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Salvation as a selective incentive

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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. Specifically, I show that Catholics contribute significantly more to their churches as they approach death than do members of Protestant denominations. More generally, this paper suggests that church doctrines influence behavioral incentives, and religious leaders may be able to capitalize on these behavioral effects for the benefit of their church.

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1. 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, 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.

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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 fraud.

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 indulgences for the living and on behalf of the dead (*Catechism of the Catholic Church*, section 1471), while the Protestant Churches have not abandoned their focus on faith alone.

Economic theory can shed light on the practical consequences of the Catholic Church’s continued acceptance of the faith plus works model of salvation. Further, it may help explain the institutional development of religious doctrine to the extent that church leaders recognize the incentives produced by doctrine.

This analysis does not supplant the role of tradition and theology; rather it offers a complementary view of the interplay among institutions, ideology, and incentives. Specifically, a club-theoretic perspective suggests that a works-oriented salvation doctrine provides selective incentives (Olson, 1965) that mitigate the free rider problem that arises from the Catholic Church’s large size and inclusive nature.

Section 2 of this paper looks at the well-developed notion of religion as a club good. Section 3 discusses how the faith plus works model of salvation can mitigate the free rider problem in theory and in practice. Section 4 investigates the historical and theological development of the doctrine in an attempt to discern whether the rule developed for extra-theological reasons. Section 5 examines some modern data on church contributions to determine whether or not the Catholic model of salvation effectively limits free riding. Section 6 concludes.

2. Religious clubs

The economic analysis of clubs dates at least to Buchanan (1965) and Olson (1965).¹ The explicit application of these models to religious institutions is not well developed in the economics literature.² While much of the pure club material focuses on the optimal size of a club, Iannaccone (1992) focuses on a different problem in the religious context. 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.

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

¹ 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.

² 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.

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 of similar issues in mass religions for which this kind of behavioral monitoring may not be practical. Even if practical, mass religions or those with imperial hopes may avoid such rigorous attempts at screening of potential congregants.

Seemingly, a number of peripheral characteristics of mass religions serve a selective incentive function. For example, in Jewish congregations, dues paying members of a synagogue often receive preference in seating during high holy days when demand generally exceeds supply. In the Mormon religion, only "worthy" adherents are permitted to worship in the religion's temples. The worthiness determination is made by the local bishop and includes an inquiry into whether the individual fully tithes.³

However, 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.⁴ This type of institutional examination can provide insights into how religions develop, as well as how people react to that development.

3. 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.

As described above, religions exhibit the characteristics of club goods. As with any club good, it would be possible 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 might not represent a universally applicable profit-maximizing scheme for religious groups though. For example, some might view the explicit mixing of financial matters with spiritual matters as distasteful. This could lead to the alienation of some potential customers.

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

³ See <http://www.lds.org/temples/purpose/holy/0,11707,2028-1,00.html>.

⁴ 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.

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, attendance at social functions, and participation in non-worship services. In relatively small congregations, internal social pressures and benefits serve as selective incentives.⁵ Such mechanisms might not be universally feasible. Also, from the point of view of the religion as a whole, there might be reluctance to rely on these measures to the extent that they produce inter-religion competition at the congregation level, 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 (see, for example Hoge, Zech, McNamara, and Donohue, 1996), central elements of the religion's creeds have been ignored in this framework. The primary focus of the economic analysis of religion is on religious market structure.⁶ Rational choice studies of religion almost exclusively focus on non-doctrinal issues. 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 theology to public choice analysis. 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.

As discussed in Section 3 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 raises the question why, in the wake of such a non-linear development, the Catholic 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

⁵ 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.

⁶ Ekelund, Hebert, Tollison, and Anderson (1996) present an industrial organization analysis of the medieval Catholic Church, where they touch on the possibility that the church's hierarchy purposefully organized the church to maximize its profit. That work and subsequently Ekelund, Hebert, and Tollison (2002) touch on religious doctrine but it is not a central focus.

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, 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 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. 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 earlier centuries, 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.⁷

4. The development of the Catholic model of salvation

A full analysis of the historical development of the justification doctrine of salvation would fill many volumes, but I will attempt to sketch that history from the perspective of institutional economics. In this approach, churches are like firms, seeking to maximize some objective function, and their doctrinal developments are a consequence of trying to carry out that maximization.

