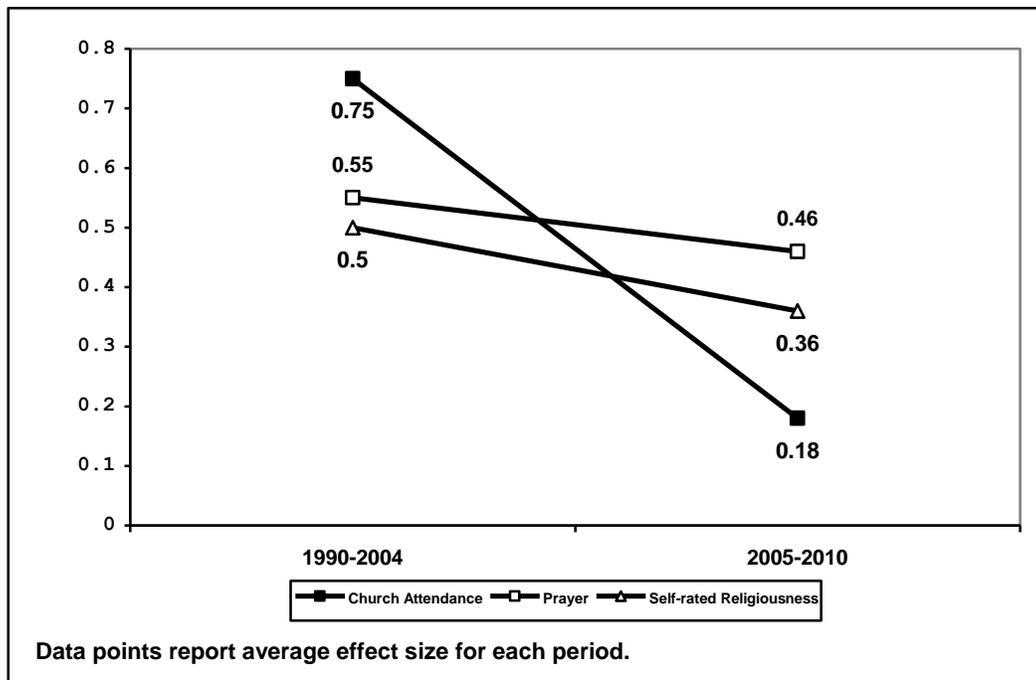
To the extent to which there has been a general decline in religiousness, it is clear that Catholic students have not fully resisted the secularizing forces; but they have not wholly succumbed to them either. Although the religiousness of students at Catholic universities is much lower than it was in the past, it is nonetheless demonstrably higher than religiousness at secular or non-Catholic universities. Even in the most recent period, at its lowest, church attendance among Catholic university students is almost three tenths (0.29) of a standard deviation above that of the average contemporary U.S. college student. As was noted above, an effect size on the order of a third of a standard deviation is substantial. The effect sizes for prayer (0.42) and self-rated religiousness (0.48) are even larger. Despite the steep decline, there still appears to be a “Catholic difference” among Catholic universities.

As with institutional variation, at the same time that church attendance has dropped, frequency of prayer and measures of the importance of religion have not declined; they have even risen slightly. The disparity in Figure 1, then, might reflect that Catholic university students have become less religious but not less spiritual since the 1960s. This is consistent with many studies that have found that Americans, particularly young Americans, increasingly separate spirituality from

religion and describe themselves as “spiritual but not religious” (see Astin, Astin, and Lindholm 2010).

Figure 1 shows that subjective religiosity and prayer activity were higher in the 2000s than in the period 1980–1999. This could suggest that the rising religiosity observed on college campuses around the turn of the century and recent efforts to emphasize Catholic identity have had a positive influence on religious affections or spirituality, if not church attendance, in the wake of the recent Vatican emphasis on recovering American Catholic university distinctiveness. Figure 2 suggests that this is not the case. This figure isolates the change in religiosity among students at Catholic universities since 1990, that is, since publication of *Ex Corde Ecclesiae*. Owing to sparse data, the fifteen years 1990–2004 were collapsed into one category, shown on the left side of the figure. The right side reports the five-year period for which the most recent data are available, 2005–2010. Although there may have been fluctuation before the this period, it is clear that on all measures, student religiosity at Catholic universities declined in 2005–2010. Students at Catholic universities now pray less often, consider religion less important for their lives, and attend church much less often than they did just a few years ago.

