Local Church Indebtedness and Local Church Vitality:
Will the Increase in Local Church Indebtedness
Over Past Decades Pay Dividends?

Between 1985 and 2009, local church indebtedness, adjusted for inflation, increased almost three-fold. Total local church indebtedness was only $152 per member in 1985 (in 2009 dollars) but increased to $502 per member by 2009 (again in 2009 dollars). Indebtedness as a percent of total local church expenditures was only 31.15% in 1985. By 2009, that percentage climbed to 61.91%. As indebtedness increased between 1985 and 2009, membership fell—from 9.2 million to 7.7 million. Total local church indebtedness for 2009 equals $3.8 billion.

The majority of our churches have no debt. In 2009, 76.5% of our local churches had no reported debt. The increase in total debt therefore can be attributed to a minority of our local churches. Presumably, the increased debt was incurred for the purpose of church growth. However, records indicate that many of our churches that incurred increasing levels of debt did not grow but actually declined in membership and worship attendance. Yet, many that incurred increasing levels of debt did grow, and some grew substantially. The purpose of this study is to determine the impact of debt on local church growth.

It is important to note that, from the perspective of lending institutions, loans to United Methodist churches have been quite safe. It is rare for any lending institution to foreclose on a United Methodist church. Even churches that experienced decreases in worship attendance in the presence of significant debt successfully managed their respective debt obligations. This study is not a study of local church foreclosures. Instead, it is a study of the relation between local church indebtedness and local church growth. Can one identify the conditions under which increases in debt were found to lead to church growth? Can one identify conditions in which churches would have grown had they expanded or refurbished facilities through increased indebtedness?

Method of Examination

To properly address the questions posed, one must first recognize that there are several measures of church growth, and there are multiple forces at work that would affect church growth. A widely accepted measure of church growth is average worship attendance. This is the measure selected for this examination.

Our interest in this examination is limited, and one must account for the other forces at work in order to isolate the effects of local church debt upon average worship attendance. Previous studies have identified several forces at work: changes in affinity populations surrounding the local church, changes in pastoral leadership, internal conflict within the church, changes in local church programming and staff, seasonal changes (e.g., Christmas and Easter), and national events (e.g., 9/11). The chosen method of examination is designed to account for most of these other forces.

Although the purpose of the examination is to identify the impact of changes in local church debt upon church growth, it is not appropriate to separate the effects of changes in local church debt and changes in facilities, because increases in debt are almost always related to expansions or

improvements in facilities.[1] Decreases in debt usually occur with scheduled payments toward existing debt obligations or significant payments to loan principal usually following debt reduction campaigns. Such decreases might affect average worship attendance, but their impact most likely occurs through changes in other budget items, such as programming or staff expenses. The impact from decreases in debt is most likely indirect rather than direct. In contrast, this examination focuses upon increases in debt that are related to improvements or expansions in facilities. However, the chosen method of examination provides some insight into the indirect effects of debt reduction.

The chosen method of examination is based upon multiple regression analysis, which is a well-recognized statistical tool used for this type of study. It begins with the consideration of a data file that contains records of average worship attendance among many churches over a long period of time. The other forces at work must be observed and recorded in order for multiple regression to account for their independent effects. For example, changes in the affinity population surrounding a local church must be recorded over all the years included in the study. Average worship attendance is recorded as an annual average so seasonal changes in worship attendance do not matter in this examination. End of year local church reports used in this study include expenditures on programming and staff, so multiple regression can account for these forces at work. The data files used in this examination include the name of the senior pastor in the local church, so the examination can account for changes in pastoral leadership.

How does multiple regression work? Without going into a mathematical presentation of its underlying calculations, it is useful to provide a simple example. Suppose one is interested in the impact of fertilizer on corn production. We know from other studies, that rainfall is one of the forces at work. Our interest is in fertilizer but one has to account for rainfall to measure the relation between fertilizer and corn production. To conduct the study using multiple regression, one must record annual corn production, pounds of fertilizer applied, and rainfall recorded during the growing season for a large number of farms. A data file is prepared that records total bushels of corn produced per acre, pounds of fertilizer applied per acre, and inches of rain for the entire growing season. In the regression equation, the variable, bushels of corn per acre, is "regressed" upon pounds of fertilizer per acre and inches of rain. The results from the regression contain two coefficients—one for fertilizer and one for rain. The regression coefficient for fertilizer is likely to be positive, as would be the regression coefficient for rain. The regression coefficient for fertilizer is the one of interest. It tells us two things. One, since it is positive, we learn that increases in fertilizer, given a fixed amount of rainfall, results in greater production. Two, it provides us with a magnitude. Suppose the regression coefficient equals 0.50. It tells us that with one additional pound of fertilizer per acre, one can expect an additional half a bushel of corn per acre produced. We have accounted for differences in rainfall so that we have a clean measure of the impact of fertilizer on corn production without the confounding effects of rainfall.

For this examination, we regress average worship attendance upon local church debt, programming expenditures, staff expenses, affinity population, and a host of other variables. The coefficient of local church debt will provide both direction and magnitude. If the coefficient of local church debt is positive, it tells us that increases in debt (and related expansions/improvements in facilities) promotes increases in average worship attendance, holding all other forces constant. Its magnitude will provide a measure of effect. There are several forms of multiple regression used in this examination.

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[1] There are instances in which a local church will acquire raw land without an expansion or improvement in facilities. While these instances do occur, they are believed to be relatively rare in comparison with the expansion or improvement in facilities.

Supporting Data

As mentioned above, the examination is supported with end-of-year local church reports. The time period under examination is 1990 through 2009—a period of 20 years. The data file includes over 33,000 local churches, but all 33,000 churches cannot be included in a regression analysis because of missing data.

