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**Salvation as a Selective Incentive:
An Olsonian Analysis of the
Faith vs. Works Cleavage**

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Abstract: As club goods, religions face the problem of free riding. Smaller religious clubs, such as cults or sects, can often surmount this problem through communal pressures or by requiring their members to provide easily monitored signals. Generally, however, such tactics will be unavailable or too costly for large denominations, and, as such, these denominations must look for other techniques to avoid free riding. This paper argues that the Roman Catholic doctrine of justification by faith and works serves as an Olsonian selective incentive, and presents empirical evidence in support of this claim. It also examines the historical and theological development of the doctrine in an attempt to discern if the faith plus works model of salvation evolved in the Roman Catholic Church for economic, as opposed to theological, reasons.

Introduction

The Reformation marked the beginning of the end of the Roman Catholic Church's religious monopoly in the western world. Although the ultimate issues of contention, the church's doctrines of justification and ultimate salvation, had been amorphous and malleable for much of Christianity's existence,¹ the leaders of the church chose to force Martin Luther and the dissidents he inspired out of their community and create an irreparable fissure among Christians, rather than question or modify the faith plus works model of salvation. According to Rome, in the wake of the Council of Trent, it was an article of faith that salvation required both faith in God and acceptance of Christ as savior and good works. Luther and those who followed essentially claimed that because it was clear that fallen man could never "earn" his salvation through good works, this bit of church doctrine, which was operationalized through the sale of indulgences, amounted to little more than extortion.

Despite the recent Joint Declaration on the Doctrine of Justification signed by representatives of the Lutheran World Federation and the Catholic Church, the Catholic and the Protestant denominations still retain their differences regarding what is necessary for salvation. The Catholic Church continues to recognize

¹ Indeed, St. Augustine himself spent most of his career arguing about these matters with other intellectual leaders of the Christian Church, winning the battles but eventually losing the theological war, on his way to becoming one of the most important fathers of the church.

indulgences for the living and on behalf of the dead,² while the Protestant churches have not abandoned their focus on faith alone. While it is unlikely that this issue will be resolved to either group's satisfaction in the form of some incontrovertible proof of the formula for salvation (assuming the more basic questions regarding fundamental issues such as the existence of God and an afterlife have even been solved), it is possible that the Catholic doctrine serves a consequentialist end, regardless of its ontological validity. While this paper leaves the spiritual question to the theologians, institutional economics can provide an insight into the practical consequences of the faith plus works model of salvation, providing an alternate justification for its existence. By serving as a selective incentive (Olson 1965), the Catholic doctrine of salvation mitigates the free rider problem that is endemic to all clubs.

Section I of this paper looks at the well-developed notion of religion as a club good. Section II discusses how the faith plus works model of salvation can mitigate the free rider problem in theory and in practice. Section III investigates the historical and theological development of the doctrine in an attempt to discern whether the rule developed for extra-theological reasons. Section IV examines some modern data on church contributions to determine whether or not the Catholic model of salvation effectively limits free riding. Section V concludes.

I. Religious Clubs

The economic analysis of clubs dates at least³ to Buchanan (1965) and Olson (1965), and was subsequently developed by many others.⁴ The explicit application of these models to religious institutions is not well developed in the economics literature.⁵ While much of the pure club material focuses on the optimal size of a club, Iannaccone (1992) focuses on a different problem when applying the club model to religious congregations. He models religious clubs as exhibiting positive returns to participatory crowding, further assuming that these clubs are "anti-congestible." In that model, Iannaccone takes as the primary problem for religious groups the reduction of free riding with respect to unobservable inputs to the religious experience.

² *Catechism of the Catholic Church* § 1471.

³ However, despite the absence of explicit reference to a theory of clubs, the origins could be traced as far back as Pigou (1920) and Knight (1924), and certainly Tiebout's (1956) work could be seen as a theory of clubs.

⁴ For a nearly exhaustive survey of the club literature through 1980, see Sandler and Tschirhart (1980).

⁵ The notable exception is Iannaccone (1992) who is also well represented in the better-developed sociology (Iannaccone 1988, 1994) literature, which includes many applications of economic models of clubs to religious activity.

In Iannaccone's framework, the value of religious activity to an individual is a function of his own religious effort and the effort put forth by others. As in the seminal Olson and Zeckhauser (1966) article on military alliances, the low demanders of the congregation have an incentive to free ride on the efforts of the high religious demanders. To mitigate this problem, Iannaccone suggests that small congregations use rigorous membership requirements to sort high demanders from low demanders *ex ante*. After the individual is admitted to the congregation, visible sacrifices are used to monitor the members' continued dedication to the religion. These sacrifices include dietary and dress restrictions as well as other behavioral requirements and "wasteful" offerings.

Despite the power of Iannaccone's model, there is no complementary analysis in the literature that examines similar issues in mass religions for which this kind of behavioral monitoring may not be practical.⁶ Further, the existing analysis does not examine how the belief systems of the various religions themselves may actually affect the degree of free riding found in the denominations.⁷ This type of institutional examination may provide insights into how religions develop, as well as how people react to that development.

II. Salvation as a Selective Incentive

Olson (1965) described selective incentives as mechanisms by which clubs could solve or at least mitigate free riding induced by the non-exclusion property of public goods. That is, by conditioning a member's access to the non-excludable public good on a member's decision to purchase or take part in some other excludable benefit provided by the club potential members will be more willing to pay for membership. For example, while the American Association for Retired People (AARP) cannot restrict the beneficial effects of its lobbying on the behalf of the elderly to its members alone, it can additionally sell excludable benefits which would be attractive to elderly people, such as the ubiquitous AARP discounts found at hotels, restaurants, and the like. By offering its discount cards to members only, the AARP can raise revenues to fund its public good provision.

⁶ Or, even if practical, mass religions or those with imperial hopes may avoid such rigorous attempts at screening of potential congregants.

