8-2010

The Temple Recommend: A Solution to the Free-Rider Problem

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THE TEMPLE RECOMMEND: A SOLUTION TO THE FREE-RIDER PROBLEM

by

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Thesis submitted in partial fulfillment
of the requirements for the degree

of

DEPARTMENTAL HONORS

in

Economics
in the Department of Economics and Finance

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Summer 2010

ABSTRACT

Temple worship and geographical boundaries are unique features of the Church of Jesus Christ of Latter-day Saints (LDS Church). Our research uses economic theory to understand how the organizational benefits of the temple recommend system and the geographical ward boundaries may solve the market failures associated with religious organizations. These features of the LDS Church will be used to create a framework for understanding how the church limits free-riding and sub-optimal participation, which would result in increased efficiency and production of large religious benefits. Because the market failures faced by the church are the same as those faced by other religious groups and similar to those faced by clubs, this research provides insights into possible solutions for groups besides the LDS church.

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I. INTRODUCTION

Many of us are quick to make the connection between economics and the economy, but those unfamiliar with the discipline are often unaware that microeconomics, in its most basic form, is a method of understanding how individuals and other entities decide to use scarce resources. Economics provides mathematical models and avenues for empirical research. Thus, it provides a paradigm to analyze purchasing behavior in consumers, production in businesses, and trading amongst nations. Additionally, since individuals are forced to make decisions many different settings, economics provides, as Iannaccone (1994) says, a "new paradigm" for analysis in other fields. Economics has thus expanded its domain and made profound insights in political science, health, criminology, and sociology, as well as in other disciplines.

This being said, most of us would think economics to be impractical in matters of worship and belief. After all, spiritual matters are too intangible to be studied with the mathematical models used in economics. However, worship does involve time and effort (scarce resources) in exchange for blessings (spiritual benefits), and religious congregations require organization. It is these features, and others, that allow us to examine religion with economic theory.

Economics has been influential in helping researchers understand the behavior of individuals within a religion, the organization of religious groups, and even so-called religious "markets". A few significant studies are mentioned briefly here. In 1975, Azzi and Ehrenburg (1975) used a model of "afterlife consumption" to explain the rationality behind religious behavior. Club theory has been used to show how religious organizations produce religious "capital." A largely ignored chapter in Adam Smith's *Wealth of Nations* (1776) points out that if individual denominations function as religious firms (or clubs), then they collectively constitute

a religious "market" and can be analyzed as such. Clearly, economics has much to say in spiritual matters.

The analysis in this paper builds off of the work that has been done using club theory, particularly by Lawrence Iannaccone (1992) and Michael McBride (2007). Iannaccone (1992 and 1994) has written several papers showing that the relative strictness of fundamentalist-type churches is what has allowed them to grow at a rate significantly higher than their less strict competitors. He proposes that this strictness limits the inefficiency caused by the free-rider problem inherent in religious organizations.

McBride (2007) focuses on the relatively strict LDS (or Mormon) church in his analysis. He too proposes that the church's success has been the result of solving the free-rider problem. However, he suggests that it is by forming a type of "menu" of goods within the church that the Mormons have become more efficient than otherwise.

After providing a brief background of the LDS church and explaining the free-rider problem faced by religious organizations, we will use the temple recommend and geographic boundaries of the LDS church to develop a framework for analyzing its efficiency, perhaps accounting for its strength and possibly its relatively high growth rates.

II. BRIEF BACKGROUND OF THE LDS CHURCH

The Church of Jesus Christ of Latter-day Saints (also known as the Mormon Church) was founded in 1830 by Joseph Smith Jr. At the time of its formal organization, it had only six members, meeting the minimum requirement of the state of New York, where it was formed. A relatively small membership gathered in the Eastern United States before settling in the Great Basin in Utah in 1847. From that small membership, the church has seen rapid growth

worldwide. In 1947, membership reached 1 million. It reached 2 million 16 years later, in 1963.

In 1971, there were 3 million members worldwide. This rapid growth has continued until now.

Current membership is reported to be approximately 13.8 million.

Although it is a Christian church, several beliefs and practices distinguish the LDS

church from other Christian denominations and contribute to its "strictness". The Word of

Wisdom prohibits the use of tobacco, alcohol, tea, and coffee. The Law of Tithing requires that

10% of members' incomes be donated to the church. The Law of Chastity prohibits sexual

relationships outside of a legally recognized marriage.

