Is a Higher Calling Enough?

Incentive Compensation in the Church

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Abstract

We study the compensation and productivity of more than 2,000 Methodist ministers in a 43-year panel data set. The church appears to use pay-for-performance incentives for its clergy, as their compensation follows a sharing rule by which pastors receive approximately 3 percent of the incremental revenue from membership increases. The elasticity between ministers' pay and parish size is similar to the firm size elasticity of compensation for public company CEOs. Among a range of possible performance measures, those with the greatest informativeness about pastoral effort are linked most closely to compensation.

The parochial clergy are like those teachers whose reward depends partly upon their salary, and partly upon the fee or honoraries which they get from their pupils; and these must always depend more or less upon their industry and reputation.

- Adam Smith, *The Wealth of Nations*, Book 5, Chapter 1, Part 3, Article 3

If we have sown spiritual seed among you, is it too much if we reap a material harvest from you? If others have this right of support from you, shouldn't we have it all the more?

- Corinthians 9: 11-13

I. Introduction

The Holy Bible and *The Wealth of Nations* are two of the most influential books in history. These texts sometimes differ when assessing the social importance of financial contracts (see, for instance, Jesus's treatment of the Money Changers). Nevertheless, the quotations above show that both the Bible and Adam Smith placed value upon a sound remuneration system for members of the clergy.

In this paper we investigate the compensation arrangements of a large sample of pastors who minister to Methodist congregations in the American Midwest. We evaluate whether clergy receive meaningful pay-for-performance incentives, an arrangement that might seem unlikely for a number of reasons. Many pastors answer the call to ministry as a result of strong religious beliefs or an impulse to serve, and this intrinsic motivation might crowd out the need for more explicit incentives (Dewatripont, Jewitt, and Tirole, 1999). Strong pay-for-performance incentives might damage a minister's spiritual credibility with a congregation that expects intrinsic motivation to be sufficient. Finally, churches are not-for-profit entities and have no clear residual claimants who might optimize compensation policy (Fama and Jensen, 1983).

Notwithstanding these obstacles to efficient contracting, we find abundant evidence that the compensation of ministers conforms to standard principal-agent models.

We analyze an extensive panel dataset covering all 727 United Methodist churches and 2,201 ministers who served in the state of Oklahoma between 1961 and 2003. We find that when a new member joins a church, its minister's annual compensation increases by just under $15 (all values are expressed in constant 2008 dollars). When a member leaves a congregation, the minister's pay falls by about $7. These effects translate to a pay elasticity with respect to membership of approximately 0.35, virtually identical to the pay-firm size elasticity for corporate CEOs (Baker, Jensen and Murphy, 1988). Based upon the stream of donations associated with a typical church member, we argue that ministers' incentives operate as a type of sharing rule, by which a pastor is paid close to 3 percent of the incremental revenue that typically accrues to a church when a new member joins. We also find evidence of indirect incentives that arise from the possibility of successful clergy to be reassigned to parishes that offer higher pay and perquisites, particularly housing.

For incentive compensation to succeed in a church, congregants must be able to attribute various measures of output, such as membership or donations, either to a minister's actions or to exogenous factors. Connecting output to an agent's effort can be problematic in many business settings, because a worker's choice of effort is private, preventing the principal from observing it or writing incentive contracts based upon it. See Holmstrom (1979) and Banker and Datar (1989). As a result, a principal typically offers a second-best contract based upon output that can be inverted to obtain an estimate of the agent's unobserved effort.

Our dataset provides several specific output measures that provide insight into a pastor's effort level. We can decompose a parish's membership changes into three main categories: transfers within the Methodist denomination, transfers between denominations (e.g., Methodist to Baptist), and transfers in and out of the Christian faith. While a minister likely has little to do with a person's decision to embrace or reject an entire religion, he or she may be the dominant factor in a congregant's decision of which

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Methodist church to join, either because of his charisma as a speaker or his diligence in providing services such as hospital visits or counseling.

We find that changes in ministers' pay exhibit significant connections to informative measures of membership changes, and no connections to uninformative measures. A minister's annual salary increases by about $18 when a member joins the church "by profession of faith," synonymous with formally committing to the Christian religion. The pay increase is about twice as high, approximately $33, for adding new members who defect from other Methodist churches. Losing a member to another Methodist church leads to a downward revision in compensation of even greater magnitude, approximately $43. In contrast, losing a member to death results in no discernable change in a minister's pay. These results parallel the findings of other empirical papers that show that when several performance measures can be observed by a principal, the variable with the strongest signal-to-noise ratio becomes the basis for the agent's contract. Examples include Lambert and Larcker (1987) for corporate CEOs and Ittner, Larcker, and Pizzini (2007) for doctors in group practices.

While we find a significant relation between membership changes and pastoral compensation, the strength of the connection varies cross-sectionally across parishes. This variation arises because some churches experience more volatile patterns of membership changes than others, thereby exposing their ministers to more compensation risk. Executive pay research such as Aggarwal and Sanwick (1999) finds that CEO pay becomes less sensitive to performance when the underlying performance measure is risky. We find similar results for clergy. We sort all churches by the volatility of their membership changes and then assign them to "high" and "low" volatility categories. Churches with volatile membership exhibit less ministerial pay-for-performance with respect to membership.

One reason for the variation in churches' membership patterns over time arises from the impact of the price of oil, which plays a significant role in Oklahoma's

economy. Oil affects individual regions of the state very differently, and certain localities will experience fluctuations in population and economic growth when oil prices rise or fall. We run church-by-church regressions of membership on the price of oil and its lag, and then rank churches by the percent of total membership variation explained by oil prices. Consistent with our other results, churches highly exposed to oil prices shift compensation risk away from their ministers, paying them less for membership changes and offering them higher base salaries.

Our paper contributes to several lines of research in finance and economics. A nascent literature has studied the role of incentive compensation in the non-profit sector. Leading papers include Hallock (2002) and Brickley and Van Horn (2002). Although non-profits comprise a significant portion of the national economy, they face few disclosure requirements and therefore are rarely studied by empirical economists. A large literature has examined the economics of religion, which is reviewed by Iannaccone (1998). This literature includes several prior studies of the compensation of clergy, all of which use cross-sectional data to estimate the determinants of pay across churches. McMillan and Price (2003) and Haney (2008) use a survey of 883 pastors across nearly 100 different faiths to evaluate relations between compensation and church structure, location and size. Trawick and Lile (2007) studies Southern Baptist congregations and finds that ministers' pay is higher in areas where Southern Baptist churches have a greater concentration. Zech (2007) finds that ministers in larger communities earn more pay, while their pay is unrelated to self-reported performance scores. None of these papers takes a time series approach or uses objective performance criteria in order to evaluate the strength of pay-for-performance incentives, which is the main focus of our work.

Our analysis is limited to the day-to-day activities of ordinary church pastors who deliver sermons on Sundays and minister to their congregations during the rest of the week. Some charismatic American clergymen have earned fortunes through book royalties, televangelism, and charging fees for access to sacred texts, but those

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entrepreneurial activities are beyond the scope of our study and probably have little overlap with the work of the Midwestern clergy in our sample.

The remainder of the paper is organized as follows. Section II describes our data. Section III presents our analysis of pay-for-performance for clergy in hundreds of Oklahoma Methodist parishes. Section IV concludes.