⁷ The work of Zaleski and Zech (1992, 1995) on the determinants of church contributions provides some general insights as to the degree of free riding found in various denominations. Their empirical work, however, does not rely on any analysis of the institutional foundations of this free riding.

As described above, religions exhibit the characteristics of club goods. As with any club good, it would conceivably be possible, strictly speaking, to exclude an individual from enjoying the benefits provided by the club by simply charging a membership fee. Some religions have mandatory tithing and a few may restrict entry to their services to only those members who have paid the stipulated dues. These options may not represent a universally applicable profit-maximizing scheme for religious groups. For example, some might view the explicit mixing of financial matters with spiritual matters as distasteful. This may lead to alienation of some potential customers.

Even disregarding these psychological preferences, the transactions costs involved in charging members for the church services might be large, and if the best “advertising” available with respect to religious services is participation in them,⁸ it may not be the best strategy to exclude potential congregants from church services.⁹ Further, if religious activity does exhibit positive returns to participatory crowding (Iannaccone 1992), a reasonable strategy of the church would be to maximize the size of its congregation. That is, as long as each marginal member provides additional benefit greater than any associated cost of congestion his presence imposes, it is optimal for the religion to allow him to participate in its services. For the surplus-maximizing religious firm itself, however, the optimization problem is not a simple one. Inducing individuals to reveal their marginal benefit from church attendance might prove impossible, and even an optimally chosen fee schedule will leave some surplus unexploited.

In efforts to avoid explicit fee charging for worship, while still inducing individuals to support a church’s activities financially, many congregations rely on Olsonian selective incentives, such as requiring active congregation membership for the use of church schools,¹⁰ attendance at social functions, and participation in non-worship services. In relatively small congregations, internal social pressures and benefits may serve as selective incentives.¹¹ Such mechanisms may not be universally successful. Also, from the point of view of the religion as a whole, there may be reluctance to rely on these measures to the extent that they produce inter-religion competition at the congregation level,

⁸ Because much of the value from communal religion derives from the intangible feeling of community itself, external advertising would likely be of limited use.

⁹ In fact, much proselytizing done by both mainstream churches and more marginal groups involves inviting others to attend their services.

¹⁰ This mechanism is particularly well exploited by Catholic congregations.

¹¹ This interpretation of these informal social mechanisms differs slightly from Iannaccone’s (1992) explanation of “sacrifice and stigma” as screening devices that dissuade the participation of low demanders.

imposing extra costs that do not generate any marginal financial benefit at the collective level.

While there has been some discussion of the use of these kinds of selective incentives by religious congregations,¹² the focus has been primarily on elements of religion that are largely peripheral to the religious institutions. That is, central elements of the religion's creeds have been left unexamined in this framework. Perhaps this can be justified on the grounds that fundamental religious beliefs are embraced as primary or eternal truths imparted by God and a discussion of them in teleological terms is fundamentally misplaced. However, creeds and belief systems do change over time; rational agents develop those changes; and they are implemented through purposeful institutions. Recognizing this opens the field of religion to public choice analysis.

Ekelund, Hebert, Tollison, and Anderson (1996) presented an industrial organization analysis of the medieval Catholic Church, where they touched on the possibility that the church's hierarchy purposefully organized the church to maximize its profit. However, even this work remained largely agnostic with respect to variation in church doctrine and theological development.¹³ In an attempt to make a marginal entry into this void, I propose a positive account of the development of the major theological innovation of Christian history.

Regardless of whether one ascribes mercenary or spiritual motives to the leadership of the Roman Catholic Church, there is value to reducing free riding within the religious club. If Church leaders merely wish to line their pockets and provide themselves with power, prestige, and comfort, there is an incentive to reduce free riding to increase profits. However, if purely sacred motives drive church decisions, there is still an incentive to limit free riding and generate increased revenues. More active participation improves the return to all of the faithful (Iannaccone 1992), and increased revenues allow the church to undertake more charity and education projects, as well as build more elaborate testaments to God's goodness.

As discussed in section III below, the Catholic doctrine of justification did not spring whole from Christian scripture; it developed over the course of 1500 years, and has even exhibited marginal changes in recent years. This begs the question of why, in the wake of such a non-linear development, the Catholic

¹² See, for example, Hoge, Zech, McNamara, and Donohue (1996).

¹³ Such an incomplete analysis would be analogous to the field of law and economics focusing entirely on the institutional structure of a legal system, while ignoring the positive analysis of either the origins or the ultimate effects of substantive law.

Church was willing to expel the Protestant reformers and their followers, rather than entertain different perspectives on the salvation model. Perhaps, despite the historical background, church leaders really were or believed they were the recipients of divine revelation, or perhaps the faith plus works model of salvation served some aspiritual end. Specifically, perhaps the model of salvation functioned as a selective incentive geared toward surmounting the free rider or other organizational problems.

As indicated below, in the church's early years, when it functioned essentially as a closely-knit sect, and presumably could rely on social norms and internal pressures, the faith plus works idea of justification was not adopted into accepted church doctrine. In fact, it was, on occasion, declared heretical in various formulations. However, as the church grew into a widespread organization that, presumably, could no longer rely exclusively on norms, the faith plus works model of salvation became an article of faith, the preservation of which was implicitly worth the loss of the church's monopoly position. Putting aside the possibility of divine direction,¹⁴ whether church actors consciously chose the faith plus works model to solve free riding or whether it evolved to fill that role independent of specific church intention, it does provide a very good selective incentive.

The quality of this incentive derives from its ability to price discriminate perfectly and its very low transactions costs. When faced with the choice between heaven and hell, individuals subscribing to the reality of these terms will be willing to pay most if not all of their surplus to attain salvation.¹⁵ Further, because God is believed to be omniscient, it is not necessary for the church to expend resources in making sure individuals comply with the faith plus works model.