In addition to these beliefs, membership in the church demands a significant amount of

members' time and effort. Sunday services, meetings, and other church programs demand a

rather substantial time commitment. In the Pew Forum Religious Landscape Survey, 75% of

Mormons in the United States claim to attend church meetings once per week or more, a

percentage only surpassed by the Jehovah Witnesses. Eighty-two percent of Mormons claim to

pray daily, again only surpassed by Jehovah Witnesses. Of course, adherence to all these

practices is strictly voluntary, but indirect enforcement exists; a fact that we will analyze later.

In sociology, the LDS church is generally classified as a *sect*. The classification system

classifies an organization as a church or a sect, according to the stringency of the group's

demands. Those groups whose stringency places their members at odds with the prevailing

culture are classified as sects. As stated in the introduction, this "strictness" has been used to

explain the relative success and growth of sects versus churches.

To begin our analysis of how the LDS church sufficiently solves the free-rider problem,

we must first understand what the problem is and why it exists.

III. THE FREE-RIDER PROBLEM IN CLUBS

Adam Smith, the Scottish philosopher often regarded as the father of economics, wrote in his famous book, *Inquiry into the Wealth of Nations* (1776):

> "Every individual endeavors to employ his capital so that its produce
>
> may be of greatest value. He generally neither intends to promote the
>
> public interest, nor knows how much he is promoting it. He intends
>
> only his own security, only his own gain. And he is in this led by an
>
> invisible hand to promote an end, which has no part of his intention.
>
> By pursuing his own interest, he frequently promotes that of society
>
> more effectually that when he really intends to promote it."

This quote captures one of the fundamental ideas of economic analysis. The simple idea is what allows decision making to be analyzed at the individual, corporate, and national levels. We simply make the assumption that individuals and other entities decide to use their resources in the way that maximizes their return. It is important to realize what Adam Smith means when he says that the individual "intends only his own security, only his own gain." What he means is that the individual assesses the *individual* costs and *individual* benefits associated with each option.

For an example of this type of decision-making behavior, take Jim, a hypothetical university student. When Jim decides to drive his car to school, rather than ride his bike, he is comparing costs and benefits to him personally that result from this decision. If he decides that the cost-benefit ratio for driving (e.g. gas money vs. speed and convenience) is more favorable than the ratio for biking (energy, time vs. inexpensiveness), he will drive his car. Economic theory suggests that, as Adam Smith pointed out earlier, individual rational behavior as described

above results in the efficient allocation of resources. Whether or not this efficiency is "optimal"

depends on what the reader believes is optimal. For our analysis, we will assume that efficiency

is beneficial and thus desired by the groups under examination. However, it should be noted that

it is possible for groups to sacrifice efficiency to promote other causes.

Market failures exist when external costs and benefits exist. In our example, Jim does

not take into account the cost (external to him) imposed on others by the pollution his car

generates. This is an example of an *external cost*. When external costs are present, individual

choice does not lead to socially optimum (efficient) outcomes. For example, it may be rational

for Jim to drive his car to school (individual benefits exceed individual costs) but this result may

not be socially efficient since the social costs associated with this decision may exceed social

benefits. Goods associated with external costs (in the absence of restraints) are produced in a

higher quantity than would be socially optimal.

External benefits also cause non-optimal outcomes. University-level education is an

excellent example of a good with external benefits. Not only does the education provide direct

benefits for the student, but it also creates more informed voters, statistically safer communities,

and more productive citizens. Goods like this are typically produced less than would be socially

optimal (a fact which will be shown later). In the education example, the government intervenes

with grants, low interest on student loans, and other incentives in order to solve for this market

failure. Here, we will show how external benefits cause this inefficiency.

Take an individual's decision to obtain more education. **Figure 1** employs a simple cost- benefit analysis to illustrate the effect of a positive externality associated with an individual's decision to obtain education. A rational individual will choose to obtain education until he/she reaches the point where the marginal *private* cost (MPC) of obtaining more education equals marginal *private*

Figure 1: Marginal Cost/Benefit Analysis of an individual obtaining education.
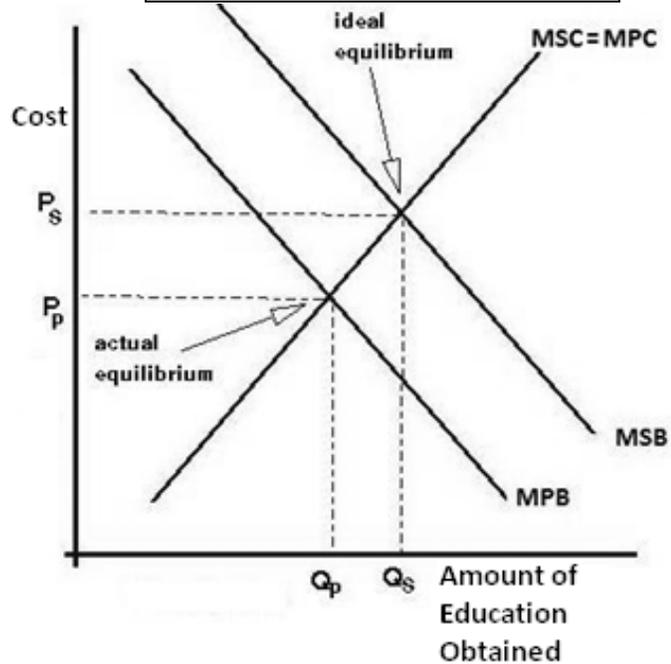
benefit (MPB). Because of its public good nature, education yields benefits external to the individual; i.e., marginal social benefits (MSB) are greater than marginal private benefit. Because individual rational behavior is based on personal benefits and not on social benefits, the individual obtains the amount of education marked as Q_P even though Q_S is the socially optimal level.