The exact local address of most of the 33,000 churches has been recorded. This allowed us to collect demographic information describing the resident population surrounding every local church. Demographic information was obtained from Claritas—a Nielson company that provides demographic data to be used to estimate the size and composition of the resident population within a three-mile radius of every local church. Of particular interest is the affinity population of a congregation. The affinity population of an African-American congregation, for example, is the resident population of blacks within a 3-mile radius of the church. Previous studies found that changes in the affinity population of a church affect average worship attendance. Accordingly, changes in affinity populations must be taken into account.

United Methodist pension files were used to identify specific pastors appointed to specific local churches throughout the 20-year period of time. Unfortunately, all United Methodist pastors did not participate in a United Methodist pension program between 1990 and 2009. Therefore, we cannot identify pastors assigned to specific churches who did not participate in a pension plan. This is the single cause of most of the missing data for this examination. Fortunately, most churches were served by pastors who participated in a pension plan. Also, there are relatively few local churches with debt that are served by pastors who did not participate in a pension plan. In short, the study excludes from the analysis some churches, but these churches are unlikely to have significant debt and are of less interest to us in this examination.

Some churches have multiple pastors appointed, and our interest is in churches with no change in the appointed senior pastor. This examination must account of the effect of a change in the senior pastor appointment. The end-of-year reports include the names of senior pastors. This enables one to determine the years in which the same senior pastor is under appointment in a local church. This examination focuses upon those years in which the local church has the same senior pastor under appointment.

The pension data allows us to record the age and gender of the senior pastor. There is reason to suspect that the worship attendance response to increasing debt (accompanied by improvements/expansions in facilities) may depend, in part, upon the age and gender of the senior pastor. With regression, one can test for this potential influence.

Trends and Patterns

Between 1991 and 2009, 34.24% of the instances in which a local church expended funds for facilities reported an increase in the value of church property. Another 54.39% of the time, the value of

church property did not change.[2] The remaining 11.36% of the time, the value of church property actually decreased in response to increased facilities expenditures. This latter event likely reflects a repair that was not sufficient to return the property into its original state.[3] There may be some types of facility improvements that enhance worship attendance but are not reflected in changes in the value of the church property.

For the local church, there are two primary methods of financing improvements, expansions, and repairs in facilities: savings[4] and proceeds from loans. Over the past 20 years, only 1.26% of our churches failed to make use of either method of financing. A majority of 56.54% of our churches failed to incur any building debt, and only 1.42% of our churches failed to make use of savings to fund facilities improvement, expansions, or repairs.

On a year-to-year basis, expenditures from savings for improvements, expansions, and repairs in facilities were common. Out of the 20 years, the average number of years in which such expenditures took place equals 11.87—a majority of the time for the average church. Among the churches that initiated increased debt, 77.18% of those churches also expended funds from savings. Among these churches, the average expenditure from loans among churches using loans equals $237,451. The average expenditure from savings among these churches equals $99,276. The total average expenditure equal $336,727. Loan proceeds represents, on average, 70.52% of the total expended when both sources were used.

Between 1991 and 2009, total expenditures from loan proceeds equal $9,582,255,104. Total expenditures from savings equal $10,254,705,664. Over these years, total expenditures from both sources equal $19,836,960,768. Loan proceeds represent 48.31% of the total, and savings and capital campaigns represent 51.69% of the total—amazingly close as a whole. Yet, equal use of savings and loans for a particular local church is rare.

Table 1 presents several important patterns of year-to-year changes in the use of savings and the use of loans. The table presents patterns from a two-year view of local churches.   It presents the average worship attendance and the percentages of local churches found in each defined category. On a casual basis, it provides some insights into how our churches finance improvements, expansions, and repairs of facilities.

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[2] In some instances, it is likely that the value of the property was not updated in the end-of-year report when in fact the value of the property actually improved.

[3] It is possible that in some instances the value of facilities and property were reduced due to a new valuation conducted by local church trustees. A new valuation might have been encouraged or required by the insurance carrier providing coverage for the church.

[4] Savings, as used herein, refers to the use of accumulated funds and/or the proceeds of a current capital campaign.

Table 1
Key Patterns in Uses of Savings and Loans
1990 – 2009

Pattern	Building Expenditures		Building Debt		Percent Churches	Average Attendance
	Last Year	This year	Last Year	This year		
1	Positive	Positive	Positive	Positive	11.59%	246.3
2	Zero	Zero	Positive	Positive	2.06%	150.7
3	Positive	Positive	Zero	Zero	29.62%	84.2
4	Zero	Zero	Zero	Zero	22.16%	40.3

Pattern 1 represents churches that expended funds from savings each of the two years and carried building debt each of the two years. Pattern two represents churches that carried building debt both years but did not expend funds from savings either year. Pattern three represents churches that expended funds from savings both years but never had any building debt. Pattern four represents churches with no building debt and did not expend funds from savings.

Local churches with Pattern 1 represent 11.59% of all local churches with an average worship attendance of 246.3. These are our largest churches. There were only 2.06% of our churches represented in Pattern 2—a relatively rare pattern. Building debt was carried for both years, but no funds were drawn from savings. These are smaller churches, on average, with an average worship attendance of 150.7. The largest group of churches, following Pattern 3, represents 29.62% of our churches. For both years, funds were expended from savings, but the churches never carried any building debt. Average attendance in this group equals 84.2. The final pattern represents 22.16% of our churches. Nothing was pulled from savings, and the churches had no debt. Average attendance equals only 40.3—the smallest among the churches.

These four patterns provide illustrate some common patterns, but they do not illustrate the average sizes of the expenditures. To measure these expenditures, it is useful to identify patterns in which the local church initiates a new project in the second of two years. Table 2 presents two useful patterns.