In brief, the history suggests that the Catholic doctrine of salvation developed over time; the church's ultimate position was neither a purely exogenous initial point nor the necessary outcome of the church's biblical foundation. During the two millenia of the church's existence, theologians and church leaders devoted substantial effort to developing and modifying the concept of salvation, though it was not cemented as a "core" teaching until the reformation.⁸

⁷ 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 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.

⁸ For a discussion of the role of core teachings, see [Finke \(2004\)](#). Essentially, core teachings serve to preserve the religious capital accrued by existing members, binding them to the church.

4.1. Augustine

“For the first 350 years of the history of the church her teaching on justification was inchoate and ill-defined (McGrath, 1998, p. 23).”⁹ As with many areas of Christian doctrine, Augustine of Hippo (354–430 A.D.) exerted an enormous amount of influence on the development of a doctrine of justification. Among Augustine’s most important contributions to Christian thought is the concept of grace, which Augustine developed in his attack on 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, chapter 2). 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.

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. The church appeared to reject the notion that man could earn his salvation (Ozment, 1980, chapter 2). 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 widespread community of believers (Hall, 1991, chapter 22).

4.2. *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 (1100–1160) suggested that the love man exhibits for God and his fellow

⁹ Although the church’s position was ill-defined, there were a number of early theologians on both sides of the faith alone (e.g. a strict reading of St. Paul’s writings) versus faith plus works (e.g. Ambrosiaster and Tertullian) divide.

man is actually the Divine working internally without man's aid or volition. To this Thomas Aquinas (1225–1274) 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, chapter 13).

Much of the debate on these matters during this period involved either an attack on or defense of this Thomist position. Duns Scotus (1270–1308) rejected the position, claiming that the Divine salvation could not be made contingent on human acts or habits of grace. Peter Auriole (1280–1322) 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 (1280–1349) took the 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 (1300–1358), 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, chapter 2). 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.

4.3. *Luther's criticism*¹⁰

Martin Luther (1483–1546) 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, 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, p. 197). 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. For example, while many of Luther's theses were declared heretical, no writing by Scotus ever received a similar judgment. One might speculate that the more concrete application¹¹ of the Lutheran justification model as a criticism of the

¹⁰ 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.

¹¹ Luther's "sermon on indulgences and grace" was delivered in the popular vernacular as opposed to being issued in an academic format.

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.¹² Taking special notice of Luther, while having largely ignored the figures who came before him, implies that Rome's reaction was not solely based on theological concerns.

4.4. *The Council of Trent*

The major church response to Luther's teachings was issued at the Council of Trent, where good works, mediated by the church and its sacraments, were declared to be a necessary precondition of justification.¹³ During the proceedings on justification, the most cited theologians were Augustine and Aquinas (McGrath, 1998, p. 251), and by upholding the necessity of the sacraments, the church clearly rejected Luther's individual-based model of salvation.

5. Does doctrine affect behavior?

As developed in Section 2 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 might not necessarily constitute a good work will be inclined to use his church as a kind of good works clearing house. For example, a religious person may not want to give money to a homeless man because he may use it to secure drugs; a Catholic may hesitate to donate money to a hospital because it might provide abortions and may be unwilling to support a school that encourages students to use contraception, etc. Each of these institutional arrangements will tend to direct the benefits coming from a Catholic's good works disproportionately to his church.¹⁴

While the former arrangement (in which a Catholic needs agents of his church to mediate forgiveness for sins) would not apply to members of Protestant churches, the latter, good works clearing house function, obviously could. A Protestant, undertaking good works out of a natural inclination toward charity rather than out of a desire to get to heaven, might 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 as a way to reduce information costs.

¹² Johann Tetzel saw Luther's 95 theses (1517) as a covert attack on the whole penitential system of the church.

¹³ The Council of Trent, sixth session, chapter XVI (January 13, 1547), made available by the Hanover historical texts project (<http://www.history.hanover.edu/early/trent.htm>).