How do external benefits affect religious groups? We must first understand worship as the production of spiritual, social, and other benefits. For convenience, we will refer to such benefits as *religious benefits*. The inputs of this production include the individual's time, enthusiasm, adherence to certain practices, and other aspects of worship.

We also must view the religious group as a club, in the economic sense of the term[1]. Religious benefits are therefore defined as *club goods*. One characteristic of a club is that its members have an incentive to *free-ride*. An agent is said to be free-riding when it does not pay

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[1] For an explanation of clubs, non-rivalrous goods, and excludability, see Appendix 1.

its share of the cost of producing a club good. Free-riding is the result of the external benefits associated with club goods.

We will use game-theoretic analysis to show how external benefits cause free-riding in religious organizations, and therefore, clubs in general. Assume that we have a religious group with only two members, *Member A* and *Member B*. For the sake of simplicity, we will assume each member has only two options in the church, they can either contribute fully or not at all (shirk). In terms of dollars, the efforts of contributing cost each member $3, and, since it requires no effort, let shirking cost nothing. When both members contribute fully, their collective efforts produce six dollars worth of non-rivalrous benefits[2] (the more contributing members the better). However, if only one of them contributes while the other one shirks, only 4 dollars worth of benefits are produced (the quality of the church services decrease as few members contribute). If neither of them contributes, two dollars of benefits are produced on account of the members just showing up (social benefits, etc). Since the benefits are non-excludable within the club, both enjoy full benefits whether they contribute or shirk. That is to say, even if only one of the members contributes fully, the shirking member still enjoys the full four dollars at no cost.

Figure 2 summarizes the different outcomes in terms of net benefits (benefits minus cost). The ordered pairs each represent Member A's payoff first, followed by Member B's. For example, when Member B shirks while Member A contributes, they collectively produce four dollars. Member A's payoff is one dollar ($4 – $3). Member B's is four dollars ($4 – $0). The payoffs have been calculated for each of the four different situations.

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[2] To be a non-rivalrous good, consumption of the good by one individual does not decrease the amount of the good available to others. See Appendix 1.

Figure 2: Religious Group Game

Member B

	Contribute	Shirk
Contribute	(3, 3)	(1, 4)
Shirk	(4, 1)	(2, 2)*

Member A

The production numbers we assumed above make sense once we have calculated the payoffs. They lead to an appropriate ranking of each outcome. Member A's best outcome (4) is if he shirks and Member B contributes. The next-best outcome (3) for Member A would be if both individuals contributed. The worst outcome (1) would be for him to contribute while Member B shirks. Thus, the values in the matrix represent the ordinal ranking of each of the four different outcomes for both members.

This particular game assumes that neither player knows how the other will act. If Member B contributes, Member A would be better off if he had shirked rather than contributed ($4 instead of $3). If Member B shirks, Member A would still be better off if he had shirked ($2 versus $1). Game theory states that a player will play his best strategy given that the other player is playing her best strategy. Member A's best strategy is to shirk. If Member A shirks, it is also Member B's best strategy to shirk.

Even when the game is repeated over and over again, the players' best strategy is still to shirk. It may make sense for the two members to collaborate and decide to contribute fully, but even then, each member can benefit by breaking the deal (letting the other contribute while he shirks). Thus, neither member can trust the other to keep his end of the deal. Free-riding will still result.

These results can be extended to show that a group with many heterogeneous members and different available levels of contribution will also be plagued with incentives to free-ride. In such a group, the individual incentives to free-ride will be dependent on how different individuals value the religious benefits of contributing. Members who value the benefits relatively high will be more committed and thus contribute more than less committed members. This is not to say that the high-commitment members are behaving irrationally. They simply derive greater utility from the religious benefits than do low-commitment members. Therefore, low-commitment members will have a strong incentive to free-ride on the efforts of high-commitment members. High-commitment members will also contribute less because of the external benefits associated with their efforts.