Table 2
New Expenditures Using Savings and Loans

Pattern	Building Expenditures		Building Debt		Percent Churches	Average Attendance	Building Change	Debt Change
	Last Year	This year	Last Year	This year				
5	Zero	Positive	Zero	Positive	1.06%	135.8	44,738	122,668
6	Zero	Positive	Zero	Zero	10.80%	56.5	10,101	0

Pattern 5 represents churches that pulled funds from savings in the second year and initiated a building loan the second year. Both sources were used to finance the project. While using both sources is common, it is not so common to find local churches that start from a base of zero (zero pulled from

savings and no loans) and initiating a new project that requires both savings and loans. There were only 1.06% of the churches that followed this pattern. Average worship attendance equals 135.8—one of the larger groups of churches. The average size of expenditures from savings equals $44,738, and the average new debt equals $122,668. This is equivalent to a project that costs, on average, $167,405 with a "down payment" of $44,738 or 26.7% of the total. Churches tend to make relatively large down payments from savings when initiating a loan—more than the down payment for a new home owner. This may explain, in part, why church loans tend to be very safe loans for financial institutions.

Pattern 6 represents the church that initiates a project without the use of a loan. On average, these are smaller churches with an average worship attendance of 56.5. The average size of the project is quite small--$10,101. This pattern represents 10.80% of all local churches.

In summary, local churches tend to avoid loans as a means of improving, expanding, or repairing facilities, but those that do are typically small. The larger churches rely upon loans. The use of loans is commonly accompanied by a significant use of savings that leads to smaller loans and reduces the risk to the lender. There is a strong, positive correlation between existing debt and the size of the church. Larger churches typically carry debt.

Average Worship Attendance and Debt

Church leaders are aware of the substantial decline in membership in the United Methodist Church in the U.S.—decreasing by 13.3% between 1990 and 2009. Worship attendance also took a hit—decreasing 9.8% over the same period. Figure 1 illustrates the path of decline in worship attendance.

Figure 1
Total Worship Attendance
United Methodist Church in the US
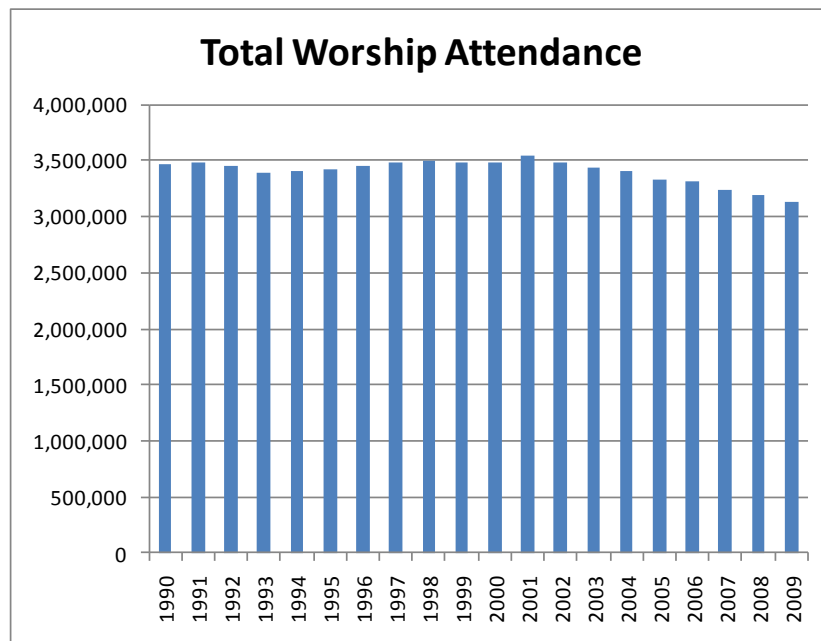
The most rapid decline occurred between 2001 and 2009. In fact, worship attendance was actually greater in 2001 than it was in 1990. This particular view of history leads one to question. What triggered the downturn in average worship attendance in 2002? Was it related to the consequences of local church debt?

Most church debt reflects the existence of an earlier building project for which local church funds at the time were insufficient to complete the project. A loan from a financial institution was necessary to complete the project. It is therefore improper to examine only the impact of increasing debt without accounting for the benefits of the building project.

Building projects can be separated into three groups: expansions of facilities, improvements in existing facilities, and repairs of existing facilities. As one observes an increase in debt within a local church, one can be assured that the project belongs in one or more of these three groups.

The first and second of these three groups represent improvements in facilities, and most improvements are intended to enhance local church growth. Efforts to merely bring a damaged facility back to its fully functioning state belong to the third group. A church must replace the roof to prevent further damage. This third group may include instances in which repairs do not fully return the building to its original condition. A fire destroys the original stain glass windows, and there are insufficient funds to replace them with equal quality craftsmanship. In these instances, average worship attendance could decline due to the deterioration in facilities but not by as much had the repair project never been completed. In short, there are instances in the third group in which, with an increase in local church debt, there is no expectation of increasing worship attendance.

There is a time dimension to loans and building projects. Loans can be amortized over two or three decades. An improvement in a building might not have as long-lasting impact. In some instances, a local church may be carrying debt as a consequence of an earlier building improvement. In time, the impact of the improvement in facilities will have been fully realized. The on-going debt service payments could outlive the benefits of the project. These local churches in time may face lost opportunities as the continuing debt service payments limit its ability to fund key programs or new staff. In the short run, average worship attendance is enhanced. In the long run, the continuing debt load may prevent the local church from either growing or avoiding decline.

Between 1990 and 2009, most churches spent funds on their facilities. Most funded these projects without the use of loans. Less than 25% of our local churches had debt over the period. In 2007, half of the total debt outstanding among all churches was held by only 498 local churches or only 1.5% of our churches. Although few in number, on average these churches are quite large. Yet, these large churches account for a significant portion of total worship attendance in our denomination. For this reason alone, they are important.

