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THE CHURCHING OF COLONIAL CONNECTICUT: A CASE STUDY

BROOKS B. HULL

UNIVERSITY OF MICHIGAN AT DEARBORN

GERALD F. MORAN

UNIVERSITY OF MICHIGAN AT DEARBORN

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The market model of religion asserts in part that clergy respond to incentives. For eighteenth-century European established churches, clergy income was independent of church membership and so clergy tended not to behave in a manner attractive to potential members. By contrast, the established Congregational (Puritan) church of colonial Connecticut featured a structure that rewarded to a significant degree zealous clergy. Clergy were hired and fired at the local level by community members who also voted on local clerical taxes. The market model thus predicts relatively strong church membership. Archival data show that the number of new Puritan congregation members as a share of population remained relatively constant over time. The number of new members of individual established congregations remained constant. Church membership was often high in colonial Connecticut towns. Entry by nonestablished congregations had only a modest negative effect on Puritan membership.

THE MARKET MODEL

Established churches have a bad reputation among economists and sociologists, a reputation whose source is linked closely to the market model of religion. The market model describes and analyzes religion in general and established churches in particular. The model in turn owes much of its origin to Adam Smith's *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776[1784]). Not only is it one of the defining books in economics, *Wealth of Nations* contains important passages about religion. Smith described the organization and motives of a church in much the same way economists describe the organization and motives of firms. Importantly, Smith made the specific prediction that because they earn a wage guaranteed by the state, clergy in an established church will not work as hard to attract members as will clergy in nonestablished churches (who must attract members in order to prosper). As a consequence, an established church's clergy eventually will lose touch with the masses and be unable to respond effectively to competition from nonestablished churches.

Using the eighteenth-century Church of England as a case in point, Smith argued, "The clergy of an established and well-endowed religion frequently become men of learning and elegance, who possess all the virtues of gentlemen; but they are apt gradually to lose

the qualities, both good and bad, which gave them authority and influence with the inferior ranks of people." Established faiths, when faced with new sectarian competition, will thus invariably lose out. As Smith said, "in general every religious sect, when it has once enjoyed for a century or two the security of a legal establishment, has found itself incapable of making any vigorous defense against any new sect which chose to attack its doctrine or discipline. Upon such occasions the advantage in point of learning and good writing may sometimes be on the side of the established church. But the arts of popularity, all the arts of gaining proselytes, are constantly on the side of its adversaries" (789). Such was the case in eighteenth century England, where "those arts [of gaining followers] have been long neglected by the well-endowed clergy of the established church, and are at present chiefly cultivated by the dissenters and by the Methodists." As a result, the Methodists in particular were greatly "in vogue" (789).

The first explicit use of Smith's prediction about the effect of establishment on the religious market is by Iannaccone (1991) who shows in part that contemporary church attendance is much lower in established Protestant (mainly Scandinavian) Western European nations than in nonestablished Western European Protestant nations and the United States. Chaves and Cann (1992) support this result using a slightly different set of countries and different criteria for establishment and for government regulation of the church. Finke and Stark (1992) (and earlier Stark and Finke 1988) assert that U.S. church membership grew dramatically after a colonial period characterized by low church membership caused by monopoly established churches that had no motivation to attract new members. Finke (1990) emphasizes the role deregulation played in increasing denominational diversity and total membership in colonial America beginning in the late 1700s. Similarly, Hamberg and Pettersson (1994) show that religious commitment is stronger for members of nonestablished churches than for members of the established church in contemporary Sweden. Stark and Iannaccone (1994) explain the secularization of Europe as a consequence of establishment. Iannaccone, Finke, and Stark (1997) review key examples of the effect of establishment on religious markets in Europe, Japan, and the United States. This body of research is not without critics. Bruce (1995a, 1995b), Hadaway and Marler (1996), and Lechner (1996) question various aspects of Smith's prediction and the data used to test it.

Most of the existing research emphasizes potential weaknesses of established churches. Must established churches necessarily fail to attract members? The answer is no, of course. Nothing about the market model mandates that established church clergy be indifferent to members. The market model as defined by economists has as its foundation the straightforward assertion that individuals tend to respond to incentives (rewards). Adam Smith applied this market model in describing the Church of England. The Church of England failed, not because it was established per se, but because its clergy's "exertion, their zeal and industry" were likely to be less because their income was derived from "a landed estate, a tythe or land tax, an established salary or stipend" rather than "the voluntary contributions of their hearers" (788). In other words, Smith recognized that the structure and organization of the established Church of England, and by extension the established churches of the remainder of Europe, did not reward zealous clergy, did not provide an incentive to attract members.

Not all established churches imitate Europe, however. The colonial Connecticut Congregational (Puritan) church is an example of an established church with a structure that created incentives very different from the European model, incentives that rewarded in significant ways clergy who could attract committed members and could respond to competition from other churches. In this circumstance, the market model predicts stronger membership.

This paper's next section examines the structure of the Connecticut establishment. Subsequent sections draw upon a unique set of data on church membership, data that reveal established Connecticut congregations able to attract a consistent and surprisingly high number of new members as a proportion of the colony's population, even in the face of growing competition from nonestablished churches at the end of the colonial period.