As operationalized in the empirical test below, this incentive will tend to bind only for those facing death if God allows sinners to be justified at any time prior to death. However, in medieval times, because lifespan had both lower mean and higher variance, in some sense, a much higher proportion of Catholics during that time would have fallen into the reasonably defined "near death" category than do today.¹⁶

¹⁴ Although, perhaps God understood selective incentives even before Olson did.

¹⁵ This notion can be formalized along the lines of Pascal's Wager or its modern counterparts.

¹⁶ An analysis of the development of the Catholic sacrament of reconciliation in this vein would also be interesting. During the first millennium of the Christian Church, there was no separate sacrament of reconciliation. Forgiveness of sins was the function of baptism, and while the effects of venial or less serious sins could possibly be overcome by other means, the commission of a

III. The Development of the Catholic Model of Salvation

This section attempts to sketch out the historical/theological development of the Christian doctrines regarding salvation, specifically that referred to as justification.¹⁷ While a full analysis of these topics would (and has) fill many volumes, the purpose of the present section is to provide a framework for analyzing doctrinal development from the perspective of institutional economics. In essence churches are firms, seeking to maximize some value function, and, as such, their activities and development should indicate efforts toward that maximization.

Pre-Augustinian Tradition

As with many areas of Christian doctrine, Augustine of Hippo exerted an enormous amount of influence on the development of a doctrine of justification. “For the first three hundred and fifty years of the history of the church her teaching on justification was inchoate and ill-defined (McGrath 1998).” However, while much of the intellectual activity of the church in this pre-Augustine period was spent on other matters such as defining the extent of the New Testament canon and specifying an official Christology, there were some attempts to outline a theory of justification and its relationship to salvation.

In particular, Ambrosiaster and Tertullian seemed to embrace a works-based notion of justification. In the earliest known Latin commentary on Paul’s epistles, Ambrosiaster interprets Paul’s claim that man is justified by faith as merely a rejection of Jewish ceremonial law. That is, Paul did not express a denial of the necessity of works for salvation. Tertullian went a step further in claiming that a man who performs good works can be said to make God his

mortal or very serious sin after baptism was highly problematic. To overcome this problem, individuals often waited until they grew old before receiving baptism. Eventually, however, the church developed the sacrament of reconciliation, allowing individuals to feel confident in being baptized early in life without the fear of committing a major sin before death. Perhaps this change allowed the church to retain post-baptism sinners and give individuals the incentive to become a full member of the church early in life.

¹⁷ The concept of justification as the salvation metaphor is absent in the Eastern Right Christian Church, whose salvation model relies on the notion of deification. While intellectual historians of the East/West schism explain this difference in terms of the philosophical differences between the Hellenistic and the Latin worlds (especially the influence of Neo-Platonism in the former), perhaps an economic explanation would be appropriate here as well.

debtor. This notion is also developed in his teaching that man can satisfy his obligation to God through penance.¹⁸

While the presentation of these thinkers may imply a works-bias on the part of the early church, there was no definitive answer accepted by or enunciated by the church during this period. To the extent that any consensus did exist, it appears to have been built on both reactions against its competing forces of Jewish legalism and Greek Platonism with its fatalistic claims of predestination. In some sense, it appears as though individuals within the church were attempting to carve out a theological and philosophical niche within its particular historical setting.¹⁹ To a large extent, probably due to the uncertainty regarding what writings would be included in the official canon, this discourse was not framed in biblical terms. Instead, it adopted the language of Greek philosophy, with much of the dialogue focusing on the possibility of the freedom of human will.

Augustine

Among Augustine's most important contributions to Christian thought is the concept of grace, which Augustine developed in his attack of the immense role the Pelagians attributed to human free will in justification. For the Pelagians, humans had the ability to avoid sin and were not infected with any original sin through Adam's fall. From those propositions, it followed that man could attain salvation without the aid of Christ's example or God's grace; he could effectively justify himself through living a good life. To the contrary, Augustine held that, because of Adam's fall, man was essentially broken and was incapable of wanting or achieving justification. However, through the divine gift of faith, God acts upon man's rational soul, at which point man must assent to being justified or not. Once justified the sinner may begin to acquire merit. But merit itself is also a divine gift that does not originate in man's works (McGrath 1998). It should be noted, however, that the role of the church and its sacraments were given prominent roles in intermediating grace and man's assent to it.

¹⁸ McGrath (1998).

¹⁹ The early church attempted to carve out a niche for itself without limiting its potential demand however. In the first assembly at Jerusalem (48), the church ruled that circumcision was not necessary for membership in the Christian church and ultimate salvation. In the second assembly in Jerusalem, in an attempt to placate the Jewish members of the Christian sect, the church indicated that Gentile Christians should follow Jewish dietary prohibitions (Cwiekowski 1988). In Iannaccone's framework, perhaps the early Christians wished to retain the low-cost monitoring mechanism of adherence to dietary law but did not wish to use the screening device of circumcision because of its potential to drive away the converts Paul was amassing in the Greek world.

The church agreed with Augustine and condemned Pelagius and his followers at the councils of Carthage (418), Ephesus (431), and Orange (529), adopting the concept of original sin and the necessity of grace. While not quite agreeing with Augustine's thoughts on the essential irresistibility of grace for the chosen people and the impossibility of salvation for the reprobate, the church appeared to reject the notion that man could earn his salvation (Ozment 1980). From the church's perspective, its adoption of a modified Augustinian position solidified its role in man's salvation because man could not save himself, but, rather, needed God's grace. Because man was fundamentally unable to accept that grace, it needed the help of the church and its sacraments. However, the church did not accept Augustine's language on predestination, perhaps in an attempt not to alienate potential converts. In fact, throughout the age of Christianity's dominance in the Roman Empire, the church's theological and organizational decisions reflected a definite desire to strengthen the role of the church in determining what was required of individual faith, while still recognizing the need not to alienate a wide-spread community of believers (Hall 1991).