Total debt incurred among our local churches (adjusted for inflation) significantly increased over the period. Figure 2 demonstrates this path from 1990 through 2009.

Figure 2
Total Debt Among Local Churches
**Adjusted for Inflation (2009 Dollars)**
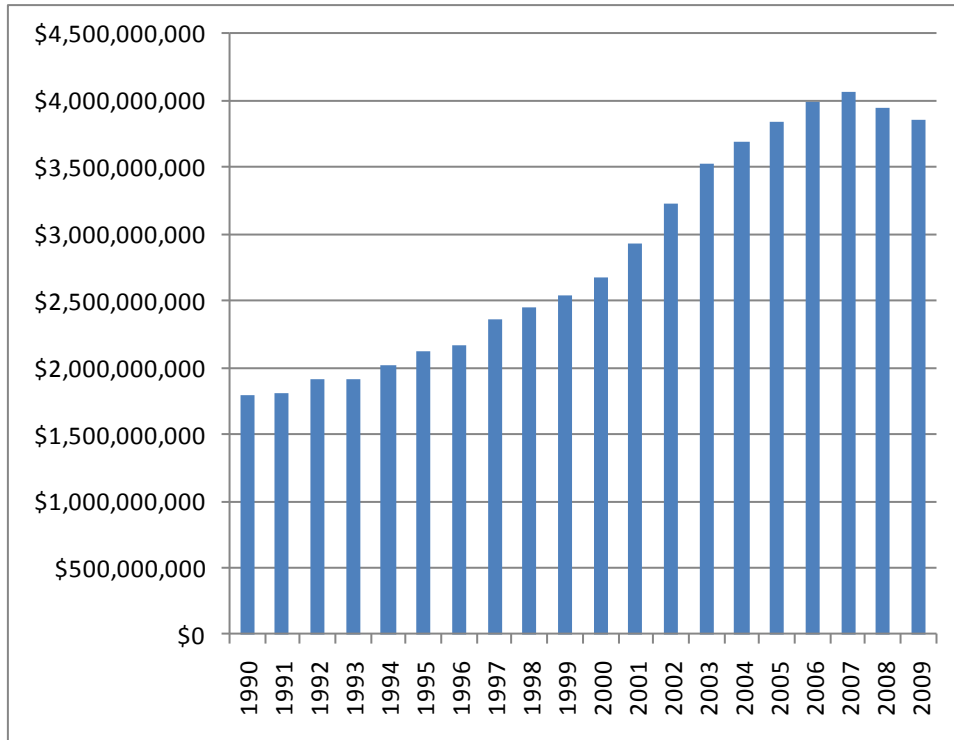
Between 1990 and the peak in 2007, total debt increased 115%, reflecting an increase in debt of over $2 billion. Between 2001 and 2009 when average worship attendance was in decline, total local church debt, adjusted for inflation, increased rapidly through 2004, reached its peak in 2007, and then declined during the recent recession. In 2009, total indebtedness stands at $3.8 billion. Through a casual examination of trends in debt and trends in average worship attendance, there is no clear relation between the two.

During the recent downturn in our economy and the debt crises faced by several European countries, leaders have compared existing national debt to current GDP as a means of measuring the financial pressures placed upon national economies. In the same fashion, one can compare existing local church debt to total local church expenditures as a measure of financial pressures placed upon our local churches. Figure 3 presents the history of total local church debt as a percentage of total local church expenditures.

Figure 3
Total Local Church Debt as a Percentage of
Total Local Church Expenditures
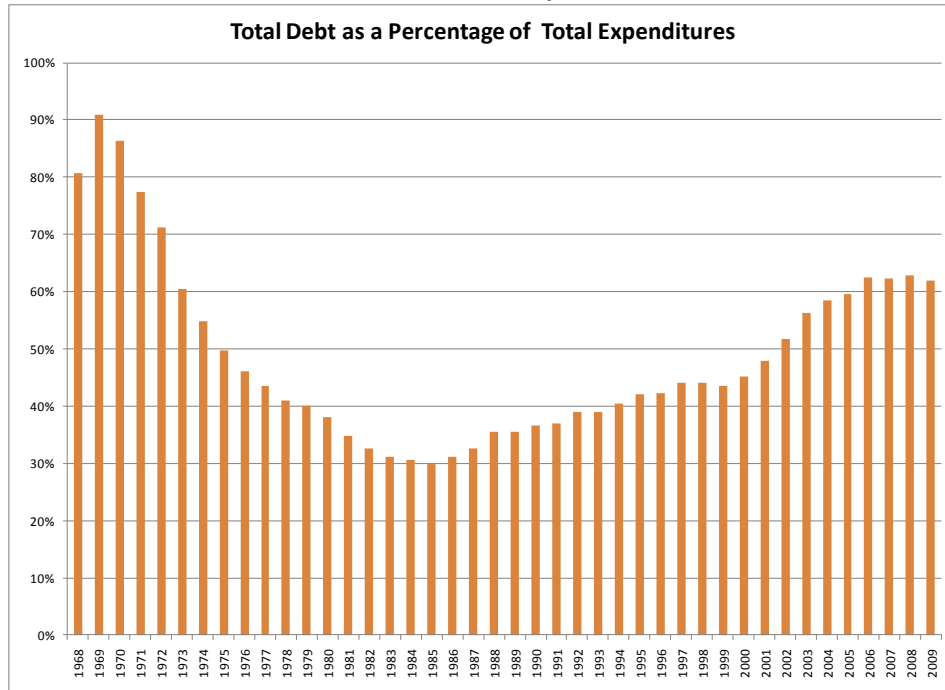
The historical pattern is interesting in that the largest percentages occurred about the time of the merger and the establishment of the United Methodist Church in 1968—reaching a peak of 90.9% in 1969. The lowest point occurred in 1985 when the percentage fell to 29.9%.