¹⁴ Interestingly, as suggested by the work of Finke (2004), complete faith in the church's underlying teachings may not be necessary for the teachings to affect an individual's behavior. Instead, if access to church-based social capital is conditioned on (at least) nominal adherence to beliefs, doctrine will affect behavior. See Kuran (1995) for a discussion of how similar social pressures can induce preference falsification in which individuals' external activities do not match underlying beliefs and preferences.

From an empirical standpoint, the difficulty lies in distinguishing those works done out of a sheer preference to undertake charity from those meant as salvation insurance.

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 perform good works for insurance purposes. 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 imminent, 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.

5.1. *The data*

I use church contributions data¹⁵ 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 denominations¹⁶ and nine geographic locations, was conducted regarding their contribution habits, as well as personal information about their finances and characteristics. Summary statistics of all data used in this analysis are presented in [Table 1](#) for Catholics and non-Catholics separately. For further reference, a correlation matrix is provided in [Table 2](#).

In previous analyses of these data, it was determined that the significant determinants of church giving included family income,¹⁷ age, level of involvement in the church, and denomination ([Hoge et al., 1996](#)). The descriptive statistics presented in [Table 3](#) (i.e. contributions by denomination) clearly show this denomination heterogeneity, with the denomination exhibiting the highest average contribution (Assemblies of God) giving more than three times the denomination with the lowest average contribution (Roman Catholic).

The average contribution numbers in [Table 3](#) raise an interesting question related to the thesis of this paper. Namely, if Catholic salvation is preconditioned on good works, of which contributing money to a church is one, why do Catholics give so much less than members of other denominations on average? Looking at the Catholic/non-Catholic data breakdown presented in [Table 1](#), it is clear that the Catholics appear similar to other Christians in all other regards except the size of their denomination (Catholic Church membership averages 2256, while non-Catholic Church membership in the sample is 361) and their use of religious schools (20% versus 8%). Others have shown (e.g. [Zaleski & Zech, 1992](#)) that individuals

¹⁵ 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.

¹⁶ 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.

¹⁷ [Iannaccone \(1997\)](#) suggests a quadratic relationship between income and contributions.

Table 1
Descriptive statistics

Variable	Description	Catholic mean	Non-Catholic mean
Church contributions	Amount of money donated to church during last year	837.39	1849.04
Non-religious contributions	Amount of money donated to non-religious charities during last year (recorded as categorical variable with values 1–7)	3.05	3.03
Old	Indicator = 1 if individual reported age as being greater than 75	0.11	0.11
Old and Catholic	Indicator = 1 if individual reported age as being greater than 75 and denomination as Roman Catholic	0.11	0.00
Denomination attendance	Church reported average weekly attendance at services	1098.75	210.02
Denomination membership	Church reported membership	2255.80	360.74
Length of attendance	Number of years individual has attended services at current denomination (recorded as categorical variable with values 1–6)	4.89	4.52
Frequency of attendance	Frequency with which individual attends services at denomination (recorded as categorical variable with values 1–6)	4.86	4.83
Age	Individual's age (recorded as categorical variable with values 1–12)	7.99	7.83
Education	Highest level of education attained by individual (recorded as interval variable with values 1–4)	2.19	2.19
Income	Household annual income in \$1000s (recorded as interval variable with values 1–12; transformed by author to equal midpoint of interval)	44.29	44.28
Use denomination school	Indicator = 1 if household has child enrolled in denomination's school	0.20	0.08
Male	Indicator = 1 if individual is male	0.39	0.39

in larger churches tend to contribute less, all things equal. Given that the Catholic Church is generally more centrally controlled than the other denominations considered here, larger Catholic parishes may be necessary to maintain a strong hierarchy, but this control appears to come at the cost of lower average contributions. Regarding the use of church schools, perhaps Catholics view their tuition payments as church contributions, leading to an offset in church giving.