II. Data description

Our study uses data on pastoral compensation provided to us by a unit of the United Methodist Church, the second largest Protestant denomination in the United States. The Methodist church came to the U.S. in the 18th century, not long after its founding at Oxford University in England by theologian John Wesley. The denomination's current organizational form in the U.S. resulted from mergers in 1939 and 1968 between several related branches that had separated in the 19th century due to doctrinal and administrative disagreements. With approximately 8 million members today, the United Methodist Church has a reputation for moderate, mainstream Christian beliefs and good ecumenical relations with other denominations. Its members include such diverse public figures as George W. Bush and Hillary Rodham Clinton.

We were fortunate to receive access to a 43-year time series of data about the activities and finances of every local parish in the United Methodist Church's Oklahoma Annual Conference. An Annual Conference, the basic regional organizational unit of the church, is led by a Bishop who presides over a Cabinet of District Superintendents. These officials exercise central control over decisions related to hiring and assignment of individual pastors and, to a lesser degree, their annual compensation. A pastor typically serves a particular congregation for only a few years, as movement is very common across churches (but only within an individual Conference). Some pastors oversee a circuit of several smaller parishes.

Our data comes from yearly handbooks of the Oklahoma conference compiled for each of the years 1961 through 2003. These handbooks include detailed information about each constituent congregation, including expenditures, balance sheet items, and membership activities such as baptisms and Sunday School attendance, approximately 100 variables per parish per year. We received more than 8,000 pages of data from the Oklahoma conference's handbooks, and we arranged for the data to be scanned into spreadsheets and then verified through a series of quality control checks. The data give as a comprehensive sample of 24,989 parish-year observations, with information about 727 churches, 2,201 pastors, and 7,676 unique pastor-church combinations between 1961 and 2003. During our sample period the size of the United Methodist Church in Oklahoma remained stable, with 240,378 members in 625 churches in 1961 and 252,567 members in 548 churches in 2003, although the number of churches fluctuated from year to year.

We focus on the provision of incentives for the head or "senior" minister at each church.[1] As we analyze the compensation of ministers, it is important to note that the individual churches and pastors do not have the power to "screen" or select each other through the matching process, since the allocation of labor is done at the Conference level, while decisions about pay are made by local congregations. Ministers receive three types of direct compensation: salary, housing, and utilities.[2] Although the annual value of housing is not reported directly, church yearbooks tabulate the estimated market value of each congregation's living quarters or "parsonage." To convert each pastor's occupancy right into a flow of housing consumption, we obtain the annual price-to-rent ratio for residential housing in the state, and multiply it by each reported parsonage value.

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[1] A number of larger churches also have associate pastors who assist the senior pastor. We do not study the incentive provisions for associate pastors.

[2] United Methodist ministers also receive travel expenses, particularly when serving at multiple churches simultaneously, but we do not include these reimbursements as part of compensation.

Our results reported below are insensitive to whether we define a pastor's compensation as salary only or also include housing and utilities. Ministers also receive indirect incentives through the possibility of promotion and demotion, as the Conference periodically rotates pastors throughout its area of jurisdiction.

Table 1 presents summary statistics for key variables about ministerial compensation and church performance. All values items are converted to January 2008 dollars using the Consumer Price Index for All Urban Consumers. We report each parish's ministerial compensation in two forms, as salary only (on the first line) and as salary plus housing and utilities (on the second line). Because some smaller parishes share the services of a single minister, we aggregate each individual pastor's total compensation across parishes and report it on the third and fourth lines of Table 1. The table indicates that median pastor compensation, using the broad definition, is about $36,900 in 2008 dollars, with an inter-quartile range between $22,651 and $49,586. A few pastors earn in excess of $100,000, with the sample maximum of more than $238,000 received by the head of a large church in an urban area.

Figure 1 shows how the average real compensation of ministers has evolved over time between 1961 and 2003. For comparison purposes, we show a time series of per capita personal income in Oklahoma. Somewhat surprisingly, pastoral compensation appears risky, varying significantly over the forty-year horizon for which we have data. Mean clergy compensation declined during much of the 1960s and 1970s, before sharply increasing in the 1980s and growing at a more moderate rate from the late 1980s onward. Over the entire period clerical pay grew at a compound annual real rate of 0.9% per year, while per capita income grew much faster, at 1.9% per year.

The remaining part of Table 1 describes the church characteristics used in our analysis. Membership equals the cumulative number of people who have joined the church, less the number who have withdrawn. Becoming a member is distinct from attending church events or services, which anyone is free to. Membership requires no

formal commitment beyond an oath to support the church with one's "prayers, presence, gifts, and service." However, joining the church may require some investment of time, such as attending classes for new members or (in some circumstances) becoming baptized, and members are solicited to support church activities financially and otherwise. In addition to data about each church's membership, we have information about the rates of attendance at Sunday services and Sunday School. On average, about a third of a church's members attend a given Sunday's worship services, and about 70% of those attending worship will also attend Sunday School.

We track membership changes from year to year for each parish. The overall membership change variable (*ΔMembers)* indicates that net membership changes are small, with a median value of zero and inter-quartile ranges of +6 and -3. However, churches frequently lose and gain individual members, around 18 on average for both gains and losses, such that the net effect is small. More important than this, however, are the specific channels through which members come and go from the church. Much of our analysis relies on these differences, so we describe each in detail.

Members can be added to the church via Professions of Faith, from Another Denomination, or from Another Methodist congregation. Profession of Faith occurs when someone simultaneously joins the United Methodist Church and the Christian religion. Two particularly common ways this occurs are when an adult converts to Christianity from another or no religion, and when an adolescent undergoes "confirmation," at or about age 13. Members can be removed for many of the same reasons they are added. For example, churches can lose members to Other Denominations or to Other Methodist churches. In addition, members can be removed for Action or can Withdraw. Removal for Action usually occurs after an extended period of inactivity. Withdrawing from the church usually coincides with exit from Protestant Christianity (otherwise Other Denomination is specified), although this is self-reported and not verified upon exit. Finally, members can be removed by Death.

These reasons for joining or leaving a parish differ substantially in the extent to which a parish's senior minister may be involved. Clearly, some events are completely beyond his or her control. Death is the most obvious example, as is being removed for Action. However, Professions of Faith or transfers to/from Other Denominations are more likely to involve the minister, whether through delivery of an inspiring Sunday sermon or spending time individually with parishioners during times of need.

Finally, we tabulate information about annual parish revenues in Table 1. A church's financial health invariably depends upon the voluntary giving or "tithing" of its members. Revenues at the church level are not explicitly reported by our data source, but we can infer annual revenue from each church's reported expenses (including capital improvements to property and equipment), plus the change in the church's other assets (mainly, cash), less the change in total debt. Inspection of the data reveals some problems with the timing of changes in debt and other assets relative to the expenditures, so we use two-year averages for these numbers, akin to a mid-year convention. The median (average) church-year in our sample has about $65,000 ($174,000) in revenue, corresponding to median (average) revenues per member of $315 ($355).