Free-riding is a problem because (like in the example with education) it leads to sub-optimal equilibriums. In our example with Member A and Member B, the game-theoretic equilibrium (or Nash equilibrium) is where both members shirk, and production of religious benefits is two dollars. An efficient equilibrium (or Pareto equilibrium) is where neither player can gain without the other player losing. The free-riding equilibrium is not Pareto efficient because if each member contributes, both members gain and neither loses ($3 each instead of $2).
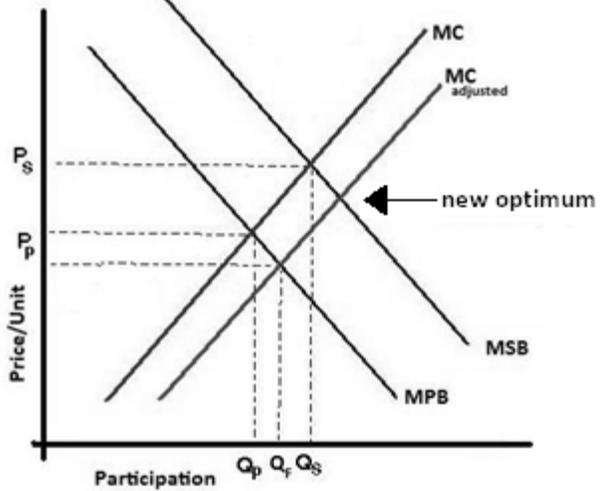
We have shown that the external benefits in clubs, religious groups to be specific, lead to free-riding and inefficient outcomes. In order to succeed, a religious group must become efficient by sufficiently overcoming the free-rider problem. Next we will examine several suggested solutions to the problem, before proposing how the temple recommend and geographical boundaries solve the problem.

IV. SOLUTIONS TO THE FREE-RIDER PROBLEM

Lawrence Iannaccone (1992) suggests that a religion's strictness partially solves the problem and thus accounts for the success of fundamentalist churches in American history. His model examines an individual's choice with respect to two goods, religious participation and secular consumption. He claims that by means of restrictions and penalties (strictness), a church increases the cost of secular activities, which, given his two good model, implies that the marginal cost of religious participation decreases.

Figure 3 illustrates Iannaccone's model with a cost-benefit analysis. The graph is similar to Figure 1, except here we are analyzing religious participation rather than education. Increased marginal cost of secular consumption results in decreased marginal cost of participation in the religious group. The new equilibrium is shifted to the right (Q_F), closer to the optimal Q_S. Notice, however, that the new marginal cost

Figure 3: Correcting for externalities by strictness.

curve also yields a new optimum to the right of Q_S. In his paper, Iannaccone appropriately refers to this "strictness" method as a "second best solution" to the positive externality problem.

Does Iannaccone's two-good model accurately describe real world behavior? His results appear to be dependent on his two-good model (i.e., a religious good and a secular good.) Is it reasonable that prohibiting tobacco and alcohol increases the cost of all secular activity? For instance, the resources and time spent smoking and drinking could be spent water-skiing just as easily as they could be spent praying. Since most restrictions imposed by churches only prohibit

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specific behaviors rather than all non-religious activities, the two-good model has limitations. Others, including Marwell (1996), also have problems with Iannaccone's hypothesis.

McBride focuses his analysis on the LDS church. He suggests that some of the religious benefits can be made excludable. For example, certain benefits can be only available if the member meets a certain minimum of hours committed to the group per week. This would exclude those members not willing to contribute that much time in return for the benefits (i.e. low-commitment members).

This seems to be a simple answer. If the problem is due to the non-excludable nature of the club goods, making the goods excludable should solve the problem. However, it is not this simple. In the case of a religious organization, it may be impractical to monitor the members' contribution. In some cases it may be unethical to do so. It would also be unethical to charge money (a form of exclusion) in return for religious benefits.

McBride suggests that although some benefits are difficult to make excludable, some are rather easy to exclude. As a result, the church is able to create a type of "menu" of benefits. A well designed menu would get each individual to contribute more than he or she would under any other menu. High-commitment members would be rewarded with excludable benefits and thus have the incentive to continue their high levels of contribution. Those that didn't value those excludable benefits would still receive other benefits.

McBride's menu solution is very similar to how we believe the temple recommend functions to solve the free-rider problem. Next we show how the temple recommend increases efficiency. We will use two different models to do so.