There does not appear to be a pattern that would help explain the decline in average worship attendance beginning in 2002. The percentage did increase rapidly between 1989 and 2006, but it leveled off after 2006 when average worship attendance continued to decline. There is no clear relation between the path of average worship attendance and the path of this percentage after 2001.

Methods

Due to the nature of the end-of-year reporting among our local churches, one can identify the expenditure of funds from loans only when the loan balance increases from one year to the next.[5] Because of this reporting method, identification of expenditures from loans can only be determined by comparing loan balances from year to year. Therefore, expenditures in 1990, the first year under examination, could not be used because of the inability to observe the previous year. Thus, the

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[5] Loan balances can increase, remain constant, or decrease. Decreases in loan balances reflect the payment of principle. Constant loan balances reflect the payment of interest only. Increases in loan balances either reflect the use of loan funds or the accumulation of interest which is added to the loan balance. To identify the use of loan funds for expenditures, we eliminated from the calculations any decreases in loan balances or balances remaining constant. To exclude increases in loan balances due to the non-payment of interest, we excluded increases that represented a 10% or less growth in the loan balance.

comparisons of expenditures from loans and expenditures from savings and capital campaigns can only be accomplished over the years 1991 through 2009.

The examination of potential impact of expenditures on facilities and average worship attendance requires special care. One of the major hurdles in such an examination is the "chicken and the egg" problem. Do increases in worship attendance encourage increases in facilities expenditures, or do increases in facilities expenditures encourage increases in worship attendance?

One effective method of handling the "chicken-and-the-egg" problem is to handle it with time lags. We can observe shifts in spending on facilities in year one and measure worship attendance in year two. Worship attendance in year two could not have affected the spending on facilities in year one. With this construct, one can lag the possible effect any number of years. The method chosen incorporates both a one-year lag, a two-year lag, and a three-year lag. Comparisons of the results are informative.

Another problem that must be handled is in isolating the effect on worship attendance from a pastoral change. Most church leaders understand that a pastoral change can have a positive impact or a negative impact on worship attendance. At times, this impact can be quite large—so large that it dominates the positive impact of facilities improvement. To account for the pastoral change impact on worship attendance, the examination focuses only upon local church histories during the time that there was no change in the appointment of the senior pastor.

The regression equations used this examination are designed to determine if local church debt is related to average worship attendance and, if so, what is the strength of the relation? To properly isolate the potential effect of local church debt on average worship attendance, one must account for other forces that are known to affect worship attendance.

The results are based upon regression equations which include all qualified local churches over the 1991 to 2009 period. Local churches are qualified if the senior pastor was or is a participant in one of the pension programs and is thus included in the pension files. The street address of each church is required so that the demographics of the surrounding resident population can be recorded. Finally, the church must have filed an end-of-year report which typically means that it is holding services and is chartered. Multiple regression equations are used to examine the impact of debt upon average worship attendance. Each regression equation contains several variables used to account for forces suspected of influencing average worship attendance.

The method examines all churches for which sufficient information has been assembled. The task at hand is to examine the results from churches funding facility improvements, expansions, and repairs from savings and from loans. The regression equations are designed to identify and separate confounding forces at work so that the impact of facility funding can be measured.

The regression equations are designed to explain differences in worship attendance across churches at a point in time and across time for each church. Included in each regression are variables designed to account for forces known to affect worship attendance. These forces are lagged in time. For example, attendance this year is examined in view of expenditures on facilities from savings last year. Variables included in the regressions to account for the forces at work are as follows:

Debt   Recorded on end-of-year local church reports. An increase in local church debt is measured by the difference between end-of-year loan balances in the preceding year and the current year. Nominal increases in debt are disregarded. All decreases in debt are disregarded. Increases are lagged one or two years.

Building   Recorded on end-of-year local church reports. This figure represents the expenditures on facilities funded through savings and capital campaigns. Proceeds from loans are not included. Expenditures are lagged one or two years.

Program   Recorded on end-of-year local church reports. This figure represents local church expenditures on programs, such as music, youth, children, VBS, etc. It does not include any staff salaries. Expenditures are lagged one or two years.

Staff   Recorded on end-of-year local church reports. This figure represents local church expenditures on non-clergy staff salaries and benefits. Expenditures are lagged one or two years.

Years   Recorded from pension files and end-of-year church reports. This represents the number of years the senior pastor has been appointed to the local church for that particular year.   This figure is used to account for pastoral leader changes.

Male   Recorded from pension files and end-of-year local church reports. This is a binary variable (values of zero and one) that registers the gender of the senior pastor.

Age   Recorded from pension files and end-of-year local church reports. This registers the current age of the senior pastor.

Affinity_3   Recorded from Claritas data. This measures the size of the affinity population of the local church within a 3-mile radius of the church street address.

There are other forces at work. The end-of-year reports can be used to observe the racial/ethnic composition of the congregation. Local churches are categorized as "white," "African-American," "Hispanic," or "Asian." Category assignments are based upon the majority composition of membership, as reported in end-of-year local church reports. Categories are used to define the affinity population for each local church. Claritas data are used to measure changes in the size of affinity populations surrounding local churches. Table 3 presents the first set of results from the regression equations.

Results

The following tables present the essential results from the regressions. There are other statistical measures excluded from these tables but are available if requested. Each table includes the names of the variables designed to account for the forces at work, regression coefficients for each of the variables, the Z-Values which measure statistical significance, the number of churches used for the regression, and three measures of R-square.

The regression coefficients measure the relation between average worship attendance and the variable in question. It matters whether the regression coefficient is positive or negative. The Z-Value indicates whether one can properly have confidence in the result. Typically, if the Z-Value is greater than 2.00 (in absolute value), one has confidence in the result. Almost all of the regression coefficients are statistically significant (Z-Values greater than 2.00).