The Scholastics on the Eve of the Reformation

According to the orthodox teaching of the medieval church, following Augustine, for a fallen man to regain righteousness, he must 1) receive a direct infusion of healing grace through the church and its sacraments; 2) freely turn his will to God and away from sin; and 3) receive priestly absolution of the guilt created by that sin. For the scholastics, a main point of contention was how the divine grace could be present in the human soul. Peter Lombard suggested that the love man exhibits for God and his fellow man is actually the Divine working internally without man's aid or volition. To this Thomas Aquinas responded that charity and good works, necessary for salvation, were voluntary and could be considered man's own. He claimed that divine grace was present in man as merely an accidental form, which must be turned into a substantial form through the works of the human himself through the church and its sacraments. A good human act, for Aquinas, perfects a human being making him more like God; thus, it is through good acts that man is brought closer to salvation (Maurer 1962).

Much of the debate on these matters during this period involved either an attack on or defense of this Thomist position. Duns Scotus rejected the position, claiming that the divine salvation could not be made contingent on human acts or habits of grace. Peter Auriole took the Thomist position a step further, in reaction to Scotus, in claiming that God could only be present where grace and love were present; by nature, God inclined to all who possessed and evidenced his grace.

William of Ockham took the semi-Pelagian position that habits and works directed by the church and its sacraments were unnecessary for humans to attain grace and ultimate salvation; he already possessed the faculties to receive grace directly. Gregory of Rimini, a scholar of Augustine rejected both Auriole and Ockham, on the basis of man's inherent sinfulness. According to Rimini, God predestined and reprobated in eternity solely as He pleased, disregarding any merit or demerit (Ozment 1980). Interestingly, of the late medieval thinkers on these matters, Aquinas, who asserted the necessity of both church guidance and good works, was the most respected by the hierarchy of the period, quickly attaining sainthood after his death as well as status as a Doctor of the Universal Church.

*Luther's Criticism*²⁰

Martin Luther eventually accused all of late medieval theology, save Rimini, of being infected with Pelagianism. Luther, an Augustinian friar who had experienced a degree of upward mobility within the church,²¹ focused primarily on the issue of justification in his disputes with Rome. This is evident in his statement to the effect that he would concede the Pope his authority if the church would concede the free justification of sinners in Christ (McGrath 1998). The question then arises why the church felt it necessary to take swift action against Luther, who could be seen as standing in a line of tolerated theological discourse regarding the nature of God's justification of sinners. It was not simply that Luther started out as a revolutionary bent on the general destruction of Rome's earthly authority. Instead, the content of Luther's teachings and the responses of Luther's followers to them were of a different character than the philosophical musings of Scotus, Ockham, or Rimini.²² One might speculate that the more concrete application²³ of the Lutheran justification model as a criticism of the sacramental function of the church, including his rejection of the necessity of church-based reconciliation and the usefulness of indulgences, demanded more action than the abstract proclamations of his predecessors.²⁴ Taking special notice

²⁰ Focusing on Luther is not meant to ignore the interesting organizational dialectic produced by other reformers, whose work also, to a large degree, centered on the notion of justification. Restricting attention to Luther is meant to be suggestive, rather than exhaustive.

²¹ He even spent a good deal of time in Rome itself.

²² For example, while many of Luther's theses were declared heretical, no writing by Scotus ever received a similar judgment.

²³ Luther's "Sermon on Indulgences and Grace" was delivered in the popular vernacular as opposed to being issued in an academic format.

²⁴ Johann Tetzel saw Luther's 95 Theses as a covert attack on the whole penitential system of the church.

of Luther, while having largely ignored the figures who came before him, implies that Rome's reaction was not solely based on theological concerns.

The Council of Trent

The major church response to Luther's teachings was issued at the Council of Trent, where the following was declared on the issue of justification: "Before men, therefore, who have been justified in this manner, whether they have preserved uninterruptedly the grace received, or whether they have recovered it when lost, are to be set the words of the Apostle: Abound in every good work, knowing that your labour is not in vain in the Lord; for God is not unjust, that he should forget your work, and the love which you have shown in his name; and, do not lose your confidence, which hath a great reward. And, for this cause, life eternal is to be proposed to those working well unto the end, and hoping in God, both as a grace mercifully promised to the sons of God through Jesus Christ, and as a reward which is according to the promise of God Himself, to be faithfully rendered to their good works and merits."²⁵ During the proceedings on justification, the most cited theologians were Augustine and Aquinas (McGrath 1998), and by upholding the necessity of the sacraments, the church clearly rejected Luther's individual-based model of salvation.

IV. The Price of Heaven

As developed in section II above, the faith plus works model of salvation provides a strong incentive for the penitent to undertake good works in order to secure his place with God after death. Because the Catholic sinner receives his penance from the agent of his Church, as opposed to his Protestant counterpart who directly reconciles himself with God, the Church has an advantage in securing the fruits of the penance for itself. Also, for non-reconciliation induced good works, the hopeful Catholic who does not wish to squander his resources on activities which may not necessarily constitute a good work²⁶ may be inclined to use his church as a kind of good works clearing house. Each of these institutional arrangements will tend to direct the benefits coming from a Catholic's good works disproportionately to his church. While the former arrangement would not apply to members of Protestant churches, the latter obviously could. A Protestant, undertaking good works out of a natural inclination toward charity rather than out

²⁵ The Council of Trent, Sixth Session, Chapter XVI (January 13, 1547), made available by the Hanover Historical Texts Project (<http://history.hanover.edu/early/trent.htm>).

²⁶ For example, give money to a homeless man who may use it to secure drugs, donate money to a hospital that may provide abortions, support a school that encourages students to use contraception, etc.

of a desire to get to heaven, may be just as unsure of the ultimate effects of his benevolence, causing him to trust in the judgment of his congregation rather than his own. From an empirical standpoint, the difficulty lies in distinguishing those works done out of a sheer preference to undertake charity from those meant as a down payment on heaven.