THE ESTABLISHED CHURCH IN COLONIAL CONNECTICUT

Connecticut churches began less as established than as sectarian institutions. Having rejected the hierarchy and inclusiveness of the parent established Church of England, they were founded upon sectarian ideals of local group control and cohesiveness and of exclusive, restrictive membership. The formation of the First Church of Milford provides an illustration. Milford First was founded by families who had either followed Peter Prudden, the minister, from England or had been attracted to him by his charismatic preaching in America. Prudden and several other men began holding private religious meetings in 1638 in anticipation of founding a church. In 1639, he and his followers established the community and church of Milford. Seven men, Prudden among them, became the congregation's first members, its "pillars," by signing a written covenant binding them and future members. A key decision by the pillars was to restrict membership to individuals who could demonstrate experience and knowledge of faith to the satisfaction of current members. Membership was neither automatic at birth nor simply open to all who wished it. Once the Milford church was gathered, Prudden was formally ordained by the membership. Since under Puritanism the individual church controlled the local clerical office, no ecclesiastical hierarchy was involved in Prudden's ordination ceremony.

Common features of New England congregations included organization at the local level by small groups of individuals, including a minister, whose interests were identical. Membership was highly restrictive, being confined to people who could demonstrate an experience of conversion and knowledge of faith to the satisfaction of current members and ministers. Participation in the two sacraments of the church was also highly restrictive. Only those people who could pass the test of faith could partake of the sacrament of the Eucharist, and only those children who were born to the "elect" could receive the sacrament of baptism. While New England congregations could vary the strictness of the test of admission, virtually all required of new members some significant public profession of faith and acceptance of doctrine. Whether town residents presented themselves for admission, however, was a matter of individual choice.

From the beginning, Connecticut congregationalism enjoyed established status in two respects—state prohibition of religious competition and taxpayer support of the local minister. In the early colonial period, Connecticut law tolerated no religious competition. The state allowed only one church and one minister per parish or town, and that church and

minister had to be congregational. In addition the town taxed all residents, church and non-church members alike, for the support of the minister and upkeep of the meeting-house. Further, all town inhabitants, regardless of membership status, had to attend Sabbath services; anyone failing to do so was fined. As one historian has argued, early New England Puritanism was a dual religious system: "the state served as church and the congregations served as sects within it. The state made it possible for the churches to serve as sectarians by keeping the entire community in line with God's laws and by serving many of the roles normally fulfilled by the church" (Pope 1970:105). The Connecticut establishment did not, however, perfectly mimic those of Europe. Ministers were hired (ordained) by the congregation, and fired (dismissed) by the congregation and clerical taxes were voted and disbursed locally.

After 1690, Connecticut congregationalism became in some ways more church-like, and more like the English establishment the early Puritans had left behind. Puritan congregations became more inclusive. The Half-Way Covenant was introduced and widely adopted, allowing the children of members to join the church "half-way" and to obtain baptism for their children by providing evidence of doctrinal knowledge but not of conversion. Consequently, the number of baptisms escalated and the number of children subject to church discipline increased substantially. Soon some churches allowed individuals without en-churched parents to become "half-way" members. Tests of faith were weakened or even dispensed with, so that in many congregations morality became the sole criterion for church membership and participation in the Lord's Supper.

Just as church membership was broadened, so church polity and the religious establishment changed over time. Lay control over admission and ordination diminished, giving way increasingly to the exercise of clerical prerogative over the processes. New neighborhood associations of clergy appeared, and licensed and advised congregations on pastoral candidates. In 1708, Connecticut adopted the Saybrook Platform, which "added substantially to the minister's authority" and, along with the Half-Way Covenant, "imbued Connecticut churches with much of the strength of the establishment in Scotland and England" (Bushman 1967: 151). The Platform organized the congregations of each county into consociations dominated by clergy, which sought to buttress church discipline and clerical authority against local dissent. If it ignored a consociation decision, a congregation lost the right to raise taxes to support its minister. As historian Richard Bushman argues, "a century after settlement Puritanism had reverted to many of the practices of the very Establishment the Puritans had once sought to escape" (1967:147).

Although they sought to enlarge their authority, Connecticut ministers were nevertheless heavily reliant on local good will for their success. In this sense the Connecticut establishment did not make the transition to the European mode. In 1699, the Connecticut Assembly voted to extend the right to vote on the selection and dismissal of ministers to every inhabitant of a parish, church member or not. Thereafter, local majorities increasingly insinuated themselves into the processes of hiring and firing ministers, rights once reserved for church members. Concomitantly, disputes between pastors and parishioners rose sharply, as did the number of ministers dismissed from pulpits (Schmoller 1975:256-257). The major source of both disputes and dismissals was salaries. In the period 1700-1750, conflict over salary accounted for over half of local controversies, as taxpayers, already overburdened by currency inflation and the expense of Anglo-French wars fought

in the colonies, short-shrived ministerial salaries and resisted clerical requests for adequate maintenance. Conflict over theology also lay behind the rise in dismissals. Before the 1699 law was enacted, ministers had only congregation members to keep happy. Now they had to please everyone. The Connecticut establishment contained new incentives for clergymen to attract members, and starting in the early 1700s, Connecticut ministers adopted a new evangelism to do just that, courting the good will and soliciting the conversion of all townspeople.