III.   Evidence of pastoral incentive compensation

A.   Basic pay-for-performance models

We begin our investigation by estimating basic linear pay-for-performance regressions over our sample of more than 2,200 Methodist ministers. We use a fixed effects specification that assigns a unique intercept to each minister-church pair, because both the pastor and the congregation members might influence either pay or performance. For example, a particular minister might be a gifted orator from the pulpit, and a particular church may have members that are especially devout or generous. A particular

minister-church pairing may succeed if a certain pastor connects better with a rural congregation, or his theology aligns better with the local church. Our specification is:

$$Pay_{ijt} = \alpha_{ij} + \sum_{k=1}^{n} \beta_k \left(\overline{Performance_{k,ij}} + Performance_{k,ijt-1} \right) + \eta_{ijt}, \qquad (1)$$

where i indexes ministers, j churches, and we allow for $k = 1,.., n$ measures of performance. Note that the intercepts capture the average pay for each ij minister-church pair, and we decompose each performance measure into a component that is constant for a given minister-church pair, $\overline{Performance_{k,ij}}$, and a time-varying component, $Performance_{k,ijt-1}$. Churches each fall recommend compensation adjustments for their pastors based on observed outcomes over the previous year, so our performance measures are all lagged one year. We treat the error term, η_{ijt}, as heteroskedastic, permitting it to have persistence within churches and a common component across churches in a particular year. We then take first differences and estimate:

$$\Delta Pay_{ijt} = \sum_{t=1}^{T} \partial_t Year_t + \sum_{k=1}^{n} \beta_k \Delta \left(Performance_{k,ijt-1} \right) + \varepsilon_{ijt}, \qquad (2)$$

where we include indicator variables, $Year_t$, to account for common changes in compensation across the state for a particular year. We calculate robust standard errors following White (1980), and allow for serial correlation by clustering observations at the church level.

Table 2 shows the regression results. In the first column, we use the change in church membership as an estimate of a pastor's performance. Consistent with a pay-for-performance hypothesis, the membership variable has a positive and significant estimate, with a magnitude of about $11 per new member. We find similar results in the next two columns when the performance measures are the increase in each parish's average attendance and the increase in its Sunday School attendance. Both of these variables exhibit positive and significant estimates with magnitudes of about $5 and $7 per congregant, respectively.

Perhaps the most striking result of Table 2 is what does *not* appear to influence the minister's compensation – the church's revenues. We propose several possible

interpretations for this pattern. First, the church's strategic objective might be to serve the greatest number of parishioners, instead of taking in the most revenue. Second, the minister of a congregation might have greater impact upon recruiting new church members compared to his effect upon the entire congregation's decisions about how much to donate. This seems possible in part because most members of a given parish would have been recruited by a former pastor, given the relatively short tenures of ministers at their churches under the Methodists' system of regular rotation. However, the explanation that seems most likely to us is that revenues are at best a noisy signal of pastoral effort, since church donations are likely to depend heavily on external factors linked to the economy. Figure 2, showing a close connection between per capita income in Oklahoma and median church revenue, is consistent with this conjecture.

As robustness checks on the estimates in Table 2, we estimate a regression with all four independent variables together, with results shown in column 5, and an additional model shown in column 6 with the dependent variable equal to the change in the pastor's salary only, instead of his change in total compensation. We find that when all variables are included together the estimate for the attendance variable weakens considerably, while the others remain essentially unchanged. Changing the dependent variable to equal salary only has little impact upon the estimates, a pattern that we find in all our models throughout the paper. To save space in subsequent tables, we generally tabulate only results based upon total compensation.

B.   *Detailed performance measures: membership changes of different types*

Even if revenue provides a noisy signal of pastoral performance, it is vital to the health of a parish. Whatever the influence of external economic factors, revenue increases almost certainly depend upon membership increases, and certain types of members may be more valuable to a parish than others. We investigate this possibility in simple least squares regressions reported in Table 3. The table shows first-difference

estimates of changes in revenue as a function of lagged changes in different categories of membership. In the first column, estimates indicate that a new member leads to a significant increase in church revenue of about $451 the next year, while a member lost has a negative effect upon revenue that is much smaller in magnitude and not statistically significant. We find that membership changes in either direction have slightly larger impacts upon parish revenue if we include lagged terms of the independent variables (results not tabulated to save space). These outcomes may not be surprising if members who leave the church might not have been providing much financial support prior to departing, while new incoming members might be especially enthusiastic about the church's mission.

We conjecture that when setting ministers' compensation, church congregations rely upon the performance measures that most clearly reflect their pastors' effort. To investigate this possibility, we disaggregate increases and decreases in membership into different categories. We use these disaggregated variables as the basis for a further regression, with the results reported in the second column of Table 3.

The more detailed regression model's estimates indicate that new members of all types tend to donate to the church, although the estimate is not significant for those joining due to professions of faith. The most ardent donors appear to be those that convert to Methodism and leave another religious denomination. Among the categories of membership departures, almost no change in church revenue occurs when a member dies, withdraws from the practice of Christianity, or is dropped from the parish rolls due to inactivity; in all three of these cases the member probably had been providing little support to their parish due either to ill health or indifference. We find large decreases in parish revenue when a member leaves to join either another denomination or another United Methodist congregation, although only the latter is statistically significant. These estimates are generally noisy with fairly large standard errors, but the results seem to give

an overall indication that certain types of membership changes impact a parish much more than others.

The results in Table 3 indicate that the Church experiences more financial impact from certain types of membership changes than from others, and we would therefore expect parish leaderships to be sensitive to these differences when implementing pay-for-performance incentive compensation. However, we do not believe the associations between membership changes and revenue changes provide sufficient statistics for pastoral effort; certain increases in membership that prove lucrative for the church, such as professions of faith, may occur more or less as a windfall, driven perhaps by national or worldwide events that affect peoples' attitudes toward religion. We expect that membership changes within the set of United Methodist parishes provide the most informative signals of a minister's effort. In contrast, membership changes to or from other denominations or members who completely withdraw from Christianity are more likely to be driven to a larger extent by non-local church doctrine, and membership decreases due to inactivity or death may have no connection at all to the minister's performance. Receiving members by professions of faith could fall somewhere in between these other categories. Professions of faith may be linked partly to non-local factors that cause people to embrace religion, but they may also indicate effort by the minister in such areas as engaging teenage children of current parishioners. In sum, we expect parishes to provide differential pay incentives to their clergy for different categories of membership increases, and the strength of these incentives should depend partly upon financial factors but also upon intuition about how much pastoral effort is involved in recruiting and retaining members of different types.

Table 4 investigates the relations between these disaggregated membership changes and changes in pastoral compensation. We begin in column 1 by examining the differential impact of overall membership additions and subtractions. Estimates indicate that ministers are rewarded much more when a church parish grows than they are

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penalized when it shrinks. A new member adds roughly $15 to a minister's total compensation, while ministerial pay falls by a little under $7 when the parish rolls shrink by one member. Combining these results with the estimates in Table 3, we can characterize ministers' pay-for-performance rewards as a type of sharing rule. If a new member typically donates $451 annually to the church, and the pastor's compensation rises by $15, we would conclude that 3 percent of the incremental revenue stream from a new member is dedicated to compensation. We can develop more refined estimates of this statistic by using several lagged values of membership changes, but all are in a neighborhood near 3 to 5 percent. In the other direction, the financial penalty sustained by a pastor when a member leaves the church can be characterized as 4 percent of the incremental lost revenue stream, which equals the quotient of $6.68 (from Table 4) divided by $154 (from Table 3).