The answer to this difficulty lies in who is likely to be especially concerned about salvation. Given that a Catholic, through his priest, and a Protestant directly can always repent for a lifetime of sins even if the repentance takes place on one's deathbed, it will be those Catholics facing a relatively high likelihood of death who face the strongest incentive to buy their way into heaven. That is, if an elderly Protestant wishes to secure his spot in heaven, he must merely accept the salvation freely offered by God. If a young Catholic, with little expectation of death in the near term, wishes to get into heaven, he must simply make sure he has sufficient time before his death to repent for his sins, pay his penance, and amass enough good works to merit heaven. The old Catholic, for whom death is immanent, has neither the luxury of a Protestant-type direct reservation in heaven, nor the time that his younger fellow Catholic has to waste in earning salvation; thus he faces a strong incentive to undertake many good works in his twilight years.

The Data

I used church contributions data²⁷ to highlight this selective incentive effect created by the Catholic model of salvation. In 1993, a survey of approximately 19,000 Christian households (yielding 10,902 usable responses), roughly equally divided among five denominations²⁸ and nine geographic locations, was conducted regarding their contribution habits, as well as personal information about their finances and characteristics. In previous analyses of these data, it was determined that the significant determinants of church giving included family income, age, level of involvement in the church, and denomination (Hoge, Zech, McNamara, and Donahue 1996). Analysts also determined that specific fund-raising techniques such as capital campaigns and pledge cards might have an effect on members' giving decisions. Iannaccone (1997) suggests that income has

²⁷ The data were made available by the American Religion Data Archive (Dataset: ACGSMBRS) and were originally collected by Dean Hoge, Charles Zech, Patrick McNamara, and Michael Donahue.

²⁸ Four Protestant denominations (Assemblies of God, The Southern Baptist Convention, The Evangelical Lutheran Church of America, and The Presbyterian Church) and the Roman Catholic Church.

a quadratic relationship with contributions on both theoretical and empirical grounds.

While this dataset represents the best information available on church giving specifically, given its large number of observations and fastidious sampling methodology, it provides only a second best option for testing the implications of this article. Specifically, to test the hypothesis detailed here, it would be optimal to have panel data in which one could observe the development of an individual's contribution habits over time. Empirical evidence indicating that the increase in giving an individual exhibited over his lifetime was greater for Catholics relative to the other Christian denominations would be very persuasive with respect to the argument offered here. However, because no high quality panel data are available, the empirical analysis that follows is merely suggestive of the argument's validity.

The Test

If the faith plus works model of salvation provides a selective incentive for Catholics inducing them to expend more resources in support of their church, we should find that, among the age groups where death and presumably eternal salvation or damnation are most immanent, Catholics respond to the incentive by giving more relative to their younger Catholic counterparts and the young-old differential should be larger than the similar Protestant contribution differential, controlling for other determinants of giving. That is, while it may be the case that older people naturally give more to their church than do younger people due to some normal increase in religiosity,²⁹ there is no reason *a priori* to believe that this age-induced religiosity is not homogenous among different faiths. Therefore, if we do find a systematic relationship between the level of this age effect and the individual's denomination, it is likely that it is the result of some institutional or policy effect present within the denomination. The Catholic doctrine of salvation by faith and works would produce just this kind of effect.

The model to be estimated in explaining an individual's church contribution (C_i) then takes the following form:

$$C_i = \alpha_d + \beta X_i + \phi Z_c + \gamma \text{old}_i + \lambda(\text{old \& Catholic})_i + \varepsilon_i$$

²⁹ An alternate explanation could involve an increase in the taste for the social benefits provided by religious clubs as one ages.

where X_i represents personal characteristics of the individual that might influence his giving decisions and where Z_c represents characteristics of the individual's specific congregation³⁰ that influence his giving decisions. The constant in the equation is allowed to vary by denomination to account for some of the possible selection effects regarding which religion an individual actually chooses.³¹ The "old" variable captures whether or not the individual is in the near-death category, defined for the purposes of this study as being aged seventy-six³² or above.³³ The interaction term (old & Catholic) is meant to examine if, even after controlling for the effect of being in this near-death category generally, there is still some differential effect for Catholics falling in this age group. Thus, if the coefficient on this interaction term is significantly positive, we fail to reject the hypothesis that the faith plus works model of salvation serves as an effective selective incentive for those for whom it is, in some sense, binding.

The results of the empirical analysis, shown in Table 1, do not reveal any surprises.³⁴ As was to be expected, the age and income of the individual have a significantly positive effect on contributions. The effect of education level is positive but insignificant. The effect of whether or not the individual has a child enrolled at a church school, a possible selective incentive, is positive, but not significant at standard confidence levels. An individual's level of attendance at worship services and the length of time he has been a member of the congregation are both significantly positive indicators of contributions. The effects of congregation size indicate a quadratic relationship in which, at low levels, the marginal member increases the average member's contributions, but, at high

³⁰ That is, these are characteristics of the actual denomination franchise that the individual attends. Even within one religion, there may be a good deal of heterogeneity at the retail level through which individual franchises compete for members and donations against both other denominations espousing different creeds and other congregations sharing essentially the same faith.

³¹ Hoge (1996) found that, at the aggregate level, The Assembly of God congregations had the highest level of average giving by members (5% of personal income), followed by Southern Baptist congregations (2.7%). Presbyterian and Lutheran churches had lower levels of giving (both 1.6%), and the Catholic Church had the lowest average of giving (1.2% of personal income).

³² At the time of the survey, life expectancy for both sexes and all races was estimated at just above 75 years of age, according to the National Vital Statistics Report. It might be interesting, if the data were available, to examine this phenomenon in an international setting where it could be examined whether the correct specification of the interaction effect was dependent on countries' life expectancies, which vary quite a bit from country to country. A similar type of analysis for the U.S. could be conditioned on the variation in life expectancies between the sexes and among the races. Because this contribution survey recorded age as only an interval statistic, however, such partitioning is impossible in the current analysis.