**Figure 2: Trends in Student Religiosity in Catholic Universities, 1990–2010**



### *Percent Catholic*

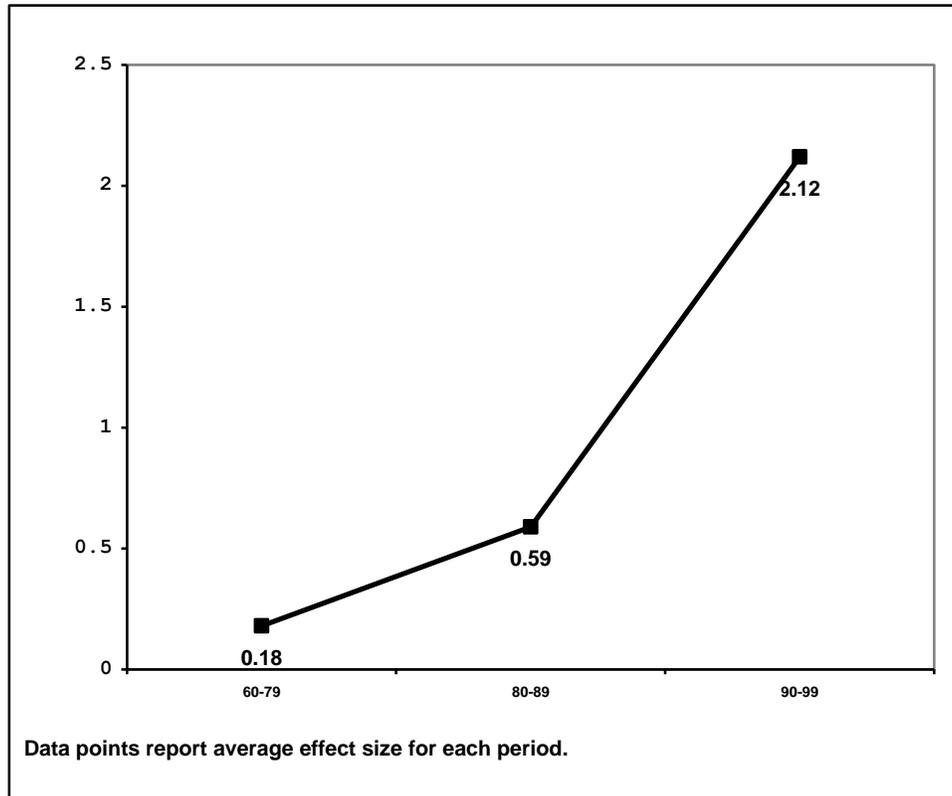
The fourth hypothesis proposed that student religiousness will be higher in schools with higher concentrations of Catholic students. This hypothesis is strongly confirmed; as reported in Table 2, the correlation between the proportion of Catholic students in a Catholic university and the level of church attendance is very high, at +0.84. This is one of the strongest associations found in this study. Buttressing the interpretation of the time trend presented in the previous section, though percent Catholic strongly affects student church attendance, it has no effect on prayer or self-perceived religiousness among students.

This finding lends support to the theory that religious universities serve as a moral community for their students, transmitting the faith not only or primarily through formal courses and programs, but by providing a context in which higher religious behavior and commitment receive the encouragement of a supportive peer community (Hill 2009; Hirschi and Stark 1969). In this view, in a Catholic institution where Catholic students are more dominant, regular church attendance is more likely to be treated as normative behavior. The institutional arrangements at such schools, such as the provision of opportunities to hear Mass and the integration of Mass attendance with other aspects of college life, may also be more conducive to church attendance. Recent research suggests that such a moral community effect is particularly strong for Catholic college students. Comparing the spiritual development of Catholic students at Catholic, non-Catholic religious, and secular colleges, several studies (Bowman and Small 2010; Railsback 2006; Sax et al. 2003) found that the “effect of being Catholic . . . is more positive at Catholic schools than at secular schools, but the opposite effect occurs for Catholics at non-Catholic religious schools” (Bowman and Small 2010: 609). The findings of the present study suggest that not only do differences in religious dominance affect global differences between Catholic and non-Catholic universities, but they also account for differences in student religiousness among individual Catholic universities.