Column 2 presents estimates for a model in which changes in membership are broken down into detailed categories. Several striking results emerge. As we would expect, adding members from other United Methodist Churches has the largest economic and statistical effect upon pastoral compensation, estimated to be more than $32 per member. This implies a sharing rule of about 7 percent of the incremental revenue tied to a congregant who defects from another parish. Other types of membership increases do not impact pastoral compensation as importantly. Adding members through professions of faith or from other denominations has a smaller point estimate of around $17 each, although one category slightly misses having statistical significance.

When a church loses members, transfers to other United Methodist congregations represent the only category that significantly impacts a pastor's compensation. These transfers within the denomination result in penalties on the order of $43 to the losing pastor, even larger than the benefits from recruiting a new member from another United Methodist parish. The remaining reasons why members are lost (action, death, or withdrawal) are not significantly related to changes in pastoral pay.

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C.   *Detailed performance measures: membership changes in city churches*

Although pastoral compensation is most sensitive to movements of parishioners within the set of United Methodist churches, one might argue that these changes do not always occur as a consequence of pastoral effort. Some might arise from exogenous circumstances such as job relocations or a parishoner purchasing a new home across town. We gain more insight into the importance of membership transfers within the denomination by focusing upon parishes in urban areas. In cities, churches are more densely located and the cost of switching from one United Methodist Church to another should be lower. We therefore expect that within cities, membership changes to and from other UMCs should be more informative signals of ministerial effort.

To test the importance of membership transfers in urban settings, we create an indicator variable for churches that are located in the two main cities in Oklahoma (Tulsa and Oklahoma City), which we denote *City Church*. We then run our regressions with an interaction term between *City Church* and membership changes to or from other United Methodist Churches, plus the indicator itself. Results appear in the third column of Table 4. As we expect, pastoral compensation exhibits much greater sensitivity to intra-denominational transfers if the minister works in an urban location.

D.   *Lags and elasticities*

We investigate some alternative pay-performance specifications in Table 5. In the first two columns of the table, we regress the pastor's change in total compensation against the change in membership, including one and two lagged values, respectively. The estimates show that churches tie compensation not only to contemporaneous changes in membership, but also to changes occurring in the recent past. The estimated total impact of a new member upon the pastor's compensation would equal the sum of the coefficients of these lagged values, or about $15, compared to an estimate of $11 when

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just the contemporaneous first difference in membership appears in the regression. Note that sample sizes for these regressions drop substantially compared to those in Table 2, because higher-order lags of data do not exist for many pastor-church combinations.

To this point, our empirical specification has measured incentive compensation with dollar sensitivities (e.g., dollars per new member), rather than with percentage sensitivities scaled by the size of the church. As Baker and Hall (2004) articulate, the former is appropriate when activities have the same dollar impact for large and small firms (or churches), while the latter provides better incentives for activities that scale with size. We estimate an alternative model based upon parish size in the third column of Table 5, which shows the association between the log of a pastor's compensation and the log of congregation size. The estimate, which represents the elasticity of pay with respect to congregation size, is highly significant with magnitude of 0.35, indicating that ministers' pay rises by approximately one-third when congregation size doubles. This effect is surprisingly close to the typical estimate of 0.30 of public company executive compensation with respect to firm size, as found for decades in a large number of different samples of major company CEOs (Baker, Jensen and Murphy, 1988; Murphy, 1999).

E.   Exogenous variation in performance measures

Our analysis above illuminates connections between pastoral compensation and changes in parish memberships, and we argue that certain types of membership changes receive stronger rewards because of their apparent connection to a minister's effort. While these relations seem economically sensible, we recognize that membership changes will provide signals of varying clarity from one parish to another.

We develop two proxies for the signal-to-noise ratio of how closely membership changes reflect pastoral effort at individual churches. Our first proxy is the church-level standard deviation of membership changes. We use the entire time series of up to 43

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years per parish to calculate the volatility of each church's percentage changes in membership. Churches that have volatility above the sample median are grouped together and classified by an indicator variable, *High Volatility*.

Our second proxy utilizes oil prices as an exogenous factor that partially explains church membership. Oklahoma has a tradition of being an oil-dependent state, but not all communities are equally exposed to variation in oil prices. To the extent that a particular community's economy depends on oil, church membership would be affected at least two ways. First, an oil-generated boom might generate population growth and contribute to increased parish membership. However, an offsetting effect may arise from the well-documented tendency of religious activity to decline amid higher wealth and income (Azzi and Ehrenber, 1975). We show such a pattern for one Oklahoma community in Figure 3, which graphs annual changes in membership of the Shawnee Bethel United Methodist Church against annual changes in oil prices. Shawnee is the county seat of Pottawatomie County, which in the 1920's boasted itself as "The Hub of the World's Largest Oil Fields."[3] As shown in Figure 3, the times series of church membership changes and oil price changes behave almost as mirror images. A closer inspection of the data for this parish shows that Shawnee Bethel exhibits both countercyclical membership changes (with respect to oil prices), as well as procyclical giving per member. Each of these patterns is consistent with Gruber's (2004) finding that people substitute higher donations for church attendance based upon their marginal utilities for leisure and money.

To measure the exogenous impact of oil prices upon church membership in different parishes, we start by regressing membership for each church on lagged membership and a time trend, and calculating the r-squared of that regression (for each church). We then add contemporaneous and lagged oil prices to the regressions and

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[3] See http://www.shawneeok.org/History/Default.asp.

calculate the improvement in the r-squared.[4] Churches with a change in r-squared greater

than the median (i.e., where oil explains more of the variation in membership than the

median across all churches) are grouped together and classified by an indicator variable,

Oil Driven.

In Table 6, we present regressions of changes in pastoral compensation against

changes in membership, including interactions between changes in membership and the

two indicator variables *High Volatility* and *Oil Driven*. We also include an interaction

between changes and membership and the average size of the church over the sample in

order to control for possible size effects on membership volatility or oil exposure.

Estimates in column 1 of Table 6 indicate that churches with greater total variability in

membership put significantly less weight on changes in membership when setting

ministers' compensation. The change in total compensation associated with one new

member for a minister at a high-volatility church is about $12, compared to $23 for a

minister at a low-volatility church. Similarly, the results in column 2 suggest that

churches with membership driven by exogenous variation in oil prices have less pay-for-

performance sensitivity. A new member in an oil-driven church is associated with a $10

increase in total compensation, compared to $18 in a less oil-driven church. Column 3

includes all interactions simultaneously and provides some evidence that the two effects

are partially interdependent.

F.   *Implicit pay-for-performance due to promotion and demotion*

We conclude our analysis by examining patterns of transfers within the Oklahoma

United Methodist Conference. Pastoral rotations among different churches occur

frequently and are controlled by the Conference administration or Cabinet. The Cabinet

could use performance measures to decide when or where to move a minister, and the

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[4] Oil prices are from the series, OILPRICE, Spot Oil Price: West Texas Intermediate, from the Federal
Reserve Bank of St. Louis, downloaded from http://research.stlouisfed.org/fred2/series/OILPRICE.

change in pay that results from moves could be a function of past performance. In other words, a minister who performs exceptionally well at one church may get "promoted" to a bigger, higher-paying church for his or her next appointment. Part of the increased compensation may come from access to especially impressive Parsonage living quarters that some parishes own.