³³ All of the results that follow are qualitatively similar if the near-death category is defined as 66 and above. The data do not allow any other useful definitions of "old."

³⁴ The results are robust to a wide range of covariates available in the dataset.

levels, the marginal member decreases the average member's contributions. This is consistent with the participatory crowding model exhibiting congestibility.³⁵

The variables of interest, whether or not the individual is in the "old" or "near death" group, support the salvation as a selective incentive hypothesis. The near death/not near death differential is greater for Catholics than it is for other Christian groups, controlling for any non-denominational tendency of those near death to change their contribution level. This result is robust to a variety of specifications including one in which all denominations are interacted with the old variable, and the old variable itself is dropped from the equation. Another specification of interest in which the signs on the coefficients are consistent, controls for an interaction between non-Catholic and old and Catholic and old, dropping old as a separate control. The difference between the coefficients on these two interactions was \$443 with a standard error of the difference of 294 ($t=1.51$). Thus, the differential effect of being old was greater for Catholics than it was for Protestants.

The specification including old and old interacted with Catholic represents the proper test of the hypothesis. That is, there may be a "near death" effect common to all humans that we need to separate out of the church policy induced "near death" effect for Catholics. While this analysis is not nearly as persuasive as one involving panel data in which we could directly observe the evolution of a person's giving habits over a lifetime, the limited cross-sectional analysis presented here is highly suggestive.³⁶

³⁵ However, it is also consistent with a model in which congregations are started by a very dedicated core that gives substantial amounts to the church, while allowing more marginal members in, as long as their contribution covers the negligible cost of admitting them.

³⁶ Some have argued that the internal split between pre and post Vatican Council II Catholics might be the driving force in differences between old and young Catholics. That is, those Catholics whose formative religious experiences took place prior to the liberalizing Church council tend to be more receptive to an authoritative and traditional church than younger Catholics who are more interested in broader social issues. From this prior observation, the claim would be that my old Catholic effect is a social effect as opposed to one driven by Church doctrine. On the inadequacy of these kinds of formative years analyses with respect to religious contributions in general, see Zech (2000). With respect to this study specifically, I performed a separate analysis where very old (76+) individuals were excluded from the sample and redefined "old" as aged 66 to 75. If this Vatican II effect were really driving my results, I would expect to find substantially the same coefficients on the old Catholic variable for this group (whose members were in their 30s or 40s at the time of Vatican II and presumably had already passed through their formative years). Instead, while the t statistic for the coefficient on old the whole sample was close to that in my original analysis (-1.80), the t statistic for old*Catholic was substantially lower than in the original analysis (0.41). This result is amenable to interpretation in my framework to the extent that some individuals in this cohort might subjectively consider themselves "near death," leading to the positive coefficient, most will recognize that they are not near death in actuarial terms, so the

As an additional examination of the general argument laid out here, I examined whether near death Catholics contributed outside of their church at a relatively high rate. That is, is there something peculiar about this particular cohort of Catholics leading them to have a higher taste for contributions in general, unrelated to the salvation insurance claimed here? For the argument about the development and continuation of the faith plus works model of salvation to ring true, the Catholic Church must stand to gain the rewards of increased near death donations.

Using data from the same survey as used above, I looked at the same relationship using donations to non-religious organizations as the dependent variable. The dataset only includes these data as interval statistics, so I employed ordered probit analysis to determine if there was an old Catholic effect for non-church directed donations. As seen in Table 2, no such effect exists. The old Catholic effect is generally statistically insignificant and negative with respect to other donations. This suggests that the old Catholic effect for church donations is not simply an artifact of that group's general taste for making charitable contributions.

V. Conclusion

Economic analyses of the institutional aspects of faith and organized religion's decisions regarding official teachings is virtually non-existent, despite the fact that religion has always provided much of society's structure. By assuming that the creation of religious institutions and people's reactions to them are beyond the scope of economic analysis, we necessarily limit our ability to understand individuals' behavior and the effects of that behavior.

In an attempt to generate some discussion on these issues, this article presents a positive analysis of one of the defining doctrines of the Roman Catholic Church that led to enormous effects on western history. I argue that the faith plus works model of salvation serves as a mechanism to mitigate the free rider problem that is endemic to religious clubs. While available data suggest that this explanation is valid, much more analysis is needed in this and other topics in the economics of religion.

incentive does not bind, explaining the statistically insignificant relationship. Again, however, panel data would be necessary to separate these potential effects fully. With panel data on contributions, it would be possible to observe the evolution of individuals' contribution habits over their lifetimes.