At the same time, Connecticut churches faced rising competition from new, nonestablished sects, including Baptists, Quakers, Anglicans, and Separatists (McLoughlin 1971). In 1708, the Connecticut Assembly, under pressure from England, where religious toleration had been legislated in 1689, voted to allow Protestant dissenters to worship separately, although they had to obtain permission from the county court to do so and still had to pay taxes to the local established ministry. In 1727 and 1729, the Assembly granted Anglicans and Baptists freedom from paying taxes and left them on their own to support their worship. However, as Richard Bushman points out, "The exemption took different forms. Anglicans, who believed in establishment, received a portion of the minister's tax proportional to their numbers. The Baptists and Quakers, rejecting the conception, were simply freed from paying taxes and left to their own devices to support their worship" (Bushman 1967:168). Henceforth, Connecticut tolerated rising religious diversity within broad limits. By 1776, there were twenty-five Baptist congregations in Connecticut, where only one had existed in the seventeenth century. There were also thirty-six Anglican congregations in the colony (the first, Greenwich Episcopal, was founded in 1705), and twenty-seven separatist Puritan congregations (congregations formed from the Great Awakening). The Quakers made few inroads in the colony.

Despite the growth of ecclesiastical diversity, social pressures to join the established church nevertheless persisted, albeit in attenuated form. Although Connecticut never followed the lead of Massachusetts in limiting the franchise and office holding to church membership, the church was still an instrument of political advancement. Voters, for example, favored the elect over the nonelect for public office, although towns' preference for church members as leaders weakened over time (Cook 1976:120-131). Further, so long as congregationalism and the parish remained synonymous for most people, the established church was the dominant religious force in the rituals of everyday life.

For most periods, more women than men joined the church (both as half-way and full members) and at earlier ages, and admission to a church often followed marriage and coincided with childbirth. Women who joined the church after marriage tended to do so upon the birth of a first or second child, seeking to fulfill the prerequisite for these and subsequent children's baptism (Moran 1980:55-65). Only during the Great Awakening was admission to membership less a function of the rites of adulthood than of the passages of adolescence, as numerous new members, males as well as females, were single and under the age of twenty at admission (Moran 1991:56-57; 1993:51).

To summarize, the colonial Connecticut Puritan church was similar to European establishments in that it enjoyed state-protected monopoly status for much of the colonial period and taxpayer support for the entire colonial period. Unlike European establishments and despite clergy efforts to gain more control, local congregation members and then the community retained and routinely exercised the power to hire and fire clergy and set clergy

salaries. Puritan church members enjoyed special social status reinforced by the selectivity of membership. In the latter colonial period, the Puritan church faced increasing competition from non-Puritan congregations, some of which were also taxpayer supported.

DATA

The data we employ to test the market model are annual totals of new male and female members for fifty-three Puritan congregations in colonial Connecticut from 1639 to 1776. The data were collected by the authors from archival church membership records in Connecticut and represent a depth and breadth of information of unequalled value. No equivalent data for colonial American church membership exists. These fifty-three congregations represent between roughly ten and fifty percent of the total number of congregations in the colony, depending on the year.

Most historical analysis of religion in the colonial period relies on fragmentary evidence contained in publications like religious tracts and sermons and in a relatively small number of diaries and letters. Such sources are valuable in their own way, but are subject to the biases and misperceptions of the individual writers. By contrast, membership data like these represent the revealed documented preferences of a substantial share of the population of colonial Connecticut.

Some writers question the appropriateness of membership as a measure of religious commitment, in particular since membership might not be a measure of the intensity of religious belief or actual church attendance. The latter issue is not relevant since church attendance was mandatory. The former is a legitimate concern but is less relevant in colonial Connecticut than for contemporary congregations. Because membership in colonial Connecticut Puritan congregations was limited to those who openly professed faith and were approved by existing members and/or ministers, a level of commitment is indicated in the colonial Connecticut church that might not be so in other colonies or in modern congregations where membership is largely unrestricted.

Regardless of whether membership measures the intensity of religious belief, the focus in this paper is on the question of whether or not churches could attract members not on the intensity of belief of members and non-members. In other words, we seek to understand the extent to which the church as a firm provided a mix of products and services that attracted members regardless of their underlying strength of belief, just as economists model firms providing products desired by consumers without focusing on the underlying strength of consumer preferences.

The data used here are not without problems, of course. We do not know in most cases total membership for each congregation. Although attendance at services was mandatory, only those who satisfactorily proved their faith were allowed membership. The data also do not include all congregations, especially the non-Puritan and Separatist Puritan congregations that appeared in the later colonial period. As such, the congregations for which data are available are not a random sample. Further, the data come only from a single colony and do not necessarily represent all of the colonies or Puritanism as an intercolonial entity, although they arguably do represent Puritan New England. Nevertheless, the reported congregations are located in all parts of the colony, cover the entire colonial period, and include areas with diverse population densities.

TRENDS IN NEW PURITAN CHURCH MEMBERSHIP

The market model predicts that clergy who are rewarded for attracting members are more likely to try to do so. The European establishments, as Smith and others noted, did not reward zealous clergy. The colonial Connecticut establishment, by contrast, was structured in a way that provided significant incentives for clergy to attract members. We predict, therefore, that membership patterns should be much stronger for Puritan congregations than Smith and others describe for European-type establishments. We expect to see rising or at least constant membership over time as a proportion of the population eligible for membership. We expect competition from nonestablished churches to have little or no significant negative impact on Puritan church membership as a share of population in the years after entry by nonestablished churches is permitted. We expect Puritan church membership to be a significant proportion of the population eligible for membership, reflecting the incentive of clergy to attract members.