Performance could be rewarded through movement across churches in two ways. First, a minister who performs better could move to the next church sooner rather than later. To test for this, we estimate several hazard models where the dependent variable (or "spell") is the length of time that a minister was in place at a particular church. We find no significant relation between the probability that a minister moves in a particular year, conditional on not having moved yet, and any of our performance measures. For the sake of brevity, we do not present these results, but instead focus on the second potential channel where performance could be rewarded – a change in pay for the minister, conditional on a change in churches.

Table 7 presents results of regressions of changes total compensation against performance, using only those years in which a minister takes up a new appointment. The model in column 1 begins by examining whether pay changes due to moves are related to changes in membership, revenues, or attendance at the previous church. The specification is identical to that used in Table 2, plus an additional variable measuring the minister's previous pay to control for the impact of the tournament nature of appointments. As the results indicate, pay changes for changes in appointments are significantly related to membership changes at the minister's previous church. In addition, the point estimates suggest a larger impact than we observed for within-church changes in pay. Conditional on a move, a new member is associated with an approximate $31 increase in total compensation, versus the $9 estimated in Table 2 for within-church changes. The larger estimate for total compensation is also consistent with ministers being rewarded by moving to churches with more valuable housing.

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In column 2, we analyze the impact of the various types of membership changes. When rewarding ministers' performance through movements across churches, the Conference Cabinet appears to focus on the degree to which they were able to attract new United Methodists to the church, rather than their ability to attract members to leave one United Methodist parish and join another. The coefficients on members added through professions of faith and from other denominations are statistically and economically significant. A new profession of faith is associated with an approximately $209 increase in total compensation, conditional on a change in appointment, with similar magnitudes for members added from other denominations ($256). In contrast, adding new members from other United Methodist Churches is associated with a much smaller change in pay, about $35 in total compensation (not statistically significant).

Taken together, our results suggest an interesting overall pattern for rewarding pay for performance. While a minister is in place at a local church, his or her pay changes depend on changes in membership, especially members that come from or leave to other United Methodist Churches. These effects are more pronounced for churches where membership changes are expected to be cleaner signals of the minister's effort. However, these rewards may seem counterproductive in the eyes of the supervising Conference Cabinet, which views membership transfers among churches as a zero-sum game and is more interested in growing the size of the entire denomination. When one looks at how the Conference as a whole rewards ministers by rotating them across churches, the Conference more strongly favors pastors whose churches grow by attracting new United Methodists rather than those who grow at the expense of other Methodist congregations. The Conference therefore appears to use promotion-based rewards to redress certain unintended consequences of the standard pastoral pay-performance framework that prevails at the parish level (see Prendergast, 1999).

VI. Conclusions

Our paper investigates patterns of compensation for a large panel dataset of ministers in the state of Oklahoma between 1961-2003. We find evidence that compensation follows patterns consistent with principal-agent models of optimal contracting. Although the overall level of ministerial pay is modest, it responds significantly to increases and decreases in parish membership. When we decompose membership changes into different categories, we find that the more informative types of changes are associated most strongly with changes in pastoral compensation. Pay-performance sensitivity is lower when performance variables are volatile in a given parish, and also when the church operates in an environment exposed to external economic factors such as the price of oil. Finally, the central church administration appears to use its power of ministerial assignment in order to reward productive clergy with plum appointments that bring higher total compensation.

These results may seem rational to scholars who study agency theory and the economics of contracting. However, they occur in a setting – a major American religious denomination – in which one might expect little or no material reward for excellent performance. Although pastors are no doubt motivated by idealism and a variety of non-pecuniary rewards, our research indicates that incremental financial incentives also impact their effort and the quality of service they provide to parishioners.

References

Aggarwal, R., and A. Samwick, 1999. The Other Side of the Tradeoff: The Impact of Risk on Executive Compensation. *Journal of Political Economy* 107, 65-105.

Azzi, C., and R. Ehrenber, 1975. Household Allocation of Time and Church Attendance. *Journal of Political Economy* 83, 27-56.

Baker, G. P., M. C. Jensen, and K. J. Murphy, 1988. Compensation and Incentives: Practice vs. Theory. *Journal of Finance* 43, 593-616.

Brickley, J. A., and R. L. Van Horn, 2002. Managerial Incentives in Nonprofit Organizations: Evidence from Hospitals. *Journal of Law and Economics* 45, 227-249.

Dewatripont, M., I. Jewitt, and J. Tirole, 1999. The Economics of Career Concerns, Part II: Application to Missions and Accountability of Government Agencies. *Review of Economic Studies* 66, 199-217.

Fama, E. F., and M. C. Jensen, 1983. Separation of Ownership and Control. *Journal of Law and Economics* 26, 301-325.

Gruber, J., 2004. Pay or Pray? The Impact of Charitable Subsidies on Religious Attendance. *Journal of Public Economics* 88, 2636-2655.

Hallock, K. F., 2002. Managerial Pay and Governance in American Nonprofits. *Industrial Relations* 41, 377-406.

Haney, B. R., 2007. The Relationship Between Labor Market Structure and Clergy Compensation in Protestant Denominations. *Atlantic Economic Journal* 36, 65-75.

Holmstrom, B., 1979. Moral Hazard and Observability. *Bell Journal of Economics* 10, 74-91.

Iannaccone, L. R., 1998. Introduction to the Economics of Religion. *Journal of Economic Literature* 36, 1465-1496.

Ittner, C. D., D. F. Larcker, and M. Pizzini, 2007. Performance-Based Compensation in Member-Owned Firms: An Examination of Medical Group Practices. *Journal of Accounting and Economics* 44, 300-327.

Lambert, R., and D. Larcker, 1987. An Analysis of the Use of Accounting and Market Measures of Performance in Executive Compensation Contracts. *Journal of Accounting Research* 25, 179-203.

McMillan, B.R. and M. J. Price, 2003. How Much Should We Pay the Pastor? A Fresh Look at Clergy Salaries in the 21st Century. The Divinity School at Duke University *Pulpit & Pew* Research Report Series, Durham, NC.

Prendergast, C., 1999. The Provision of Incentives in Firms. *Journal of Economic Literature* 37, 7-63.

Trawick, M. W. and S. E. Lile, 2007. Religious Market Competition and Clergy Salary. *American Journal of Economics and Sociology* 66, 747-763.