Most of the effect of a higher percentage of Catholic students on church attendance is found at the upper end of the range of Catholic concentration. No university in this study had a student body that was less than 60 percent Catholic, so we are unable to determine the effect of proportions of Catholic students lower than this. Figure 3 shows the effects on church attendance of higher proportions of Catholic students. Average church attendance in Catholic universities with student bodies that were less than 80 percent Catholic was only slightly above average church attendance for all U.S. college students. The associated effect size of 0.18 is less than one fifth of a standard deviation; Cohen (1988), who invented the effect size statistic used here, considered values less than 0.20 to be small. Among

universities having 80 to 89 percent Catholic students, church attendance was three times higher, at 0.59; this is a moderate effect. Above 90 percent Catholic, church attendance was over ten times higher, more than two standard deviations above the U.S. average. This is an extremely large effect.

**Figure 3: Student Church Attendance by Percent of Catholic Students**



Since Catholic universities in the United States average 65 percent Catholic, according to the Association of Catholic Colleges and Universities, the effect on church attendance of a Catholic university with an average concentration of Catholic students is small. The universities in this study that were closest to this average had average church attendance that was not very different from that of any American university. However, church attendance is much higher at Catholic universities that have unusually high concentrations of Catholic students. Strong religious observance, it appears, is not part of the normative expectation or experience of a typical Catholic university but is rather the property of a particular type of Catholic college.

It is also possible that a high proportion of Catholic students is at least in part a result, not only the cause, of higher collective religious practice in a university. Catholic students—and parents—who are looking for a stronger religious experience or Catholic formation are likely attracted at higher rates to institutions that focus on such things. It is reasonable to suppose that a university that offers a more distinct Catholic experience will attract a higher proportion of Catholic students, compared to one whose focus on Catholic identity or formation is about the same as that of any other Catholic university.

### *Educational Program*

Most Catholic universities retain required theology and/or philosophy courses as part of the core curriculum. To many observers both inside and outside Catholic higher education, such courses form one of the primary ways in which the Catholic identity of the institution is expressed and the faith tradition is passed on to students. All but two of the universities that were included in the meta-analysis required at least one theology or philosophy course; the highest number was eight courses. As Table 5 shows, the number of required theology/philosophy courses was not strongly related to church attendance. Universities with both medium and high church attendance, require six, or close to six, philosophy and theology courses. Only universities that are very low in church attendance have reduced requirements for theology/philosophy courses. Thus while high student church attendance is not, as has been noted, a normative or typical expectation for Catholic universities, requiring a substantial number of theology and philosophy courses is. Catholic universities that lack a significant requirement for such courses are unusually secular, as measured by church attendance.

Surprisingly, students at colleges with fewer required theology/philosophy courses reported that they prayed more frequently and perceived themselves to be more strongly religious than did students at colleges with more required courses. It is not clear why this is the case. It may be that students rate their religiousness in terms of the reference group with which they are most familiar, the result being that students at schools with lower standards of collective religiousness perceive themselves to be more religious by comparison. Alternatively, there may be some mechanism at work that promotes higher personal religiousness at schools with lower collective religious activities that I was not able to capture in the limited information available. A better understanding of this relationship awaits further study.

**Table 5: Catholic University Characteristics by Student Church Attendance**

| Item                                            | Student Church Attendance |                 |                 |
|-------------------------------------------------|---------------------------|-----------------|-----------------|
|                                                 | Low                       | Medium          | High            |
| Church attendance (mean effect size)            | 0.02                      | 0.40            | 1.45            |
| Subjective religiousness (mean effect size)     | 0.47                      | —               | 0.33            |
| Prayer (mean effect size)                       | 0.49                      | 0.21            | 0.40            |
| Percent Catholic students                       | 70                        | 75              | 86              |
| Number required philosophy and theology courses | 3.0                       | 6.0             | 5.75            |
| Number of faculty                               | 417                       | 487             | 244             |
| FTE enrollment <sup>a</sup>                     | 6670                      | 8070            | 4324            |
| Percent female enrollment                       | 56                        | 56              | 61              |
| Urbanization                                    | 11.25                     | 11              | 15.6            |
| Percent admitted 2009                           | 57                        | 69              | 77              |
| SAT combined 25th percentile                    | 1076                      | 1080            | 996             |
| SAT combined 75th percentile                    | 1288                      | 1307            | 1196            |
| Average (9-month) faculty salary                | \$85.9 thousand           | \$77.7 thousand | \$68.2 thousand |
| Total tuition and fees (2009)                   | \$35,211                  | \$30,063        | \$27,922        |
| Value of endowment assets (FY 2008)             | \$388.8 million           | \$269.7 million | \$129.0 million |

Effect sizes reports Cohen's *d* compared to 2002–2004.

<sup>a</sup>FTE = full-time equivalent.