Note, however, we do not expect membership to be as strong as would occur in an unregulated religious market. Even the Connecticut establishment's structure did not provide a perfect connection between membership and clergy compensation. Further, we are studying congregations over a period of more than one hundred years. Any organization that can remain vital and responsive over that span is exceptional. Finke and Stark (1992) assert, for example, that churches tend to lose their evangelical energy over time, independent of being established.

Much of our data measure new members of Puritan congregations rather than the total number of members. Nevertheless, a congregation with shrinking total membership is unlikely to attract growing numbers of new members. Similarly, a congregation whose membership is growing likely does so by attracting new members.

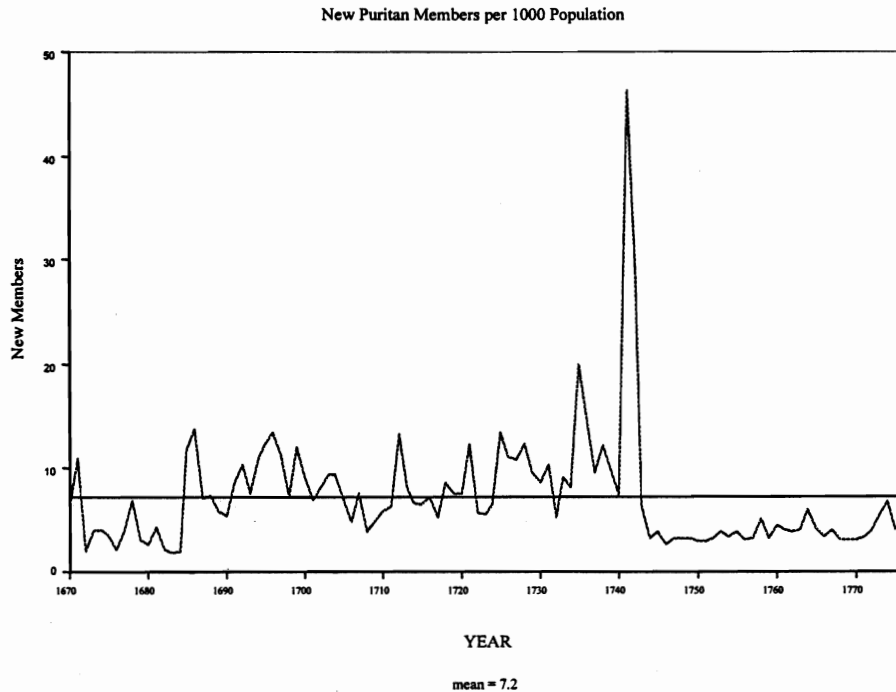
The most obvious way to test the prediction that membership will remain strong given our data is to regress new members per reporting church on time for the period 1639-1776. For that regression, the coefficient on a variable for the year is positive (0.010) but not statistically significant ($p = 0.25$).

Using raw new membership data, however, does not account for changes in population or changes in the number of reporting churches. We therefore use our data to create a new variable that estimates the annual total number of new Puritan church members per one thousand population in Connecticut. The variable is calculated by assuming that all Puritan congregations are adding the same number of members as the average of congregations for which data are available. We then divide this estimate of total new members by Connecticut population in thousands. For example, in 1730 the thirty-four congregations for which data are available added an average of 6.5 members. Since there were one hundred and one total Puritan congregations in that year, we estimate that a total of 656.5 members were added in the colony. Connecticut's population is estimated to be 75,530 in 1730, so we conclude that Puritan congregations added 8.69 new members per thousand population in 1730.

The data we report begin in the year 1670. We have data for so few towns in the period 1639 to 1669 that new member estimates are highly problematic. By 1670 however, we have data for six of the twenty-one congregations extant and the estimate is much more

stable. In subsequent years, data for an increasing number of congregations are available. Figure 1 shows a graph of annual data from 1670 to 1775. For reference, the mean of the entire series is drawn as a horizontal line at 7.2 new members per thousand population.

FIGURE 1



Note the dramatic upward spikes in the graph in 1741-2. The years 1741 and 1742 are the primary years of the Great Awakening. This was a momentous religious event in the colonies, New England especially. A significant characteristic of the period was evangelical efforts by independent nonestablished clergy, like George Whitefield, as noted by Finke and Iannaccone (1993). Data for fifty congregations are available and a substantial share witnessed significant increases in membership. Referring to the graph overall, new membership per congregation rises up to the Great Awakening, and then steps downward. The decrease in new members after the Great Awakening is substantially explained as individuals who joined during the Great Awakening but would otherwise have joined in subsequent years. The average number of new members per thousand population in the ten years before the Great Awakening (1731-40) is 11.5. In the following ten years, which include the Great Awakening (1741-1750), the average number is 10.7. As noted before, Puritan congregations relaxed their age expectation for membership during the Great Awakening.

The average number of members added per year for the entire period between 1670 and 1776 is 7.2. Adding an average of only 7.2 members per thousand population per year may seem like a trivial number, but is more than enough to yield substantial total membership,

especially given the limitations on population eligible for membership, an issue addressed later. No obvious trend for the entire period is evident and the graph shows substantial year-to-year variation.