V. The Temple Recommend as a Solution to the Free-Rider Problem

Temple worship is a major characteristic of the LDS faith. For the members of the church, the temple is different than the chapels they use for weekly worship and other meetings. An ecclesiastical leader and scholar of the church, James E. Talmage (2001), wrote:

"Both by derivation and common usage the term *temple*, in its literal application, is of restricted and specific meaning. The essential idea of a temple is and ever has been that of a *place* specially set apart for service regarded as sacred, and of real or assumed sanctity; in a more restricted sense, a temple is a *building* constructed for and exclusively devoted to sacred rites and ceremonies."

Currently, there are 130 operating temples around the world, with eight more under construction, and 14 announced to be built soon. The temple is where members receive what they believe to be the greatest of God's blessings. However, not just any individual or member of the Mormon faith can enter a Mormon temple. One must be in good standing with the church and have an interview with a church authority to verify this standing. The interview verifies that the individual is observing required practices and attending necessary meetings. It is through these interviews that a member obtains a temple recommend. The temple recommend then acts as the member's "license" to engage in temple worship. The recommend is typically valid for one or two years. The LDS temple recommend will be an integral part of our economic model explaining the church's efficiency.

The temple recommend makes the benefits of temple worship excludable. Only members who contribute enough to obtain a temple recommend are able to enter the temple and enjoy the benefits thereof. The benefits produced within the temple *club* are non-excludable within the

club, but excludable to those members who don't meet the minimum requirements of the temple recommend. Thus the temple recommend effectively creates club within a club.

Cost-Benefit Analysis of the Temple Recommend

For a simple explanation of how this works, we will employ a cost-benefit analysis. Consider temple worship and regular church participation as two separate markets. We have already examined the free-rider problem associated with regular participation. However, the atmosphere of temple worship is not the social atmosphere found in regular church attendance. Instead, it is a much more personal activity. This difference makes it reasonable to assume that free-riding is not a problem (or at least is not as serious a problem) in the market for temple worship. To better understand the difference, imagine attending church services with no other members in attendance. The external benefits of others' participation are obvious. This is not the case with temple worship. Many members would not feel any less satisfaction attending the temple with no one else present. Many might actually prefer it. With this in mind, we will assume there are no external benefits associated with temple worship.

The temple recommend works as a licensing mechanism. Licenses to attend the temple are distributed to those who meet the minimum requirements of regular participation. Preferably, this minimum is set at Q_S (see **Figure 4**), the socially optimal amount of participation.

Figure 4: Temple Recommend on Market Equilibrium

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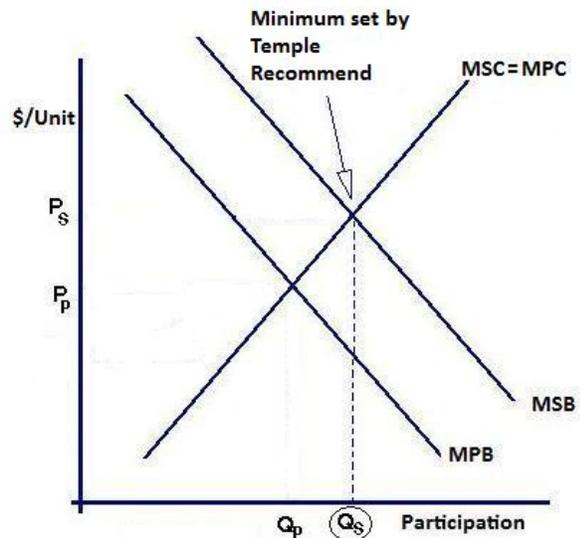
As high-commitment members increase participation in order to obtain the temple recommend, the social optimum is achieved, and efficiency is reached.

This socially efficient level of participation changes as the marginal benefit and marginal cost curves change with time and other factors. To maintain efficiency, the church would have to adapt to these changes by resetting the minimum amount of participation necessary for temple worship. Historically, LDS church officials have adjusted temple recommend requirements several times. These adjustments may be interpreted as the church's reaction to the changing social optimum.

Game Theoretic Analysis of the Temple Recommend

Now we will introduce the idea that, besides the recommend, the church produces several other excludable benefits. These include the priesthood (authority within the church available to all males over 12) and assignments to respected positions (or callings) in the lay ministry. These benefits, like the temple recommend, are obtained only after meeting certain minimum requirements. Although they are excluded, the minimum requirements are slightly different and less *costly* than those that are required of temple recommend holders.

The benefits of temple attendance, together with the priesthood and other excludable benefits, form the "menu" of benefits proposed by McBride. It is particularly interesting that this is a type of *vertical* menu. Whereas other clubs might offer menus featuring different benefits to suit the various interests of club members, the church offers a vertical menu. Instead of being able to choose between different *sub-clubs*, the members of the church simply choose whether or not to add to the benefits they are already entitled to. Once they move up one level, the benefits

of the previous level are still theirs to enjoy, and the benefits of the current level are added to them.