### *Status Dilemma*

Hendershott (2008), as has already been mentioned, has argued that the pursuit of institutional success and status in a secularized educational culture has led many Catholic colleges to defect from a strong Catholic identity. This suggests that institutional upward mobility and strong Catholic identity may be incompatible; a Catholic university can pursue one of these goals, but not both. If this is true, then, as the sixth hypothesis predicts, more selective, large, expensive, and wealthy Catholic universities will have lower student religiousness.

The meta-analytic results shown in Table 2 strongly confirm this hypothesis. Church attendance is highly and negatively correlated with institutional selectivity, size, and wealth, as indicated by a variety of measures. Note that, unlike percent Catholic, the institutional measures reported in this section are not contemporaneous with the measures of student religiousness. While church attendance was measured at the time of the included study, ranging from 1961 to 2010, data for

institutional selectivity, size, and wealth were obtained from the most recent IPEDS data (National Center for Education Statistics 2010). Therefore these measures report the association of student church attendance not with current institutional success, but with the success it had attained by 2010.

Two negative indicators of institutional selectivity—percentage of applicants admitted and admissions yield (the percentage of accepted students who choose to enroll)—are both positively correlated, above 0.60, with church attendance. SAT scores of entering freshmen have an equally strong negative correlation with church attendance. The Carnegie Undergraduate Profile, which combines the above measures with transfer-in and part-time student information into a more complete metric of institutional selectivity, has an even stronger negative association (−0.88) with church attendance. These selectivity metrics are generally, though perhaps improperly, taken as direct measures of institutional success. The Carnegie Foundation for the Advancement of Teaching (2010) notes that “[a]lthough they should not be used as a gauge of institutional quality, admissions test scores and selectivity are widely used by institutions, academic researchers, and others in gauging the comparability of colleges and universities.” Size also affected student religiousness. Both number of faculty and number of students at a university were negatively correlated, at about 0.60, with student church attendance.

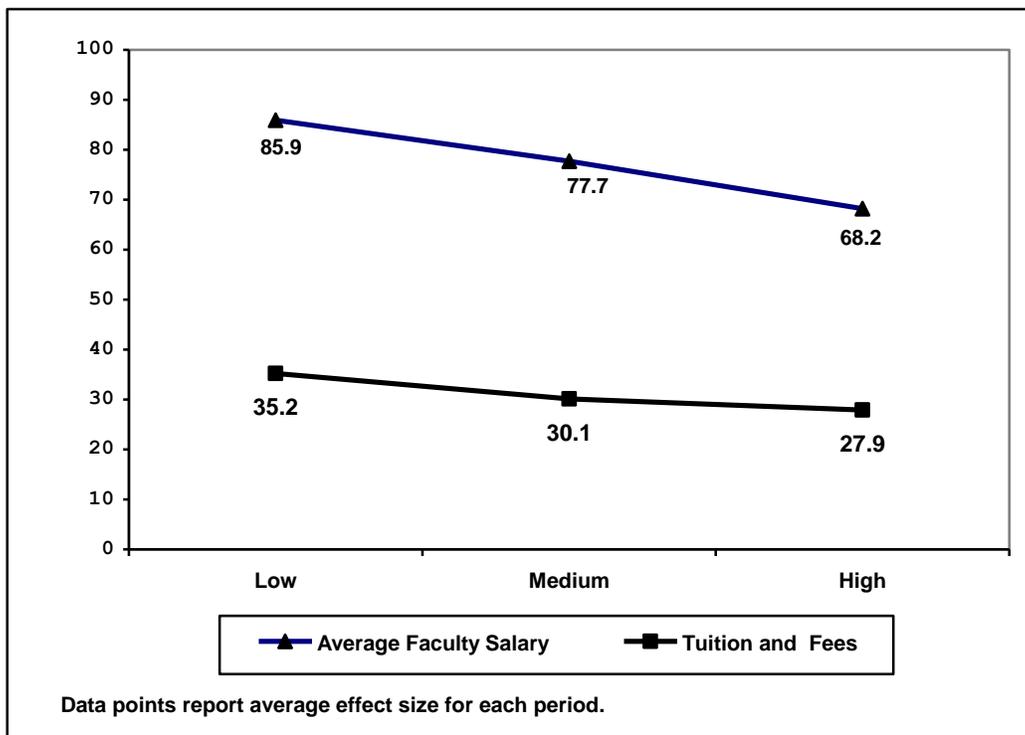
Clearly, students at larger and more selective Catholic colleges attend church less frequently; put another way, Catholic colleges where students attend church more frequently are smaller and less selective in admitting students. To get a closer look at the relationship between student church attendance and institutional variables, I divided the range of church attendance into three equal categories—labeled Low, Medium, and High for convenience—and examined the mean level of each institutional variable for each category. Table 5 presents the results. In the low category, average church attendance, at 0.02 effect size, is no different from average church attendance at any U.S. college. Medium church attendance is moderately higher than the U.S. average; high attendance is three times larger than medium and much higher than the U.S. average.