This approach with time as the only independent variable may be supplemented with other data. What additional factors might have influenced new membership? A previous analysis of Woodbury is suggestive. As that paper's multiple regression analysis shows, religious activity as measured by new full and half-way members and baptisms was affected by regional conditions like the colonial economy and the Great Awakening (Hull and Moran 1989). To test the effect of competition on Puritan congregations, we include a count of nonestablished congregations. This variable includes Baptist and Anglican (Episcopal) as well as Separatist Puritan congregations. Table 1 shows summary results from multiple regression analysis.

Table 1
Time Series Regression Analysis of New Puritan Members
Dependent Variable is New Puritan Members per 1000 Population

	OLS Regression Equations			
	#1	#2 Omit Year	#3 Omit Non-Puritans	GLS Regression
Constant	5.98 (0.000)	8.53 (0.000)	53.1 (0.008)	4.099 (0.000)
Great Awakening	29.1 (0.000)	30.2 (0.000)	30.8 (0.000)	29.4 (0.000)
Nonestablished Congregation	-0.114 (0.000)	-0.051 (0.000)	--	-0.113 (0.000)
Economy	-1.21 (0.001)	-1.41 (0.033)	-1.47 (0.040)	-0.918 (0.149)
Year	0.072 (0.001)	--	-0.027 (0.021)	0.072 (0.011)
N	106	106	106	105
Adjusted R ²	0.682	0.647	0.590	0.639
Equation p-value	0.000	0.000	0.000	0.000
Durbin-Watson	1.35*	1.20*	1.04*	1.97*

p-values for coefficients in parentheses.

**Autocorrelation. At 1% level ($k=5$, $n=100$) reject $H_0: \rho=0$ when $dw < 1.44$.*

**Autocorrelation. At 1% level ($k=4$, $n=100$) reject $H_0: \rho=0$ when $dw < 1.46$.*

**No autocorrelation. At 1% level ($k=5$, $n=100$) reject $H_0: \rho=0$ when $dw < 1.65$.*

Regression equation #1 incorporates the variables suggested above. The dependent variable is our estimated average number of new Puritan members per one thousand population. The regression coefficients show that during each of the two years of the Great

Awakening, twenty-nine members are added per thousand population. Those years with an improving economy reduce the average number of new members per thousand population by 1.2. These results are similar to the earlier Woodbury research. An increase in nonestablished competition reduces established Puritan new membership, but only modestly. The addition of one nonestablished congregation reduces the average number of new Puritan members by only 0.11 per thousand population. Finally, the coefficient on the Year variable shows a small but statistically significant positive trend.

These regression results support the market model's prediction about the strength of Connecticut's established church. However, equation #1 suffers from two problems common to time series data: serial correlation and multicollinearity. The latter occurs due to the strong correlation between the Year and Separatist Congregations variables ($r = 0.87$). Regression equations #2 and #3 drop these two variables in turn. Without the Year variable, the coefficient on the Nonestablished Congregations variable in equation #2 shrinks further but remains statistically significant. Without the Nonestablished Congregations variable, the coefficient on the Year variable in equation #3 becomes negative but has weaker statistical significance.

The first three equations show significant serial correlation as shown by the values for the Durbin-Watson statistics. To address the problem of serial correlation, we employ a generalized least squares model. The dependent and each of the independent variables is transformed by subtracting from each observation its lagged value weighted by a value based on the Durbin-Watson statistic: $X = X_t - \beta X_{t-1}$ where $\beta = 1 - dw/2$. GLS regression results are summarized in the last column of Table 1. Coefficients are similar to equation #1 but the GLS regression does not suffer from serial correlation.

We draw three conclusions from regressions on all reporting congregations for the colonial period. Competition from non-Puritan congregations seems to have had a very modest negative affect on new Puritan membership. Evidence suggests that Puritan congregations were able to add members at a rate equal to the growth in population at least up to the Revolution. Consistent here, note that Olds (1994) finds no significant change in Connecticut Puritan church membership after its disestablishment. Finally, the Puritan church participated strongly in the Great Awakening, adding dramatically more members than during any other time in the colonial period. This latter suggests that established congregations had a desire and were able to recruit members during a period characterized by significant nonestablished evangelical activity.

NEW MEMBERSHIP BY AGE OF CONGREGATION

The combined average of new members added for all colonial Connecticut Puritan congregations remains relatively constant over time. Aggregating membership numbers across congregations, however, may mask trends in individual congregations. As the historical discussion above shows, the Puritan "church" is more appropriately characterized as a collection of relatively autonomous congregations. As such, trends in the established church might be more accurately reflected at the congregational level. Two additional potentially useful approaches are pursued here that might reveal the effect of the age of a particular congregation on membership. That is, we examine particular established congregations rather than the established church in general. First we take a cross-sectional

"snapshot" across all congregations in 1775. Second, we create a sequential data set for all congregations based on the number of years since the congregations were gathered. An additional benefit of these approaches is that they eliminate problems of serial correlation because they do not use time series data.