The three measures of R-square of important. Each R-Square could have a value ranging from zero to 1.00. A large R-square indicates that the chosen set of variables in the regression explain a large percentage of the observed changes in average worship attendance. In these types of examinations, one should never expect an R-square to be equal to the maximum value of 1.00. There will always be random, unobservable events that affect average worship attendance that cannot be explained through regression.

The "within" R-square measures the extent to which the regression explains changes in average worship attendance within a church across time. The "between" R-square measures the extent to which the regression explains changes in average worship attendance across churches at a point in time. The "overall" R-square measures the extent to which the regression explains changes in average worship attendance in total—over time and across churches.

Table 3 presents the first set of results. It is based upon only those churches with predominately white congregations and churches for which the particular senior pastor had served the local church from one to ten years at the time changes in the variables were observed. The same senior pastor had to have been serving when worship attendance was also observed—in this case, one year later.

Table 3
Regression Results: One-Year Lag
White Congregations
Senior Pastor Tenure: 1 to 10 years
Adjusted for Inflation

Variables	Coefficients	Z Value
Debt	0.0000043	11.61
Savings	0.0000505	31.69
Years	1.808261	37.74
Program	0.0014946	116.32
Staff	0.0010742	191.30
Affinity	0.0009462	62.36
Male	10.57004	34.60
Age	-0.502584	-39.57

The results in Table 3 are informative. The regression coefficient for Debt is positive and statistically significant. It indicates that, indeed, increases in facilities expenditures through loan proceeds does result in increases in average worship attendance. Although significant, the effect appears small. An increase in $1 million in facility expenditures from loan proceeds leads to an increase in average worship attendance of 4.30 attendees, holding all else equal. The size of this coefficient, however, is not that surprising.

Any expenditure on facilities has a long-term effect. The gain presented in the coefficient is a one-year gain. Yet, the improvement in facilities lasts over many years. The total impact of the expenditure has to include the future years of gain. If the improvement were to last 20 years and the annual gain does not deteriorate (which is probably unrealistic), the impact of the $1 million expenditure would result in a total gain in attendance of 86.0—spread over 20 years.

The regression is designed to measure the effect of an increase in facilities expenditures through loan proceeds while maintaining existing levels of programming expenditures and staff compensation. The typical path taken by many churches is a path that includes enhancements in programs and perhaps staff in order to fully utilize the additional facilities. In practice, the gain in attendance, when improvements in facilities are combined with increases in funding for programs and perhaps staff, can be substantial.

The coefficient of Building represents the worship attendance response to facilities expenditures from savings or a capital campaign.   The coefficient is positive and statistically significant which means that such expenditures lead to increases in worship attendance. Its magnitude indicates that with a $1 million expenditure of this type the local church would expect a 50.5 increase in average worship attendance, all else being equal. Over a 20 year period, under the same assumptions, total attendance would predictably increase by 1,010 attendees, spread over the 20 years. It is notable that this coefficient is approximately ten times greater than that of Debt. One the surface, it suggests that the worship attendance response to funding through savings is much more effective than funding through borrowing. Yet, there is an alternative explanation that may be more accurate.

The churches engaging in expenditures from loans are those churches that qualify and are convinced that all future loan payments will be met. There are churches that might not quality nor have the confidence that the loan payments will be paid throughout the tenure of the loan. These are different churches. The former tends to be the larger churches. The latter tend to be the smaller churches.

The Law of Diminishing Returns may be at work. If church facilities are valued at $500,000, a $100,000 expenditure on facilities represents a substantial improvement. If church facilities are valued at $5 million, the $100,000 expenditure represents a much smaller improvement. This could explain the ten-fold difference in effect.

Additionally, the loan proceeds are often used for different purposes than the proceeds from savings. Most of the funding through savings occurs when the church does not simultaneously use funds from loans. The average annual amount of expenditures from savings and capital campaigns, when used, equals $24,528. The average expenditure from loans, when used, equals $225,248. Recall that the total expenditures from both sources of funds is about equal--$9.6 billion from loans and $10.2 billion from savings and capital campaigns.

The coefficient of years is positive an also statistically significant. The regression equation is based upon church reports for which there is Worship attendance tends to increase when the senior pastor has been appointed for a longer period of time. Since this is an average response, embodied in the coefficient, there will always be churches for which longer stays increase average worship attendance and churches for which longer stays decrease worship attendance.

The coefficient of program is also positive and statistically significant. This is a particularly important result in that it demonstrates the effectiveness of program expenditures. The coefficient indicates that, on average, a $1,000 additional expenditure on programs results in a gain in worship attendance of 1.5 attendees.

The coefficient of staff compensation is also positive and statistically significant. Consistent with other studies, a $1,000 increase in staff compensation results in an increase in average worship attendance of 1.1 attendees—slightly smaller gain in attendance had the $1,000 been spent for programs.

Average worship attendance tends to be greater when the senior pastor is a younger male. This result may reflect the fact that female pastors, on average, serve smaller churches as do older pastors.

The regression coefficient of affinity_3 registers the impact of demographic changes in the population surrounding the local church. Earlier studies demonstrate the importance of affinity population changes on average worship attendance. It is therefore important to account for this impact in order to identify and measure the impact of facility funding on worship attendance. The result indicates that with a 10,000 person increase in the affinity population among white churches promotes a 9.5 person increase in average worship attendance.

The "within" R-square is equal to 0.1548. These selected variables explain 15.48% of the variation in average worship attendance from year-to-year within the average church. Obviously, there are other forces at work that one cannot observe. We also know that some of the variation is due to changes in reporting methods. For instance, one year the church might exclude members in the choir at

the later worship service who had been in attendance during an earlier service. In another year, these choir members might be counted twice. Given these small discrepancies, the 15.48% "within" R-square is reasonably large.