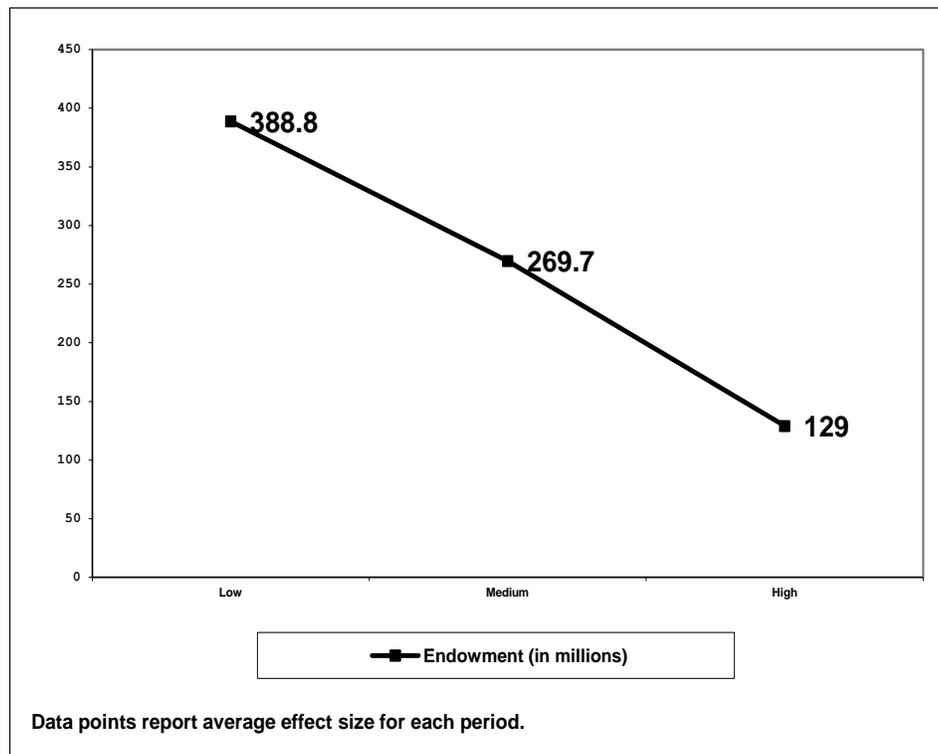
Despite a negative overall correlation, levels of SAT scores, student FTE enrollment, and number of faculty increase from low to medium church attendance, then drop sharply for schools with high student church attendance. As we saw with the percentage of Catholic students, most of the effect that these factors have on student church attendance is at the upper end of the distribution, that is, due to very high religious participation among a minority of schools that are substantially smaller and a little less selective. Compared to those with medium church attendance, schools that attain high church attendance are only about half as large, as measured by numbers of students and faculty, and accept students with average SAT scores that are about 100 points lower. These findings suggest that large and

selective schools can attain a moderate level of student church attendance, one that is better than that of secular schools; but very high levels of religiosity are achieved in schools that tend to be much smaller and somewhat less selective. Except at the very high end of the distribution of student religiosity, size and selectivity are not strong determinants of student religiosity.

On the other hand, the association of institutional wealth with student religiosity is strong, linear, and negative from top to bottom. Figures 4 and 5 illustrate the relevant associations reported in Table 5. It is easy to see that the lines in these figures, depicting the association of wealth and religiosity, are almost completely straight. For Catholic universities, the higher is student church attendance, the less tuition costs, the less faculty are paid, and the lower is the university's endowment. The correlations of tuition and endowment with student church attendance are below  $-0.70$ . The corresponding correlation with average faculty salary is  $-0.91$ ; for studies after 1990 only, it is a near-perfect  $-0.97$ . These correlations are extremely strong by social science standards. Essentially, to know the average faculty salary at a Catholic university is to know how often its students attend Mass.