Zech, C., 2007. The Agency Relationship in Churches. *American Journal of Economics and Sociology* 66, 727-746.
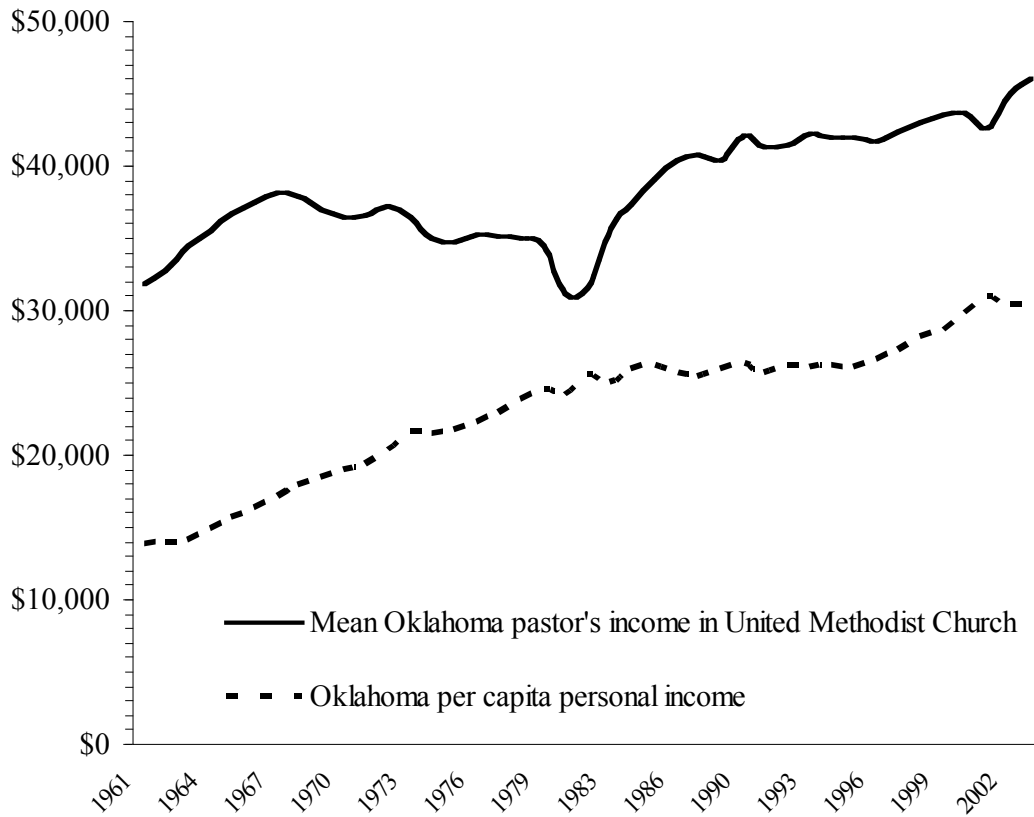
Figure 1
Income of Methodist ministers compared to Oklahoma statewide averages
The figure shows a time series of the median compensation for ministers in the United Methodist Church in the state of Oklahoma between 1961 and 2003. For comparison purposes, the figure shows per capita personal income for all workers in Oklahoma during the same period. All values are adjusted for inflation and expressed in 2008 dollars. Ministers' income equals the sum of salary, utilities, and the imputed value of housing. Data are obtained from yearbooks published by the Oklahoma Annual Conference of the United Methodist Church and from the Federal Reserve Bank of St. Louis.
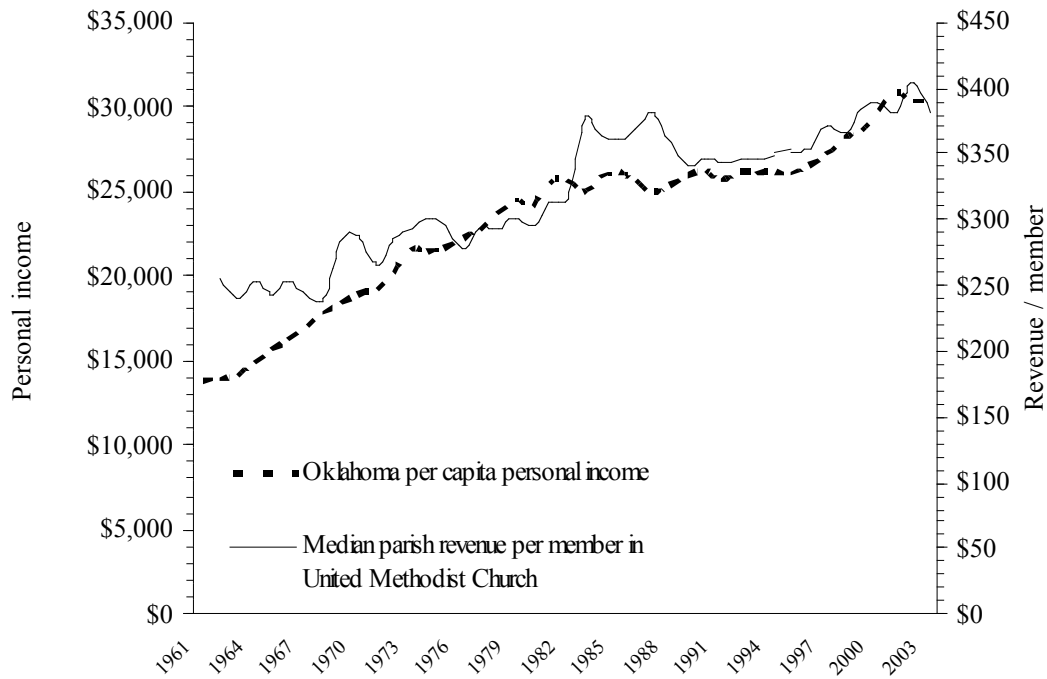
Figure 2
Parish revenue and per capita income
The figure shows a time series of the median revenue for United Methodist Church parishes in the state of Oklahoma between 1961 and 2003. For comparison purposes, the figure shows per capita personal income for all workers in Oklahoma during the same period. All values are adjusted for inflation and expressed in 2008 dollars. *Revenue* is a proxy for total parish revenue, equal to total expenses and capital improvements, plus changes in other assets, less changes in debt. Data are obtained from yearbooks published by the Oklahoma Annual Conference of the United Methodist Church and from the Federal Reserve Bank of St. Louis.
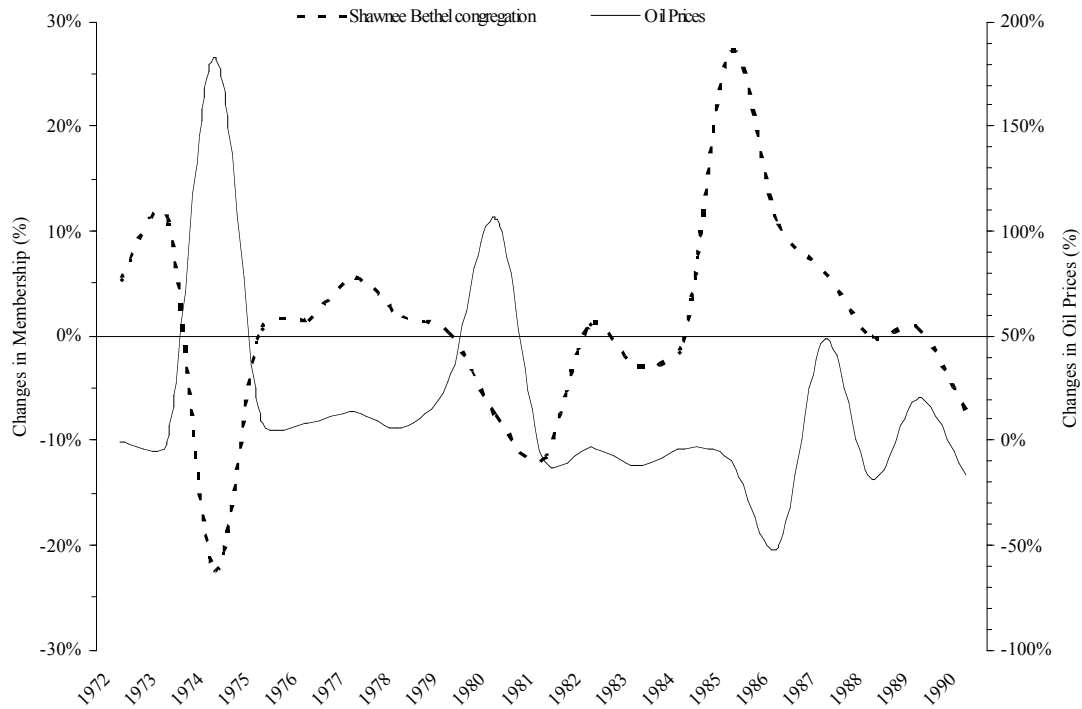
Figure 3
Shawnee Bethel congregation growth and changes in oil prices
The chart shows annual changes in the membership of the Shawnee Bethel, Oklahoma parish of the United Methodist Church, as well as annual changes in the price of oil. Shawnee lies in an oil-rich part of the state, and in the 1920s referred to itself as "The Hub of the World's Largest Oil Fields."