FIGURE 2

New Members and Congregation Age: 1775

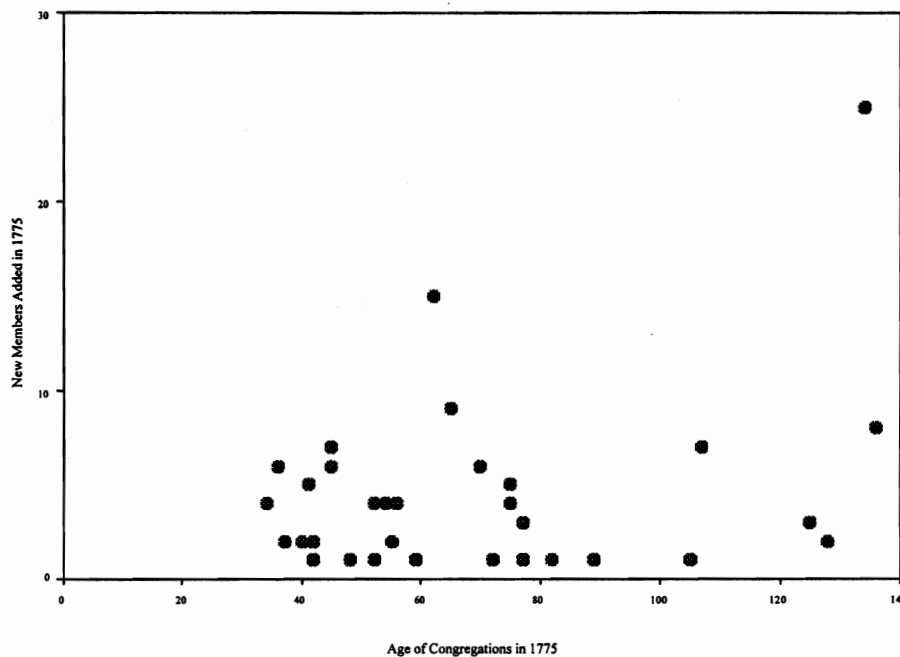
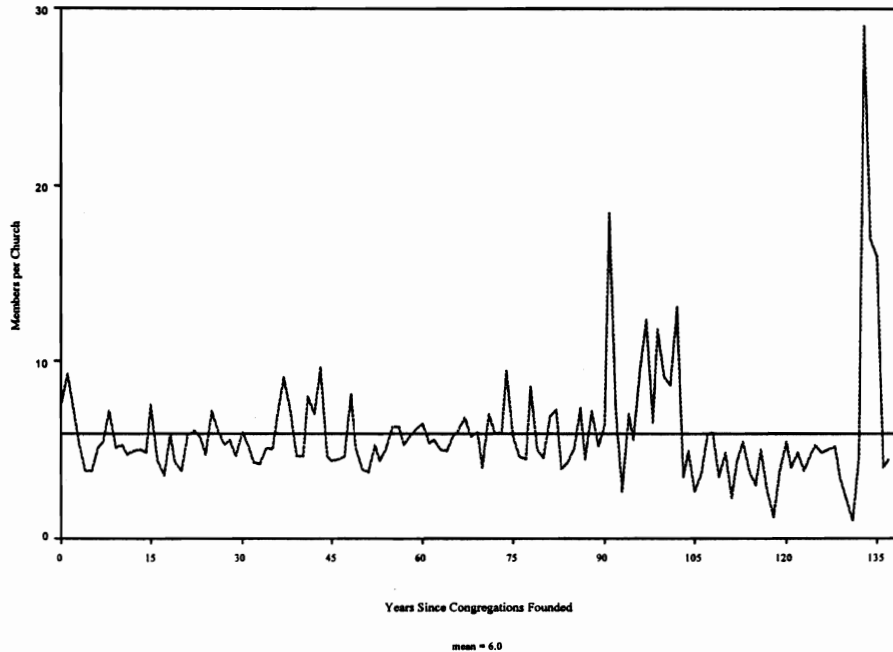


Figure 2 is a scatter diagram with the number of new members on the vertical axis and the years since the congregation was founded on the horizontal axis. Each point in the diagram is one congregation for which membership data are available. The year 1775 is chosen because it represents congregations on the eve of the Revolution and includes very old as well as quite young congregations.

Each point in the scatter diagram represents for one congregation the number of years since that congregation was gathered and the number of members the congregation adds in 1776. For example, in the upper right-hand corner of the graph is a point for Westerfield, which added twenty-five members and was 134 years old in 1775. The second highest number of members, fifteen, was added by West Hartford which was sixty-two years old. An ordinary least squares regression with the year since each congregation was gathered as the independent variable and new members for each congregation as the dependent variable yields a positive coefficient on the year variable (0.048) but the value is only marginally significant ($p = 0.077$). Older congregations added at least as many members as younger congregations.

FIGURE 3

New Members Since Churches Founded



As a second test, in Figure 3 we rearrange all of the congregations so that the first data case is the number of members added in all the reporting congregations' first year. Subsequent cases are subsequent years in sequence. For example, the first case in the data set includes Woodbury, which added three members in its first year (1668), Middletown, which added twelve members in its first year (1670), and additional observations for all of the towns for which data are available in the year the congregation was gathered. The total number of new members is divided by the number of reporting congregations, yielding an average of 7.3 members added for congregations in their first year since founding (year 0). Note that data are not available for all congregations from the year they were gathered. Thus the first year does not contain the full fifty-three congregations. Note also that the number of congregations in the data set falls as the year since founded increases since congregations are founded throughout the colonial period.