While this dataset represents the best information available on church giving, 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 is greater for Catholics relative to the other Christian denominations would be very persuasive with respect to the argu-

Table 2
Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13
Church contributions (1)	1.00												
Other contributions (2)	0.18	1.00											
Old (3)	−0.05	−0.07	1.00										
Old Catholic (4)	−0.05	−0.05	0.43	1.00									
Attendance (5)	−0.05	0.05	−0.04	0.13	1.00								
Membership (6)	−0.08	0.06	−0.01*	0.17	0.88	1.00							
Length attend (7)	−0.03	0.05	0.19	0.10	0.01*	0.06	1.00						
Frequency of attendance (8)	0.24	−0.09	0.02*	0.03	0.01*	−0.03	−0.05	1.00					
Age (9)	0.01*	0.02*	0.49	0.21	−0.03	0.01*	0.44	0.08	1.00				
Education (10)	0.11	0.33	−0.15	−0.10	0.08	0.08	−0.15	−0.07	−0.25	1.00			
Income (11)	0.36	0.45	−0.21	−0.11	0.08	0.08	−0.08	−0.06	−0.22	0.39	1.00		
Use school (12)	0.03	0.01*	−0.06	−0.01*	0.10	0.09	−0.06	0.01*	−0.17	0.05	0.08	1.00	
Male (13)	0.09	0.10	−0.04	−0.00*	0.02*	0.01*	−0.04	0.01*	−0.01*	0.13	0.15	0.02	1.00

Note: All correlations are statistically significant at the 1% level except those that are marked with *.

Table 3
Contributions by denomination

Religion	Mean	S.D.
Assemblies of God	2751.67	3340.74
Southern Baptist	2308.62	3144.81
Roman Catholic	837.39	1721.42
Lutheran	1177.05	1432.97
Presbyterian	1495.03	2506.68

ment offered here. However, because no high quality panel data are available, the empirical analysis that follows is merely suggestive of the argument's validity.

5.2. *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 imminent, 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 is the case that older people naturally give more to their church than do younger people due to some normal increase in religiosity,¹⁸ 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:

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

where X_i represents personal characteristics of the individual that might influence his giving decisions (including a linear age effect) and where Z_c represents characteristics of the individual's specific congregation that influence his giving decisions. 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.

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

¹⁸ An alternate explanation could involve an increase in the taste for the social benefits provided by religious clubs as one ages.

chooses.¹⁹ 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 76²⁰ or above.²¹ This near-death “shift” in giving is in addition to the natural trend that occurs with age. The interaction term (old and Catholic) is meant to examine if, even after controlling for the effect of being in this near-death category generally and the natural age-induced trend in giving, there is still some differential effect for Catholics falling in the near-death group. Thus, if the coefficient of 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 4, do not reveal any surprises.²² As was to be expected, the age, income, and education level of the individual have statistically significantly positive effect on contributions. Also, the length of an individual’s attendance with his denomination and his frequency of attendance are statistically significant positive indicators of contributions, as was being male. 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. 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 levels, the marginal member decreases the average member’s contributions. This is consistent with the participatory crowding model exhibiting congestibility.²³

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. Conditional on the other variables, Catholics in the near-death category give between an extra \$433 and \$478. This represents a percentage increase of between 52% and 58% over the average Catholic contribution level. Thus, the differential effect of being old is greater for Catholics than it is for Protestants.

The specification including old and old interacted with Catholic represents the proper test of the hypothesis. That is, there might 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.

¹⁹ Hoge et al. (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).

²⁰ 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.

²¹ 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.”

²² The results are robust to a wide range of covariates available in the dataset.

²³ 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.

Table 4
OLS analysis of denomination contributions (S.E. next to coefficients)