The exact number of levels within this menu is difficult to quantify. For our analysis, we will assume there are just three levels. We stated previously that the temple recommend effectively creates a club within a club. This has a significant effect on the efficiency of the club. To show this, we will expand on the example with Member A and Member B that was used earlier.

We propose that, unlike the club depicted with the matrix in Figure 2, the priesthood and respectable positions in the church add a degree of excludability to the religious benefits produced by the religious club. By virtue of being a member of the church, each member is entitled to various benefits of the church, regardless of their level of commitment or contribution. However, members cannot completely free-ride off the efforts exerted by others. In a way, the church punishes free-riders by excluding priesthood and callings from them. The effects of this exclusion are shown below.

We will use a modified version of the two-member club we examined before. The same production possibilities ($6, $4, or $2) still exist. However, in this club, two dollars of excludable benefits (priesthood/callings) are produced when at least one of the members contributes. The two dollars are included in the six or four dollars of total benefits. For example, if Member A contributes and Member B shirks, total production is still six dollars. Member A's payoff is still one dollar ($4 – $3). However, Member B's payoff is now two dollars. This is because two of the four dollars are excludable, leaving only two dollars of non-excludable benefits. Because he didn't contribute, Member B is only receives the non-excludable two dollars. In other words, Member B is not able to completely free-ride off

Member A's efforts, and vice versa. **Figure 5** is the same type of matrix we saw earlier illustrating the incentive to free-ride in a club.

Figure 5: LDS Church w/ exclusion

Member B

		Contribute	Shirk
	Contribute	(3, 3)*	(1, 2)
Member A			
	Shirk	(2, 1)	(2, 2)*

This game illustrates what happens if members are excluded from receiving some of the benefits of others' contributions when they themselves do not contribute. If Member A shirks while Member B contributes, Member A is only entitled to $2 of benefits rather than the $4 that were produced. If this is the case, the only way for Member A to receive high benefits is to contribute.

Notice that this game has two Nash equilibriums. Neither member has a dominant strategy. When the other is contributing, it is in the best interest of the other to contribute as well. When the one shirks, the other will shirk as well. As this game is repeated, it is possible for the members to collaborate and decide to contribute fully. Neither member would be able to shirk without making himself worse off. Thus, each member could trust the other to contribute as long as he himself does. This collaboration may or may not be practical in larger groups.

With this in mind, it is worth noting that the church's teachings and doctrines place strong emphasis on the importance of service (callings) and the priesthood. In fact, such strong emphasis on the priesthood that entrance into what LDS members believe is the highest degree

of salvation in contingent on whether a man has the priesthood or not. Leaders within the local congregations actively identify and contact what they call "prospective elders" in an attempt to help non-priesthood holders become qualified to obtain the priesthood. These practices may be understood as a way for the church to encourage the Nash equilibrium where members contribute rather than shirk.

Culture also plays a crucial role, especially in regions densely populated with members of the LDS church. A member's calling or position in the priesthood is very visible to the other members in the community or congregation. A certain degree of dishonor or shame would be an incentive for free-riders to begin contributing, if only to obtain the priesthood or a respected calling. This, like the teachings mentioned above, would also work to maintain the equilibrium where members' best strategy is to contribute rather than shirk[3].

Now we will introduce the temple recommend and temple worship. Temple worship is a highly excluded good. It forms a church within, but separate from, the rest of the church. Those holding recommends are given access to what members belief are the greatest of God's gifts available in this life. These benefits are of greater worth, but also require more inputs, than the benefits available to non-recommend holders. Different members value the temple benefits differently. Some don't value them enough to make them worth the inputs and elect not to obtain one.

For this next game, we will build upon the matrix in Figure 5. In this club, we feature the temple, and three contribution levels result: high-effort, low-effort, and shirk. Low-effort is what we originally stated was full contribution, but temple worship requires additional inputs. Since

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[3] With this in mind, it is interesting to note that the church has historically been stronger and grown relatively fast in areas more densely populated with members.

temple worship is not available until the member has put forth low-effort, the combined low-effort and temple inputs are called high effort.

To calculate the numbers in the matrix, we first must remember that if neither member puts forth high-effort, neither engages in temple worship. Hence, the sub-matrix representing these conditions is identical to the matrix in Figure 5. To avoid redundancy, we will not calculate these numbers again. In calculating the other numbers in the matrix, it is important to note that the benefits of temple worship benefit the temple-going member directly, with no associated external benefits. It is also important to remember that temple worship is separate from regular worship. Therefore, when we calculate the payoffs, we first calculate the payoff in regular church worship, and then include the temple payoff if the member has engaged in temple worship.