In the figure, the mean number of new members (6.0) for all years is drawn in as a reference. No apparent trend appears in the data at least for the first hundred or so years. After that, the data seem to step downward until age 130 or so and then spike sharply upward. Interestingly, the largest average number of members is added at age 133. This is a somewhat anomalous result however. It is due to a large number of members added by two congregations, Hew Haven and Westerfield, in a part of the data series where only three congregations are in the sample. Remember that very few congregations span the full number of years in the sequence. The same potential problem is present after 110 years since only seven congregations are represented.

In order to test for a long-term trend, we calculate an ordinary least squares regression with the average number of new members added per reporting congregation as the dependent variable and the years since founded as the independent variable. As before, no trend emerges. The coefficient on the Year variable is positive (0.0079) but not statistically significant ($p = 0.253$). Regressions using weighted least squares to deal with the potential heteroskedasticity due to small sample size in the later years show no difference in the results. As before, older Puritan congregations added at least as many new members as younger congregations.

TOTAL MEMBERSHIP AS A SHARE OF POPULATION

While they yield compelling results, the data examined to this point only measure new church members. Our data on total church membership are more limited. Table 2 summarizes church membership as a proportion of population in selected Connecticut towns. The data are compiled from town archives for selected years between 1675 and 1729. Numbers in the body of the table are the percent of adult males or the percent of families who are members of the Puritan congregation in the town. The bottom row of the table is the population-weighted average of membership proportion for all of the reporting towns in that year. Membership shows substantial variation from town to town. In terms of averages for all reporting towns, the sample is too small for reliable generalizations, but no downward trend is apparent.

Colonial historians have compiled some additional membership data. Lockridge (1967:409, 411) examines town records for Dedham and reports that seventy percent of the town's taxpayers were church members in 1648 and thirty-six percent of adult male inhabitants were communicants in 1670. Moran (1979) uses local records, including tax lists, to determine membership in Milford over a number of years. In 1643, eighty-two percent of men receiving land, seventy-seven percent of all inhabitants' wives, and seventy-eight percent of male inhabitants were church members. In 1660, seventy-three percent of male inhabitants were members. Eighty percent of men who arrived between 1644 and 1654 and stayed in town eventually became members. In 1669, thirty-six percent of adult males were members. Of all inhabitants, membership was forty-seven percent in 1678, forty-six percent in 1687, and forty-three percent in 1712.

In reviewing these data, it is essential to highlight the nature of the appropriate market from which the calculation of membership is made. Children were not allowed to become Puritan church members. Teenagers rarely became members, except during the Great Awakening. Further, most adults were allowed to join the church only after they had formed a household and had become parents. For example, during the seventeenth-century in New England, ninety percent of new members were over the age of twenty, and eighty percent were married (Moran 1980). Although there was variation across congregations and variation over time, church membership was almost always restricted to adults. In assessing the ability of Puritan congregations to attract members, the relevant market definition includes only adults (defined as those age twenty-one or older), since only they were allowed to become members. The contrast with contemporary denominations is apparent since few limit membership only to those age twenty-one or older.

This issue is especially important given the age distribution in Connecticut. In 1774 for example, fifty-seven percent of the population was age twenty or younger (Hoadly 1890:485-91). In other words, of every one thousand population, only about 430 people were eligible for membership. Further, membership was restricted only to those who demonstrated a level of religious commitment satisfactory to current members and clergy, where the evaluation of that commitment was in part reinforced by having formed a household.

Table 2
Puritan Church Membership in Selected Connecticut Towns
(In Percent of Adult Male Population Unless Noted)

Year	1675	1680	1690	1700	1709	1712	1729
Farmington		45		43			
Groton*							62
Killingly*							44
Middleton	54				28		
Milford			32		48		
New Haven	15		21		42		
New London	13		6		27		
Pomfret*							50
Stonington	13				44		
Windham*							85
Woodbury		15		37		35	44
Weighted Average	21	34	19	41	36	35	57

*Based on families

A final observation in evaluating the available data on membership rates relates to membership and gender. Table 2 and much of the other data only report male membership. Since the ratio of males to females in Connecticut for much of the colonial period is close to one, simply using the male data for the entire membership estimate might seem appropriate. However, in colonial Connecticut (as in most American churches) female members significantly outnumbered male members. Our archival data show that about fifty-eight percent of new members were female. This being the case, the actual membership was higher as a proportion of population than the data for males reported in Table 2.

Based on our understanding of the fraction of population eligible for membership, given data on membership in selected towns, and recognizing gender differences in membership, we conclude that in colonial Connecticut a substantial fraction of the relevant population were church members. This result is consistent with the predictions of the market model applied to the Connecticut establishment.

CONCLUSION

The available data on church membership in colonial Connecticut provide a valuable and valid resource for testing the market model of religion as applied to established churches. Our data show that established Puritan church new membership as a proportion

of colonial population rose steadily (albeit modestly) before the Great Awakening, and increased dramatically during it. Further, total church membership was often high in colonial Connecticut towns as a proportion of those potentially eligible for membership. The data also show only a slight decline in Puritan church new membership in the face of non-Puritan competition.