Table 1
Summary Statistics
This table presents summary statistics for United Methodist Church parishes in Oklahoma from 1961 through 2003. *Total Compensation* equals the sum of *Salary*, utilities, and implied rental income. *Salary (per pastor)* and *Total Compensation (per pastor)* represent aggregates that account for ministers who serve circuits with more than one parish. *Average Attendance* and *Sunday School Attendance* are the mean annual values in each parish for attendance Sunday worship services and Sunday School, respectively. *Added: Professions of Faith* equals the number of new members added for the year due to professions or restorations of faith. *Added: Other Denomination* and *Added: Other Methodist* represent members added during the year that previously belonged to another religious denomination or to other United Methodist churches, respectively. *Removed: Action* represents members removed due to inactivity. *Removed: Withdrawn* equals the number of members who leave a parish without reporting other reasons. *Revenue* is a proxy for total parish revenue, equal to total expenses and capital improvements, plus changes in other assets, less changes in debt. All amounts are presented in constant 2008 dollars. Data are obtained from yearbooks published by the Oklahoma Annual Conference of the United Methodist Church.

Variable	Mean	25th %ile	Median	75th %ile	Std. Dev.	Obs.
Salary (per parish)	$23,191	$7,768	$20,694	$33,600	$18,554	24,989
Total Compensation (per parish)	$30,216	$9,362	$27,360	$43,957	$24,376	24,989
Salary (per pastor)	$29,511	$17,517	$28,389	$37,906	$17,700	19,637
Total Compensation (per pastor)	$38,421	$22,651	$36,890	$49,586	$23,130	19,637
Membership	436.57	95	201	443	729.07	24,961
Average Attendance	115.23	33	65	123	191.63	23,412
Sunday School Attendance	90.35	25	48	95	152.88	23,980
Annual Change in Membership	0.54	-3	0	6	38.84	24,989
Members Added	18.85	2	7	19	39.64	24,989
Members Removed	18.31	2	6	18	41.99	24,989
Added: Professions of Faith	6.33	0	2	7	12.39	24,989
Added: Other Denomination	3.87	0	1	4	10.76	24,989
Added: From Other Methodist	8.65	0	2	8	20.31	24,989
Removed: Action	0.52	0	0	0	14.78	24,989
Removed: Dead	4.34	1	2	5	7.32	24,989
Removed: Other Denomination	2.20	0	0	2	5.76	24,989
Removed: To Other Methodist	7.38	0	2	7	16.61	24,989
Removed: Withdrawn	3.86	0	0	0	24.66	24,989
Revenue	$173,543	$22,981	$65,014	$163,011	$424,973	23,676
Revenue/Membership	$355	$219	$315	$440	$227	23,655

Table 2
Regression estimates of pay-performance sensitivity for ministers
This table presents regression estimates of changes in pastoral compensation against changes in various performance measures for United Methodist Churches in Oklahoma from 1961 through 2003. Pastors' first years at a particular church are excluded. *Total Compensation* equals the sum of *Salary*, utilities, and implied rental income. *Revenue* is a proxy for total parish revenue, equal to total expenses and capital improvements, plus changes in other assets, less changes in debt. *Average Attendance* and *Sunday School Attendance* are the mean annual values in each parish for attendance Sunday worship services and Sunday School, respectively. All performance variables are lagged by one year. All regressions include year indicator variables. *t*-statistics are shown in brackets, using standard errors clustered by parish. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively, using two-tailed tests. All dollar amounts are presented in 2008 dollars and Δ indicates a change in the associated variable.

Dependent Variable:	Δ(Total Comp.)	Δ(Total Comp.)	Δ(Total Comp.)	Δ(Total Comp.)	Δ(Total Comp.)	ΔSalary
Δ(Members$_{t-1}$)	$11.05 ***				$9.14 ***	$7.40 ***
	[4.27]				[4.37]	[5.33]
Δ(Average Attendance$_{t-1}$)		$4.87 ***			$1.73	$1.98
		[2.71]			[0.52]	[0.62]
Δ(Sunday School Attendance$_{t-1}$)			$7.09 ***		$6.28 ***	$7.95 **
			[3.48]		[2.82]	[2.45]
Δ(Revenue$_{t-1}$) x 10^{-3}				-$0.08	-$0.15	-$0.28
				[-0.38]	[-0.66]	[-1.60]
Observations	15,768	13,854	14,414	14,307	12,465	12,465
R-squared	0.060	0.055	0.060	0.054	0.072	0.071
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of Church Clusters	705	682	686	688	671	671

Table 3
Regression estimates of changes in parish revenue
This table presents regressions of changes in revenues on changes in membership, by type, for United Methodist Churches in Oklahoma from 1961 through 2003. *Revenue* is a proxy for total parish revenue, equal to total expenses and capital improvements, plus changes in other assets, less changes in debt. Definitions of various membership change classifications appear in Table 1. All performance variables are lagged by one year, except for the alternative lags of membership changes. All regressions include year indicator variables. *t*-statistics are shown in brackets, using standard errors clustered by parish. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively, using two-tailed tests. All dollar amounts are presented in 2008 dollars and Δ indicates a change in the associated variable.

Dependent Variable:	Δ(Revenue)	Δ(Revenue)
Members Added$_{t-1}$	$451 ***	
	[4.10]	
Added: From Other Denomination		$1,467 *
		[1.91]
Added: Professions of Faith		$584
		[0.73]
Added: From Other Methodist		$441 *
		[1.92]
Members Lost$_{t-1}$	-$154	
	[-1.61]	
Lost: To Other Denomination		-$955
		[-1.62]
Lost: To Other Methodist		-$884 ***
		[-3.39]
Lost: Withdrawn		$109
		[0.87]
Lost: Action		$34
		[0.76]
Lost: Death		-$127
		[-0.43]
Observations	22,446	22,446
R-squared	0.009	0.012
Year Fixed Effects	Yes	Yes
Number of Church Clusters	701	701

Table 4
Pay-performance sensitivity with respect to detailed performance measures
This table presents regression estimates of changes in pastoral compensation against changes in various performance measures for United Methodist Churches in Oklahoma from 1961 through 2003. Pastors' first years at a particular church are excluded. *Total Compensation* equals the sum of *Salary*, utilities, and implied rental income. Other variable definitions appear in Table 1. All performance variables are lagged by one year. *City Church* is an indicator variable for churches located in Tulsa or Oklahoma City. All regressions include year indicator variables. *t*-statistics are shown in brackets, using standard errors clustered by parish. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively, using two-tailed tests. All dollar amounts are presented in 2008 dollars and Δ indicates a change in the associated variable.