The "between" R-square is equal to 0.7129—a relatively large figure.   As one compares average worship attendance across churches at a point in time, the regression explains 71.29% of the variation. This is a quite large R-square and supports considerable confidence in these results.

The "overall" R-square equals 0.6399. This captures the explanatory power of the regression including the over-time changes and across-churches changes. The 63.99% is a relatively large figure for these types of examinations.

Tables 4 and 5 below present the results from two regressions. Each is similar in design to that of Table 3 but using two-year and three-year lags rather than a one-year-lag. The purpose of this regressions is to consider the longer-term effect of facilities expenditures. The average worship attendance is observed two years and three years after the changes in debt, program expenditures, expenditures on staff, etc.

Table 4
Regression Results: Two-Year Lag
White Congregations
Senior Pastor Tenure: 1 to 10 Years
Adjusted for Inflation

Variables	Coefficients	Z Value
Debt	0.0000054	12.62
Savings	0.0000636	31.56
Years	2.146495	33.14
Program	0.001433	90.55
Staff	0.0011243	159.78
Affinity	0.000854	49.44
Male	12.53574	28.83
Age	-0.6512883	-35.48
Number of Churches		22,594
Within R-Square		0.1286
Between R-Square		0.7069
Overall R-Square		0.6354

Table 5
Regression Results: Three-Year Lag
White Congregations
Senior Pastor Tenure: 1 to 10 Years
Adjusted for Inflation

Variables	Coefficients	Z Value
Debt	0.0000050	10.17
Savings	0.0000673	26.32
Years	2.266954	25.53
Program	0.001314	65.99
Staff	0.0012609	138.63
Affinity	0.0007624	37.62
Male	16.22079	24.94
Age	-0.8180618	-29.21
Number of Churches		21,160
Within R-Square		0.1078
Between R-Square		0.6937
Overall R-Square		0.6264

Table 6 presents the summary results from the use of a one-year lag, a two-year lag, and a three-year lag.

Table 6
Summary of Regression Results: Differing Lags
White Congregations
Senior Pastor Tenure: 1 to 10 Years
Adjusted for Inflation

	1-Year Lag	2-Year Lag	3-Year Lag
$1 million Expenditure			
Loan	4.3	5.4	5.0
Savings	50.5	63.6	67.3
$10,000 Expenditure			
Programs	14.9	14.3	13.1
Staff	10.7	11.2	12.6
10,000 Affinity Growth	9.5	8.5	7.6
Senior Pastor: Add 1 yr	1.8	2.1	2.3

The table provides the calculations from the regression coefficients in the three previous tables. The $1 million expenditure lines (Loan and Savings) present the change in average worship attendance resulting from a $1 million expenditure on facilities from loans and from savings. The $10,000 expenditure lines (Programs and Staff) present the change in average worship attendance resulting from a $10,000 expenditure on programs and on staff. The 10,000 affinity growth presents the change in average worship attendance from an increase of 10,000 in the affinity population surrounding the church. The Senior Pastor: Add 1 yr line presents the change in average worship attendance related to a one-year extension in the pastoral appointment.

The 1-Year Lag column presents the projected change in average worship attendance one year after the changes in each of the listed variables (loan, savings, programs, staff, affinity population, and senior pastor). For example, an expenditure of $1 million from loan proceeds is expected to results in an increase of 4.3 attendees in worship, one year after the expenditure. The 2-Year Lag column is similar except for the fact that the 5.4 figure represents the increase in attendees in worship two years after the expenditure. The 5.0 figure in the 3-Year Lag column represented the predicted increase in attendees in worship three years after the expenditure.

These results illustrate the important point that some effects grow in time and others diminish in time. The expenditure of $1 million from loans is expected to lead to an increase in worship attendance of 3.7 in one year, 5.4 in two years, and 5.0 in three years. That is, at least over three years after the expenditure, the effect upon worship attendance increases with time.   A $1 million expenditures from savings also increases with time.

The impact of an increase of $10,000 in programs remains relatively flat over time—from 13.6 in year one to 13.1 in year three. A $10,000 expenditure in staff compensation increases slightly over time—from 10.6 in year one to 12.6 in year three.

The previous regression results are all based upon predominately white congregations. Table 7 below presents the results based upon predominately African-American congregations.

Table 7
Regression Results: One Year Lag
African-American Congregations
Senior Pastor Tenure: 1 to 10 years
Adjusted for Inflation

Variables	Coefficients	Z Value
Debt	-0.0000033	-0.9
Savings	0.000191	6.61
Years	1.796981	7.45
Program	0.0018305	21.97
Staff	0.001828	43.74
Affinity	0.0001239	7.1
Male	7.499019	5.16
Age	-0.6019736	-8.84
Number of Churches		1,332
Within R-Square		0.1414
Between R-Square		0.7727
Overall R-Square		0.6411

In contrast to the results from the analysis of white churches, the evidence fails to indicate a statistically significant relation between facilities expenditures through loans and average worship attendance. The coefficient of Debt is not statistically significant. In contrast, the coefficient of building is positive and statistically significant.

The predicted effect from an expenditure from savings is quite large. A $100,000 expenditure from this source results in a predicted increase in worship attendance of 19.1 attendees. This result is about 3.8 times larger than that found among white congregations. Recall that the total effect would be considerably larger when accounting for the multiple years of attendance growth.

As with the previous results, average worship attendance is greater when the senior pastor has more years in the appointment. An additional year in the appointment results in a 1.8 attendee increase in worship attendance. Among white churches, the gain is predicted to be 1.8 attendees.