Economists start with certain propositions about human behavior and motivation and proceed to outline predictions based on the incentives and constraints in a given situation. In the case of the religious market, clergy in a centrally-controlled and taxed established church would be expected to be insensitive to church members. This is the situation described by Adam Smith for the Church of England. A careful examination of the colonial Connecticut establishment suggests an incentive structure that puts considerable pressure on clergy to respond to member preferences.

First, virtually all of the colonial Puritan congregations were founded by a relatively small number of individuals, often including a minister, with common religious views. The example of Milford First applies here. The founders can be thought of as entrepreneurs creating a new established congregation. The congregation was formed because of the common views held by the founders, and the clergy were part of that formation. The interests of clergy and members were one.

Second, once a congregation was founded, congregation members retained the authority to hire and fire clergy, vote on local congregation tax rates, and set clergy salaries. Later some of this power moved into the hands of the community at large. Thus the local congregation membership and community retained considerable power over clergy and so provided incentives to clergy much different than for clergy in the European establishments.

Third, congregation and community members could and did vote with their feet by moving away from communities with unacceptable ministers or doctrine. Such movement reduced the tax base of an existing congregation and must surely have been a concern for ministers.

Finally, even established congregations relied to a limited extent on pew sales and rentals and on donations (Olds 1994). These supplemental sources of support would obviously be affected by the ability of the minister to respond to the membership.

The colonial Puritan establishment was in important ways like a farm coop or housing condominium arrangement where members mutually agreed to be taxed or pay fees to support common goals, in this case the local minister and meetinghouse. This arrangement is much more responsive to demographic changes and popular preferences than an establishment where a centralized bureaucratic church administers religion, financial incentives for zealous clergy are minimal, and competition for adherents practically nonexistent. In Connecticut, competition for new members arose within an established framework.

The focus of this paper is on church membership and the effect incentives have on clergy behavior toward members. We have not examined the incentives of individuals to become members or, as mentioned early in the paper, the level of commitment of members. Both of these issues relate to the demand side of the religious market, to which we have given little attention. Our lack of attention is not, however, meant to suggest that these issues are unimportant.

In fact, any number of churches in general are, and the colonial Connecticut Puritan church in particular was attractive to members for reasons other than doctrinal characteristics. Individuals join churches to maintain or increase social status, to enhance well-being, and to receive other of what sociologists call compensators and what economists call valuable goods and services. Ellison and Sherkat (1995a) and Sherkat and Wilson (1995) provide a recent overview of the sociological perspective and Hull and Bold (1989) provide an economics view. Individuals can even join churches "semi-involuntarily" because of social pressure from various sources (Ellison and Sherkat 1995b). Certainly Puritan church members formed the social elite in colonial New England and individuals must have wanted to ally themselves with this elite. The restrictions on new membership prevented all of those who wished to join from doing so, however, while at the same time reinforcing the unique status and appeal of membership.

Those same restrictions on membership very likely raised the level of commitment of members and reinforced the strength of the Puritan church. As Iannaccone (1992, 1994) shows, strict churches are stronger than other churches and are better able to provide important collective goods to members. Puritan congregations required their members to demonstrate a level of commitment higher than most contemporary mainline congregations in the United States where membership is relatively unrestricted. Even more dramatic is the difference between the Connecticut establishment and established churches in, for example, the Scandinavian countries. As Hamberg and Pettersson (1994) note, membership in the contemporary Swedish established church is automatic at birth. It takes an effort on the part of an individual to relinquish membership in that church. Member attendance at services is optional. Clergy are part of a centralized state bureaucracy. Not surprisingly, the level of member religious commitment (measured in part by attendance) is low. The contrast to the Connecticut Puritan church is clear. Puritan church attendance was mandatory, but membership required a significant demonstrated level of commitment and was typically open only to adults with families.

Colonial Connecticut Puritan congregations likely encouraged in their members a relatively high level of commitment and provided members a variety of reasons to join other than pure doctrine. These two additional important factors reinforce the strength of the Connecticut establishment and are complementary to issues addressed in this paper. Clergy who relied on local support obviously would care that the church provided whatever compensators that encouraged members, especially strongly committed members, to join.

On the other hand, the Puritan church failed to expand beyond New England's borders and was not able to prevent entry by nonestablished competitors, particularly after the revolution. Historians use the term "Puritan tribalism" to describe the tightly knit New England communities centered on the church (Moran 1979, 1991, 1993). These communities and their churches exist even today and on each of the church's membership roles are descendants of the families present when the congregation was gathered. Our data on new membership show that the Puritan church did a good job of providing religious products to what eventually became a very narrow national market segment.

NOTES

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APPENDIX A

VARIABLE DEFINITIONS

Economy

Dummy variable set to one for years from the bottom of each economic cycle in the colonies to the top of the cycle. The variable equals zero for years from the top to the bottom of a cycle. The data were developed by John McCusker and Russell Menard (1985)

Great Awakening

Dummy variable set to one for 1741 and 1742.

New Members per 1000 Population

Estimated number of new members of Puritan congregations per one thousand population in Connecticut. Connecticut population is interpolated from decadal estimates of Connecticut white and African American population, U.S., Department of Commerce, Bureau of the Census (1975).

Nonestablished Congregations

The number of Separatist, Baptist, and Anglican (Episcopalian) congregations as compiled by Goen (1969).

Year

Annual observations numbered in sequence from 1 (1670) to 106 (1776).