Old	−294.86 (105.64)	−296.62 (104.06)	−295.39 (105.32)	−296.92 (103.75)	−321.63 (107.12)	−324.41 (105.57)
Old and Catholic	462.15 (219.69)	433.19 (211.44)	464.10 (219.30)	434.80 (211.03)	477.76 (222.49)	448.50 (231.76)
Denomination attendance	0.27 (0.11)	–	0.27 (0.11)	–	0.29 (0.11)	–
Denomination attendance ²	−0.58 (0.29)	–	−0.60 (0.28)	–	−0.66 (0.29)	–
Denomination membership	–	0.10 (0.06)	–	0.11 (0.06)	–	0.11 (0.06)
Denomination membership ²	–	−0.15 (0.08)	–	−0.15 (0.08)	–	−0.17 (0.08)
Length of attendance	74.07 (18.42)	76.81 (18.14)	73.83 (18.35)	76.65 (18.08)	71.97 (18.69)	74.50 (18.42)
Frequency of attendance	430.21 (24.93)	434.40 (24.53)	429.77 (24.86)	433.95 (24.46)	–	–
Age	87.03 (10.71)	86.72 (10.56)	86.55 (10.67)	86.16 (10.52)	115.02 (10.75)	115.04 (10.60)
Education	72.26 (26.60)	74.17 (26.17)	73.99 (26.46)	75.59 (26.04)	84.32 (27.00)	86.89 (26.57)
Income	19.61 (1.98)	19.42 (1.95)	19.42 (1.97)	19.24 (1.94)	20.83 (2.01)	20.66 (1.98)
Income ²	0.05 (0.01)	0.06 (0.01)	0.05 (0.01)	0.06 (0.01)	0.05 (0.01)	0.05 (0.01)
Use denomination school	93.62 (51.06)	89.78 (50.55)	95.75 (50.82)	91.59 (50.31)	95.67 (51.85)	93.15 (51.36)
Male	124.19 (48.93)	124.32 (48.18)	122.21 (48.79)	122.46 (48.05)	114.45 (49.64)	113.68 (48.90)
AOG constant	−1768.63	−1765.89	−1730.58	−1716.34	445.57	475.52
SB constant	−2270.68	−2300.10	−2227.68	−2247.66	−206.10	−212.53
RC constant	−3870.91	−3831.85	−3826.18	−3777.69	−2004.77	−1925.38
ELCA constant	−2119.06	−3149.89	−3071.47	−3092.98	−1467.95	−1477.60
Presbyterian constant	−3096.02	−3116.17	−3046.93	−3057.88	−1422.02	−1423.75
Race effects	Yes	Yes	No	No	Yes	Yes
Observations	9025	9229	9053	9257	9040	9245
Adjusted R ²	0.26	0.26	0.26	0.26	0.24	0.24

Note: The dependent variable is the dollar value of donations made to the individual's denomination. The coefficients on denomination attendance² and denomination membership² have been scaled (multiplied by 10⁴) for presentation. All denomination constants are statistically significant at 1% level.

Table 5
 Ordered probit analysis of non-religious contributions (S.E. next to coefficients)

Old	−0.16 (0.05)	−0.16 (0.05)	−0.16 (0.05)	−0.15 (0.05)	−0.16 (0.05)	−0.15 (0.05)
Old and Catholic	−0.07 (0.09)	−0.11 (0.09)	−0.07 (0.09)	−0.11 (0.09)	−0.08 (0.09)	−0.11 (0.09)
Race effects	Yes	Yes	No	No	Yes	Yes
Denomination effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9513	9723	9546	9756	9583	9795
Log likelihood ratio	2953.51 ($p=0.00$)	3041.12 ($p=0.00$)	2954.48 ($p=0.00$)	3042.48 ($p=0.00$)	2979.36 ($p=0.00$)	3065.97 ($p=0.00$)
Pseudo R^2	0.10	0.10	0.10	0.10	0.10	0.10

Note: The dependent variable is a categorical variable taking values 1–7 representing the dollar amount of donations made to non-religious charities. All specifications include the covariates used for the regressions in Table 4. Coefficients for those variables are available by request.

Some have argued that the internal split between pre- and post-Vatican Council II Catholics might be a driving force in observed 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. The data do not allow one to rule out this hypothesis. To do that in this framework, it would be necessary to examine data that includes a near-death cohort that did not experience its formative years in the pre-Vatican II period.²⁴

Interestingly, the average lower giving of Catholics is apparent even in a multivariate framework. As indicated by the denomination constants presented in [Table 4](#), Catholics contribute less to their church even after controlling for relevant differences across denominations. Although the large parish hypothesis raised above exists, it does not fully explain lower Catholic giving. It would appear that Catholicism as a religion relies on relatively meagre donations from a very large number of members in addition to the salvation induced increase in giving relative to other Christian religions.