**Figure 4: Tuition and Faculty Salary by Student Church Attendance**



**Figure 5: Institutional Endowment by Student Church Attendance**

The strong inverse relationship between student religiousness and institutional wealth suggests that as important as status attainment may be, as Hendershott argues, a more important cause of the decline of student religiousness in Catholic universities may be the pursuit of financial success. To the extent to which such things are accurately measured by student selectivity, universities with higher student religiousness do have somewhat lower status, but the effect is small, and limited to those universities with very high levels of student religiousness. On the other hand, the effect of institutional wealth is strong and persists at all levels of student religiousness. Why do more financially successful Catholic universities have lower student religiousness? It may have to do with status striving by university leaders. However, given the monetary pressures on American universities, it might not be the pursuit of success, but the avoidance of failure, that is most on the mind of administrators of American Catholic universities that waver on Catholic identity.

This becomes clearer if we put the question the other way: Why have Catholic universities with higher student religiousness attained less financial success? The answer may lie at the intersection of two powerful forces—one educational, the

other religious—that have shaped the context of American Catholic universities. In the education sphere, few trends in American higher education are as prominent as the increasing market orientation of universities since World War II. Private universities, in particular, have been redefined by the concern about remaining competitive to attract students and their accompanying government subsidies. In the religious sphere, the religious participation and belief of American Catholics has fallen sharply in the past fifty years. The secularizing trend of declining religiousness in Catholic universities mirrors almost exactly the declining religiousness of American Catholics generally. Just at the point at which universities became more susceptible to market forces, American Catholics began looking for universities that were not so very religious.

In eschewing strong religiousness, American Catholic university leaders may be simply responding to the market, which does not generally value high religiousness. They are, in this sense, truly born from the heart of the Church—but in the United States, it is a Church whose people do not seek to be very religious. It is not merely a question of serving God or mammon. Catholic universities that pursue high religiousness today may be, or may be perceived to be, pursuing a questionable strategy in a quest for financial stability. A university that attempts to sell strong religiousness to a church that has generally rejected it may find itself without a market. In the American context, such a condition would lead to institutional failure. Perhaps the most effective way to reform American Catholic universities would be to demonstrate, if it is the case, that there is a strong market for highly religious Catholic universities.

### *CONCLUSION*

To better understand the relationship between student religiosity and institutional Catholic focus, this study has examined some of the empirical connections between individual Catholic university characteristics and student religious outcomes. Student religiousness at Catholic universities is sharply lower than it was a generation ago, though it is still significantly higher than is the case at non-Catholic schools. Objective public religious activity such as church attendance is strongly related to institutional differences, such as would be suitable for “benchmarks” of Catholic identity, but subjective private religious activity or feeling like personal prayer or sense of being religious is not. Peer influence and its associated norms have an influence, but these are associated most strongly with higher religiousness in very religious schools. So is low institutional status, but weakly; fiscal or financial strength, particularly average faculty salary, has a much stronger, and negative, effect on student religiousness. On the other hand, required theology

or philosophy courses predict most clearly low religiousness in schools that have fewer such required courses.

The findings of this study suggest two general practical or strategic implications for measuring and improving Catholic identity. First, the effort to design benchmarks of college Catholicity as related to student religiousness should be careful to avoid measures of religious feeling or personal devotion. These matters are not unimportant for faith development, but they are not affected very much by institutional setting and so make poor benchmark measures. Second, the results reported here suggest that the strongest barriers to student religiousness in a university might not be ideological but pragmatic. In the minds of decision makers at wealthy universities, too strong a focus on student religious development may be perceived to inhibit institutional success, not just in terms of elite status, as Hendershott (2009) and Morey and Piderit (2006) argue, but also in terms of financial stability and growth. If this is the case, then in the highly competitive American university system, efforts to refurbish Catholic identity that do not convey a market advantage are not likely to gain much traction. Unless the maintenance of a strong Catholic identity can be convincingly connected with their own institutional success, the most prestigious Catholic universities may be unlikely to give it priority.

These findings are clearly limited and constrained by the small size, secondary nature, and added variability of the meta-analysis data that are available for analysis. Nevertheless, they clearly demonstrate that important theoretical and practical insights about Catholic universities can be obtained from institutional information on student religiousness. The valuable yet limited nature of these results underlines what may be the most important conclusion of this study. If suggestive results can be gleaned from such limited secondary data, how much more value would primary institutional data have for improving religious outcomes for Catholic university students? The development of more copious and detailed institutional data on Catholic universities, which would permit the conclusions of this study and many more issues to be refuted, modified, or supported, would be of great service to American Catholic higher education. Such information, sensitively handled, would provide a powerful tool for improving the uniquely Catholic features of American Catholic higher education.

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