Dependent Variable:	Δ(Total Comp.)		Δ(Total Comp.)		Δ(Total Comp.)	
Members Added$_{t-1}$	$14.71	***				
	[5.65]					
Members Lost$_{t-1}$	-$6.68	***				
	[-3.61]					
Added: Professions of Faith			$17.70	***	$16.41	***
			[2.88]		[2.71]	
Added: From Other Denomination			$17.78		$18.44	
			[1.47]		[1.51]	
Added: From Other Methodist			$32.51	***	$20.59	***
			[4.71]		[3.41]	
Added: From Other Methodist x City Church					$15.97	*
					[1.77]	
Lost: Action			$0.36		-$0.02	
			[0.22]		[-0.01]	
Lost: Death			$2.69		$3.01	
			[0.42]		[0.48]	
Lost: To Other Denomination			-$8.44		-$8.65	
			[-0.81]		[-0.86]	
Lost: To Other Methodist			-$43.39	***	-$22.97	***
			[-6.74]		[-3.77]	
Lost: To Other Methodist x City Church					-$32.69	***
					[-3.40]	
Lost: Withdrawn			$1.20		$0.94	
			[0.63]		[0.48]	
City Church					$414.10	***
					[4.16]	
Observations	15,768		15,768		15,768	
R-squared	0.064		0.073		0.075	
Year Fixed Effects	Yes		Yes		Yes	
Number of Church Clusters	705		705		705	

Table 5
Additional models of pay-performance sensitivity for ministers
This table presents regression estimates of pastoral compensation for United Methodist Churches in Oklahoma from 1961 through 2003. The first two columns show regressions of the change in total pastoral compensation as a function of lagged values of changes in church membership. The right column shows the natural log of total compensation as a function of the natural log of church membership lagged one year. Pastors' first years at a particular church are excluded. *Total Compensation* equals the sum of *Salary*, utilities, and implied rental income. All regressions include year indicator variables, and the model in the right column includes fixed effects for each unique pastor-church pair. *t*-statistics are shown in brackets, using standard errors clustered by parish. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively, using two-tailed tests. All dollar amounts are presented in 2008 dollars and Δ indicates a change in the associated variable.

Dependent Variable:	Δ(Total Comp.)		Δ(Total Comp.)		Ln(Total Comp.)	
Δ(Members$_{t-1}$)	$6.63	**	$3.54			
	[2.54]		[1.07]			
Δ(Members$_{t-2}$)	$6.24	***	$7.21	***		
	[4.22]		[3.28]			
Δ(Members$_{t-3}$)			$4.21	*		
			[1.86]			
Ln(Members$_{t-1}$)					0.35	***
					[9.75]	
Total Estimated Impact of Δ(Members)	$12.87		$14.96			
F-Statistic for Sum of Coefficients	18.43	***	18.38	***		
Observations	9,485		5,686		23,766	
R-squared	0.070		0.068		0.136	
Year Fixed Effects	Yes		Yes		Yes	
Pastor-Church Fixed Effects	No		No		Yes	
Number of Pastor-Church Combinations					8,641	
Number of Church Clusters	674		642		660	

Table 6
Pay-performance sensitivity and risk factors
This table presents regression estimates of changes in pastoral compensation against changes in membership for United Methodist Churches in Oklahoma from 1961 through 2003. Pastors' first years at a particular church are excluded. *Total Compensation* equals the sum of *Salary*, utilities, and implied rental income. *High Volatility* is an indicator variable for churches whose time series volatility of annual percentage changes in membership lies above the sample median. *Oil Driven* is an indicator variable based upon regressions of each church's membership changes as a function of oil price changes; the indicator equals 1 for churches with above-median values of the goodness-of-fit measure. *Avg. Membership* is the average membership for each church over the sample period. All regressions include year indicator variables. *t*-statistics are shown in brackets, using standard errors clustered by parish. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively, using two-tailed tests. All dollar amounts are presented in 2008 dollars and Δ indicates a change in the associated variable.

Dependent Variable:	Δ(Total Comp.)		Δ(Total Comp.)		Δ(Total Comp.)	
Δ(Members$_{t-1}$)	$22.63	***	$18.48	***	$23.44	***
	[4.91]		[5.85]		[5.13]	
Δ(Members$_{t-1}$) x High Volatility	-$10.75	***			-$8.45	**
	[-2.59]				[-2.16]	
Δ(Members$_{t-1}$) x Oil Driven			-$8.06	**	-$5.67	*
			[-2.26]		[-1.69]	
Δ(Members$_{t-1}$) x Avg. Membership x 10^{-3}	-3.29	**	-1.90	**	-3.09	***
	[-2.42]		[-2.03]		[-2.63]	
Observations	15,760		15,758		15,758	
R-squared	0.062		0.062		0.063	
Year Fixed Effects	Yes		Yes		Yes	
Number of Church Clusters	698		696		696	

Table 7
Pay-performance estimates for changes in church appointments
This table presents regression estimates of changes in pastoral compensation against changes in membership for United Methodist Churches in Oklahoma from 1961 through 2003. The sample includes only observations for pastors whose church appointment changes during the year, so that changes in compensation for the new church versus the old is regressed against performance in the pastor's last year in the old church. All variable definitions are the same is in Tables 4 and 6. All regressions include year indicator variables. *t*-statistics are shown in brackets, using standard errors clustered by parish. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively, using two-tailed tests. All dollar amounts are presented in 2008 dollars and Δ indicates a change in the associated variable.

Dependent Variable:	Δ(Total Comp |Move)	Δ(Total Comp |Move)
$\Delta(Members_{t-1})$	$30.91 ***	
	[3.67]	
$\Delta(Revenues_{t-1})) \times 10^{-3}$	$1.17	$1.60
	[0.94]	[1.59]
$\Delta(Average\ Attendance_{t-1})$	-$0.96	$4.02
	[-0.36]	[1.25]
$\Delta(Sunday\ School\ Attendance_{t-1})$	-$3.64	-$4.59
	[-0.81]	[-1.45]
Added: Professions of Faith		$208.5 ***
		[5.00]
Added: From Other Denominations		$255.9 ***
		[3.29]
Added: From Other Methodist		$38.11
		[1.53]
Lost: Action		-$35.29
		[-0.74]
Lost: Dead		$5.88
		[0.10]
Lost: To Other Denomination		-$4.00
		[-0.07]
Lost: To Other Methodist		-$5.98
		[-0.23]
Lost: Withdrawn		$0.26
		[0.03]
Total Comp$_{t-1}$	-0.196 ***	-0.298 ***
	[-10.49]	[-12.92]
Observations	2,929	2,929
R-squared	0.122	0.157
Year Fixed Effects	Yes	Yes