We will also assume that the two members value temple benefits differently. Member A receives two dollars net benefits for participating in temple worship (benefits subtract inputs). Member B, however, incurs a one dollar loss for engaging in temple worship (value of inputs exceeds benefits). This difference could arise in many different ways. Member B may live farther away from the temple, or may not have as much "faith" as Member A.

For an example of how we calculate the payoffs, take the case where Member A shirks and Member B puts forth high-effort. The payoffs from regular worship are the same as when Member B contributes fully and Member A shirks. That payoff is (2, 1). Then, since Member B participated in temple worship, he receives that payoff as well, which happens to be the loss of one dollar. The final payoffs are then (2, 0). The other cells of the matrix are calculated the same way and summarized in **Figure 6**.

Figure 6: The temple recommend matrix

Member B

Member A		High-Effort	Low-Effort	Shirk
	High-Effort	(5,2)	(5,3)*	(3,2)
	Low-Effort	(3,2)	(3,3)	(1,2)
	Shirk	(2,0)	(2,1)	(2,2)

In this game, it is Member A's best strategy to put forth high-effort irrespective of what Member B does. Member B's best strategy depends on what Member A does, but since Member A's strategy will be to put forth high-effort, Member B will act accordingly. His best strategy is then to put forth low-effort. Thus, the Nash equilibrium is where Member A puts forth high-effort and Member B puts forth low-effort.

Notice the efficiency of this "menu" compared to the first club we analyzed in Figure 2. Whereas members had a strong incentive to free-ride in the first club, regardless of their commitment level, under the temple recommend menu, high-commitment members (temple goers) have a strong incentive to put forth high effort, and low-commitment members have incentives to contribute more than they would otherwise. Thus, the church at least partially solves the free-rider problem. This type of analysis provides a framework for analyzing the effects of the church's temple recommend and other excludable benefits. What the actual benefits of efficiency are for a church are unknown.

VI. GEOGRAPHICAL BOUNDARIES

The church has an ecclesiastical hierarchy, with a president, two counselors, and 12 men called *apostles* at the top. The leadership is then organized geographically, with men known as

seventies presiding over different regions. These regions are then divided into *stakes*, with stake presidents over them. Finally, the stakes are divided into *wards*, presided over by *bishops*. The ward is the fundamental unit of the church. It is the ward that meets weekly for worship and organizes other social functions. Ward assignments are given geographically. Each ward is composed of members living within set, geographical boundaries.

McBride mentions geographical boundaries in his analysis. He points out the function they play in maintaining an optimal size of the club (an important aspect of club theory). However, the territorial boundaries affect more than just the size of the congregation.

In an article discussing the trends of the Catholic church, Maines and McCallion (2004) focus particularly closely on "parish membership in relation to residence". In the Second Vatican Council, the Catholic church relaxed the requirement that "place was fate for Catholic parish choice", focusing more on community than geography. This effectively severed the tie between place of residence and choice of parish, giving the members the chance to choose their parish, and thus encouraging greater lay parish involvement. Maines and McCallion thus see a direct link between lay involvement and choice of parish. The question then becomes, why is "place" still "fate" for members of the LDS church?

Geographical boundaries do not seem to exist to limit competition, and are ultimately unsuccessful in preventing individuals from choosing which ward they desire to attend[4]. The answer lies in considerations of religious capital. The menu of the church allows for high-commitment (high-capital) members to invest in low-commitment (low-capital) members with the expectation that such investments will pay dividends for the church. It would seem reasonable that there exists a certain ratio of high-capital members to low-capital members that

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[4] "Ward-shopping" when deciding where to live is not unheard of, although how common it is in practice is an empirical question.

would yield optimal results. Geographical boundaries may be used to try to achieve this ratio in each ward.

Such "investments" also require the development of trusting relationships between individual members and may require extended periods of time. Since moving is not costless, geographical boundaries may be an attempt to create a greater degree of stability in the memberships of individual congregations. This would give members more time to form the relationships needed for the creation of religious capital.

VII. OTHER NOTES ON EFFICIENCY

Minimum Requirements

It is appropriate here to note an interesting feature of the minimum requirements necessary to obtain a temple recommend. The minimum contributions necessary to obtain a temple recommend encompass several different aspects of worship (or inputs of production). Although it might make sense that these inputs would be interchangeable in terms of value, such is not the case. Say, for example, that Bill is a member of the LDS church and also a successful career man. Because of his career, contributing his time to the church is very costly. He instead contributes money (in addition to his 10% tithe) to the church, in exchange for his lack of time contribution. Although the value of his contribution may be equal to or more than that of the contribution of a member donating 10% and her time, Bill will not receive a recommend and the other member will. This may seem irrational at first glance, but it does make sense. The production of religious benefits requires all inputs (time, money, enthusiasm, etc). These are not interchangeable. The church cannot take Bill's money and purchase the missing time commitment with it. Although this may be possible in other types of production, it is not the

case with worship. Thus, obtaining a temple recommend requires minimum amounts of all inputs.