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Table 1: OLS Regression Results for Contributions to Congregation
(t statistics below coefficients)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Assemblies of God	-1684 (-9.57)	-1660 (-9.47)	-1514 (-8.97)	-1338 (-7.81)	-1636 (-9.36)	-1647 (-9.57)	-1649 (-9.57)	-1690 (-9.64)
Southern Baptist	-2216 (-12.38)	-2198 (-12.31)	-2031 (-11.93)	-1839 (-10.58)	-2186 (-12.25)	-2202 (-12.55)	-2219 (-12.61)	-2222 (-12.43)
Catholic	-3808 (-20.61)	-3784 (-20.56)	-3617 (-20.53)	-3430 (-19.10)	-3720 (-20.53)	-3666 (-21.36)	-3740 (-20.66)	-3809 (-20.66)
Lutheran	-3064 (-18.53)	-3047 (-18.47)	-2872 (-18.51)	-2664 (-16.76)	-3035 (-18.41)	-3050 (-18.81)	-3069 (-18.85)	-3066 (-18.56)
Presbyterian	-3030 (-17.74)	-3013 (-17.68)	-2815 (-17.77)	-2596 (-15.89)	-3004 (-17.63)	-3013 (-17.97)	-3024 (-17.99)	-3030 (-17.77)
Congregation Size	0.25 (2.40)	0.26 (2.46)	0.28 (2.70)	0.28 (2.60)	0.07 (1.51)	--	0.11 (members) (1.90)	0.26 (2.44)
Size ²	-0.00 (-1.95)	-0.00 (-1.98)	-0.00 (-2.16)	-0.00 (-2.02)	--	--	-0.00 (members) (-1.92)	-0.00 (-2.08)
Length of Membership	76.45 (4.23)	76.76 (4.24)	70.55 (3.94)	131.18 (7.77)	77.44 (4.28)	80.31 (4.51)	79.38 (4.46)	76.09 (4.21)
Worship Attendance	425.07 (17.39)	425.41 (17.41)	427.03 (17.57)	455.87 (18.82)	426.21 (17.44)	430.55 (17.91)	429.53 (17.85)	425.16 (17.40)
Age	88.42 (8.45)	86.14 (8.32)	81.68 (7.99)	--	86.24 (8.33)	85.46 (8.38)	87.79 (8.41)	88.64 (8.48)
Education	78.94 (3.05)	78.51 (3.03)	--	51.80 (2.01)	81.27 (3.14)	83.10 (3.27)	79.96 (3.14)	80.12 (3.10)
Income	19.93 (10.38)	19.97 (10.39)	21.33 (11.55)	17.62 (9.25)	20.18 (10.52)	20.06 (10.64)	19.78 (10.47)	19.92 (10.38)
Income ²	0.05 (5.23)	0.05 (5.25)	0.05 (4.95)	0.07 (6.34)	0.05 (5.20)	0.05 (5.38)	0.06 (5.46)	0.05 (5.24)
Kids in Cong. School	146.53 (1.50)	--	--	--	--	--	--	147.45 (1.51)
Old	-278.23 (-2.74)	-272.64 (-2.69)	-264.67 (-2.64)	27.54 (0.29)	-275.57 (-2.71)	-277.41 (-2.78)	-276.37 (-2.76)	-278.17 (-2.74)
Old*Catholic	443.06 (2.13)	434.44 (2.09)	413.91 (2.01)	419.91 (2.01)	450.95 (2.17)	420.43 (2.09)	411.36 (2.05)	442.78 (2.13)
Race Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Adjusted R ²	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48

Table 1 (Continued): OLS Regression Results for Contributions to Congregation
(t statistics below coefficients)

	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Assemblies of God	637 (5.33)	667 (5.64)	453 (4.20)	1745 (20.02)	702 (5.98)	721 (6.23)	710 (6.12)	635 (5.36)
Southern Baptist	11 (0.08)	34 (0.27)	-192 (1.64)	1229 (13.71)	56 (0.44)	68 (0.55)	41 (0.33)	6 (0.05)
Catholic	-1738 (-12.35)	-1708 (-12.23)	-1555 (-11.89)	-507 (-4.70)	-1624 (-12.03)	-1549 (-12.44)	-1621 (-11.85)	-1736 (-12.39)
Lutheran	-1218 (-9.76)	-1196 (-9.63)	-1036 (-9.18)	15 (0.17)	-1176 (-9.49)	-1165 (-9.54)	-1193 (-9.70)	-1220 (-9.78)
Presbyterian	-1167 (-8.87)	-1146 (-8.74)	-962 (-8.23)	124 (1.37)	-1129 (-8.63)	-1111 (-8.62)	-1132 (-8.75)	-1165 (-8.88)
Congregation Size	0.28 (2.58)	0.28 (2.65)	0.31 (2.88)	0.31 (2.89)	0.06 (1.24)	--	0.11 (members) (1.95)	0.27 (2.59)
Size ²	-0.00 (-2.31)	-0.00 (-2.35)	-0.00 (-2.50)	-0.00 (-2.53)	--	--	-0.00 (members) (-2.18)	-0.00 (-2.37)
Asian	11.56 (0.04)	41.54 (0.14)	62.54 (0.20)	-39.52 (-0.13)	-142.65 (-0.48)	-71.33 (-0.25)	33.02 (0.11)	--
Black	134.78 (0.73)	150.55 (0.82)	166.40 (0.92)	102.96 (0.56)	133.77 (0.73)	89.29 (0.50)	125.79 (0.70)	--
Hispanic	-8.63 (-0.04)	-3.84 (-0.02)	-15.53 (-0.08)	-107.55 (-0.52)	-15.15 (-0.07)	-14.70 (-0.07)	39.74 (0.20)	--
American Indian	-405.84 (-1.29)	-403.77 (-1.29)	-434.00 (-1.41)	-440.59 (-1.39)	-419.94 (-1.34)	-391.00 (-1.26)	-374.87 (-1.21)	--
Bi-Racial	131.68 (0.42)	135.46 (0.43)	160.34 (0.51)	119.25 (0.37)	117.08 (0.37)	90.33 (0.29)	125.55 (0.40)	--
Age	131.48 (13.48)	128.98 (13.38)	123.25 (13.03)	--	129.32 (13.41)	129.38 (13.62)	129.53 (13.62)	131.52 (13.49)
Education	78.46 (3.00)	77.97 (2.98)	--	17.96 (0.69)	81.24 (3.11)	82.49 (3.22)	79.86 (3.10)	79.88 (3.06)
Income	21.27 (10.93)	21.30 (10.95)	22.69 (12.13)	17.51 (9.02)	21.56 (11.10)	21.39 (11.19)	21.09 (11.01)	21.22 (10.92)
Income ²	0.05 (4.40)	0.05 (4.42)	0.04 (4.10)	0.06 (6.11)	0.05 (4.35)	0.05 (4.52)	0.05 (4.61)	0.05 (4.42)
Kids in Cong. School	167.03 (1.69)	--	--	--	--	--	--	170.69 (1.73)
Old	-297.37 (-2.89)	-291.08 (-2.83)	-285.44 (-2.81)	224.14 (2.33)	-294.71 (-2.87)	-297.81 (-2.94)	-296.69 (-2.93)	-297.89 (-2.90)
Old*Catholic	445.88 (2.12)	435.81 (2.07)	415.80 (1.99)	399.32 (1.88)	454.97 (2.16)	419.47 (2.07)	410.92 (2.03)	446.93 (2.12)
Adjusted R ²	0.46	0.46	0.46	0.45	0.46	0.46	0.46	0.46