As an additional examination of the general argument laid out here, I examine whether near-death Catholics contribute 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 look 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 employ ordered probit analysis to determine if there was an old Catholic effect for non-church directed donations. As seen in [Table 5](#), 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. Further, though it is not possible to tell from the data directly (since the church contributions are measured in levels while the non-church contributions are measured categorically), these results imply that old Catholics give a greater share of their total contributions to their church as would be suggested by the salvation as a selective incentive hypothesis.

6. 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

²⁴ On the inadequacy of formative years analyses with respect to religious contributions in general (see Zech, 2000).

institutions and people's reactions to them are beyond the scope of economic analysis, scholars necessarily limit the 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. Roman Catholic doctrine puts more emphasis than Protestant doctrine on good works, including donations to the church, and on deathbed repentance as opposed to religiosity in middle age. Regression results using data on church contributions show that practice seems to follow theology. That is, compared to other Christian denominations, older Catholics increase their contributions substantially as they approach death.

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References

- Buchanan, J. (1965). An economic theory of clubs. *Economica*, 32(125), 1–14.
- Catechism of the Catholic Church, 2000.
- Ekelund, R., Hebert, R., Tollison, R., & Anderson, G. (1996). *Sacred trust: The medieval church as an economic firm*. New York: Oxford University Press.
- Ekelund, R., Hebert, R., & Tollison, R. (2002). An economic analysis of the Protestant reformation. *The Journal of Political Economy*, 110(3), 646–671.
- Finke, R. (2004). Innovative returns to tradition: Using core teachings as the foundation for innovative accommodation. *Journal for the Scientific Study of Religion*, 43(1), 19–34.
- Hall, S. (1991). *Doctrine and practice in the early church*. Grand Rapids, MI: Eerdmans Publishing.
- Hoge, D., Zech, C., McNamara, P., & Donohue, M. (1996). *Money matters: Personal giving in american churches*. Louisville, KY: Westminster John Knox Press.
- Iannaccone, L. (1988). A formal model of Church and sect. *American Journal of Sociology*, 94, S241–S268.
- Iannaccone, L. (1992). Sacrifice and stigma: Reducing free-riding in cults, communes, and other collectives. *The Journal of Political Economy*, 100(2), 271–291.
- Iannaccone, L. (1994). Why strict churches are strong. *American Journal of Sociology*, 99(5), 1180–1211.
- Iannaccone, L. (1997). Skewness explained: A rational choice model of religious giving. *Journal for the Scientific Study of Religion*, 36(2), 141–157.
- Knight, F. (1924). Some fallacies in the interpretation of social cost. *Quarterly Journal of Economics*, 38(4), 582–606.
- Kuran, T. (1995). *Private truths, public lies: The social consequences of preference falsification*. Cambridge, MA: Harvard University Press.
- Maurer, A. (1962). *Medieval philosophy*. Toronto: Pontifical Institute of Medieval Studies.
- McGrath, A. (1998). *Iustitia dei: A history of the Christian doctrine of justification*. New York: Cambridge University Press.

- Olson, M. (1965). *The logic of collective action: Public goods and the theory of groups*. Cambridge, MA: Harvard University Press.
- Olson, M., & Zeckhauser, R. (1966). An economic theory of alliances. *The Review of Economics and Statistics*, 48(3), 266–279.
- Ozment, S. (1980). *The age of reform 1250–1550: An intellectual and religious history of late medieval and reformation Europe*. New Haven, CT: Yale University Press.
- Pigou, A. (1920). *The economics of welfare*. London: Macmillan.
- Tiebout, C. (1956). A pure theory of local expenditures. *The Journal of Political Economy*, 64(5), 416–424.
- Zaleski, P., & Zech, C. (1992). Determinants of contributions to religious organizations: Free riding and other factors. *American Journal of Economics and Sociology*, 51(4), 459–472.
- Zaleski, P., & Zech, C. (1995). The optimal size of a religious congregation: An economic theory of club analysis. *American Journal of Economics and Sociology*, 54(4), 439–453.
- Zech, C. (2000). Generational differences in the determinants of religious giving. *Review of Religious Research*, 41(4), 545–559.