Monitoring

Making sure that temple recommend candidates meet these requirements and that temple recommend holders maintain the same level of contribution requires extensive monitoring by the church leadership. The church directs a significant amount of its human resources toward monitoring. The church has fostered a culture of interviewing. From the time members join the church or are old enough to talk, they begin learning that interviews are a normal part of membership. At work or in any other club, it may be extremely strange for one man to interview another about sometimes very personal issues, but in the church, members are exposed to it often enough that it becomes part of the membership experience. These interviews are the primary means by which the church leadership monitors its members as they progress to different callings, priesthood offices, and eventually temple attendance.

Monitoring keeps the menu functioning as it should. After all, if you didn't have to actually contribute to obtain the excludable benefits, they are no longer excludable, and the incentive to free-ride is in full force. Given the extraordinary effort the church makes to monitor its members, we can infer that the increased religious production due to efficiency warrants the monitoring costs.

VIII. DISCUSSION

In summary, we have described and shown the free-riding problem faced by religious organizations and explained how the temple recommend is a possible solution to that problem as

it relates to the LDS church.   We have also noted several other features of the church as they relate to the temple recommend system, and some of the effects on efficiency they may have.

We conclude that the temple recommend and associated features possibly explain the overall efficiency of the Church of Jesus Christ of Latter-Day Saints as a club producing religious benefits or capital. This efficiency is a possible explanation for the relative success the LDS church has seen in terms of growth, retention, and the overall commitment of its members. The framework and methods used in this research may prove helpful in understanding and increasing the efficiency of other clubs facing the free-rider problem. Approaches similar to the ones taken by the LDS church could have comparable results if it is reasonable for the club to employ such methods. The specific effects geographical boundaries have on the production of religious capital, and the nature of the menu within LDS theology instead of the just the organization are subjects for future research.

APPENDIX 1

CLUBS

      Religious organizations are best understood as clubs, in the economic meaning of the term. Clubs produce club goods. A club good is one which is excludable and non-rivalrous. To be excludable, the provider of the good must be able to determine who can and who cannot consume the good. Most goods we typically think of are excludable because of price. Price is the excluding factor because it excludes those unwilling to pay the specified cost. In clubs, membership requirements make the club good excludable. Baptism and adherence to certain commandments are typical excluding factors in Christian congregations.

      To be non-rivalrous, consumption of the good by one individual does not diminish the amount of the good available to others. Most goods we think of are rivalrous. If I purchase a new car from the local dealership, there is one less car for others to buy. Examples of non-rivalrous goods include air, FM/AM radio, and television broadcasts. As for a club, as defined by economists, enjoyment of the club benefits by one member does not decrease the amount of benefits available to other members of the club. Members of a congregation are not in competition for consumption of the religious benefits of worship. Instead, they enjoy the benefits together and non-rivalrously.

      Although excludability is a defining characteristic of a club good, this excludability breaks down when the club is analyzed by itself. At the level of the club, the club benefits become *public goods* (non-excludable, non-rivalrous). It is true that the club can exclude non-members from enjoying club benefits, but many of those benefits are non-excludable within the club. Benefits usually cannot be reserved for those members who contribute the most, and withheld from those contributing less. Depending on the club it may be unethical to withhold benefits. Perhaps measuring the members' contribution is impossible, unjustifiable, or entails a cost making it impractical to do so. Various aspects of the club can contribute to the non-excludable nature of the club benefits.

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AUTHOR'S BIOGRAPHY

Austin Bowles was born in Chapel Hill, North Carolina. He was raised in Weston, Idaho, and graduated from West Side High School in 2006. He entered Utah State University that fall as a presidential scholarship recipient and an undergraduate research fellow. He began his studies majoring in Biology, planning on one day becoming a physician. After a two-year leave of absence, he changed his major to Economics, hoping to set himself apart from other pre-health students.

Upon becoming an Economics major, he began working with his father, Dr. Tyler Bowles, on developing a research project concerning the economics of religion, a subject they were both eager to study. They soon developed an idea, and Austin began working with Dr. John Gilbert on the project.

In 2010, Austin will complete his degree in Economics, with a minor in Chemistry. With this background, Austin hopes to continue his education at a medical school and someday become a physician. He enjoys teaching and hopes to eventually teach at a medical college.