**Table 2:
Ordered Probit Results for Non-Church Giving**

	(17)	(18)	(19)	(20)	(21)
Assemblies of God	Dropped Collinearity	Dropped Collinearity	Dropped Collinearity	--	--
Southern Baptist	0.25 (6.66)	0.24 (6.47)	0.24 (6.53)	--	--
Catholic	0.31 (7.15)	0.35 (9.35)	0.35 (9.29)	--	--
Lutheran	0.43 (11.15)	0.42 (11.05)	0.42 (11.11)	--	--
Presbyterian	0.51 (13.00)	0.50 (12.86)	0.50 (12.84)	--	--
Congregation Size	0.00 (2.98)	--	--	--	--
Size ²	-0.00 (-3.22)	--	--	--	--
Length of Membership	0.01 (1.39)	0.01 (1.60)	0.01 (1.62)	0.04 (4.78)	--
Worship Attendance	-0.01 (-1.33)	-0.01 (-1.19)	-0.01 (-1.20)	-0.07 (-7.60)	-0.08 (-8.12)
Age	0.06 (13.13)	0.06 (13.40)	0.06 (13.40)	0.07 (15.18)	0.08 (18.60)
Education	0.21 (17.19)	0.21 (17.88)	0.21 (17.81)	0.24 (20.49)	0.24 (20.24)
Income	0.02 (21.07)	0.02 (21.35)	0.02 (21.42)	0.02 (21.81)	0.02 (21.96)
Income ²	-0.00 (-7.24)	-0.00 (-7.34)	-0.00 (-7.38)	-0.00 (-7.57)	-0.00 (-7.64)
Kids in Cong. School	-0.01 (-0.25)	--	--	--	--
Old	-0.18 (-3.95)	-0.18 (-3.92)	-0.17 (-3.88)	-0.15 (-3.33)	-0.15 (-3.42)
Old*Catholic	-0.02 (-0.24)	-0.05 (-0.54)	-0.05 (-0.55)	-0.06 (-0.68)	-0.04 (-0.50)
Race Effects	Yes	Yes	No	No	No
Pseudo R ²	0.0960	0.0956	0.0954	0.0898	0.0890
Likelihood Ratio	3064	3127	3121	2939	2918

Appendix: Description of the Data

Contributions: The dependent variable in this study is the survey response for the following question

During the last year, approximately how much money did your household contribute to each of the following? Write your best estimate in the boxes provided and fill in the corresponding circles underneath. Use only whole dollar amounts; do not use "cents." -- To your church, in regular giving (not including school tuition or contributions to a capital campaign). Include the value of material goods, as well as monetary gifts.

For the non-church giving, the dependent variable was the survey response to "During the last year, approximately how much money did your household contribute to nonreligious charities, community organizations, or social causes? (Include material goods.)" This response was coded in the following intervals:

1) \$0; 2) \$1-\$50; 3) \$50-\$100; 4) \$101-\$500; 5) \$501-\$1000; 6) \$1001-\$2000; and 7) \$2000+.

Age: Measured as an interval statistic, where the survey respondent was instructed to indicate to which of the following age groups he belongs:

1) Under 18; 2) 18-25; 3) 26-30; 4) 31-35; 5) 36-40; 6) 41-45; 7) 46-50; 8) 51-55; 9) 56-60; 10) 61-65; 11) 66-75; 12) 76 or older

Income: Measured as an interval statistic, where the survey respondent was asked the following question:

About how much income did your family or household receive last year from all sources, before taxes?

1) Less than \$10,000; 2) \$10,000-\$14,999; 3) \$15,000-\$19,999; 4) \$20,000-\$29,999; 5) \$30,000-\$39,999; 6) \$40,000-\$49,999; 7) \$50,000-\$59,999; 8) \$60,000-\$69,999; 9) \$70,000-\$79,999; 10) \$80,000-\$99,000; 11) \$100,000-\$149,999; 12) \$150,000 and above
Recoded as 1=10; 2=15; 3=20; 4=30; 5=40; 6=50; 7=60; 8=70; 9=80; 10=100; 11=150; 12=200

Education: The respondent was asked what his highest level of education was, relative to the following choices:

- 1) High school graduate or less; 2) Some college or technical training;
- 3) College graduate; 4) Graduate or professional degree

Religious School: The respondent was asked how many dependent children (under 18 years of age) in your household regularly attend religiously affiliated grammar school or high school (Catholic, Lutheran, etc.) five days a week?

- 1) 0; 2) 1; 3) 2; 4) 3; 5) 4 or more
- Recoded as 1 if respondent indicated any household children attended.

Worship Attendance: The respondent was asked how often do you attend worship services at your church?

- 1) Never; 2) A few times a year; 3) About once a month;
- 4) Two or three times a month; 5) About once a week;
- 6) More than once a week

Length of Membership: The respondent was asked how long have you been attending worship services at your congregation?

- 1) Less than 1 year; 2) 1-2 years; 3) 3-5 years; 4) 6-10 years;
- 5) 11-20 years; 6) Over 20 years

Congregation Size: The average weekly attendance at the church (provided by congregation officials). Alternately, in some specifications, official congregation membership was used.

Race: Self-reported as one of the following groups (in the regressions, white is the omitted group):

- 1) Asian or Pacific Islander; 2) Black or African American; 3) Hispanic;
- 4) White; 5) American Indian; 6) Biracial or Bicultural

Old: Dummy variable representing whether or not the respondent indicated he was 76 years old or older (1147 members of the sample).

Old*Catholic: Dummy variable representing whether or not the respondent indicated he was 76 years old or older AND Roman Catholic (235 members of the sample).