The coefficients of both programs and staff are considerably larger than those reported among white churches. The effect of an increase in program expenditures among African American churches is 60% greater than the effect among white churches. The effect of an increase in staff expenditures is over twice the size of the effect among white churches.

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Similar to the results from the examination of white churches, worship attendance is greater when the senior pastor is male and relatively young.   This, again, may reflect the fact that the young, male senior pastor is more likely to be appointed to the larger church.

The predominately African-American congregation, like the white congregation, responds to changes in the affinity population. However, as with the earlier studies, the white congregation is more responsive to affinity population growth than the African-American congregation. A 10,000 person increase in the affinity population surrounding a white congregation results in a 9.5 increase in average worship attendance. For the African-American congregation, a 10,000 person increase in its affinity population results in a 1.2 increase in average worship attendance.

There is a strong conviction among church leaders that the capabilities of the senior pastor are critical in the determination of the outcome. Although we cannot conduct a personal evaluation of pastors, we can observe the time the senior pastor has spent with the congregation before and after the funding event. To consider this issue, two additional regressions were conducted. The first limits the analysis by including only those churches for which the senior pastor has served from between five and 14 years. The second limits the analysis by including only those churches for which the senior pastor has served from between one and four years. The comparison of the results provides a basis for understanding the impact of longer senior pastoral appointments on the results from facility expansions and improvements.

Table 8 presents the results among churches with senior pastor tenures of one to five years.

Table 8
Regression Results: One Year Lag
White Congregations
Senior Pastor Tenure: 1 to 4 years
Adjusted for Inflation

Variables	Coefficients	Z Value
Debt	0.0000022	4.75
Savings	0.0000455	22.06
Years	1.198691	13.51
Program	0.0014285	94.9
Staff	0.0010564	161.22
Affinity	0.00093	59.14
Male	9.904621	33.23
Age	-0.441349	-35.6
Number of Churches		23,430
Within R-Square		0.1019
Between R-Square		0.7037
Overall R-Square		0.6321

There are several strong similarities between these results in Table 8 and the results presented in the previous Table 7. All of the coefficients are of the same size and statistically significant—meaning that the directions of impact from each of the identified forces are the same. However, there are differences that will be explained below.

Table 9 presents the results from the examination of churches with senior pastors with 5 to 14 years in appointment.

Table 9
Regression Results: One Year Lag
White Congregations
Senior Pastor Tenure: 5 to 14 years
Adjusted for Inflation

Variables	Coefficients	Z Value
Debt	0.0000068	9.16
Savings	0.0000568	24.86
Years	2.641603	25.38
Program	0.0016466	85.33
Staff	0.0014844	182.02
Affinity	0.0006143	31.18
Male	23.61266	26.19
Age	-0.8637343	-22.65
Number of Churches		19,893
Within R-Square		0.2495
Between R-Square		0.7759
Overall R-Square		0.7086

The results in Table 13 are also similar to those presented in Table 10 and also those presented in Table 12 above—senior pastors with 1 to 4 years in the appointment.

Table 10 presents a summary from the previous tables, indicating the change in average worship attendance associated with the more important forces at work.

Table 10
Summary of Regression Results
Differing Tenures of Senior Pastors

	White	White
	Sr. Past: 1-4	Sr. Past: 5-14
$1 million Expenditure		
Loan	2.2	6.8
Savings/Campaign	45.5	56.8
$10,000 Expenditure		
Programs	14.3	16.5
Staff	10.6	14.8
10,000 Affinity Growth	9.3	6.1
Senior Pastor: Add 1 yr	1.2	2.6

The table provides the calculations from the regression coefficients. The $1 million expenditure lines (Loan and Savings/Campaign) present the change in average worship attendance resulting from a $1 million expenditure on facilities from loans and from savings and capital campaign funds. The $10,000 expenditure lines (Programs and Staff) present the change in average worship attendance resulting from a $10,000 expenditure on programs and on staff. The 10,000 affinity growth presents the change in average worship attendance from an increase of 10,000 in the affinity population surrounding the church. The Senior Pastor: Add 1 yr line presents the change in average worship attendance related to a one-year extension in the pastoral appointment.

As explained above, facility funding from savings and capital campaigns have a greater impact upon average worship attendance than funding from loans. We believe the differences are due to the differences in the size of the expenditure relative to the beginning value of the church property. We do not believe that funding from savings and capital campaigns for some unknown reason encourages worship attendance more than had the funding come from loans, all else being equal.

It is notable that the change in average worship attendance is greater among churches served by senior pastors with longer appointments. From loans, the change in average worship attendance is 2.2 for the 1-4 year senior pastor and 6.8 for the 5-14 year senior pastor. The pattern is similar in direction but not in size for expenditures from savings and capital campaigns. The change in average worship attendance is 45.5 attendees for the 1-4 year senior pastor and 56.8 for the 5-14 year senior pastor. Perhaps the congregation is better able to make productive use of the facility improvements when there is a stronger connection between congregation and senior pastor.

The impact of an increase in funding for programs and staff is greater among churches with pastors having the longer tenures in an appointment. In fact, the gain from a $10,000 supplement to programs is 15.3% greater if the pastor has the longer tenure. The gain from a $10,000 supplement to staff is 40.5% greater if the pastor has the longer tenure. An additional year of service from the senior pastor results in an increase in average worship attendance of 2.6 if the pastor has the longer tenure, compared to 1.2 if the pastor has the shorter tenure.

The church response to a change in the affinity population is particularly important. A growth in the affinity population of 10,000 results in an increase in average worship attendance of 6.1 if the pastor has the

longer tenure and of 9.3 if the pastor has the shorter tenure. While this has a negative connotation toward the longer-tenured pastor in the presence of increasing affinity populations, the longer-tenured pastor is best positions where affinity populations are declining. The result indicates that a church loses only 6.1 in worship attendance with a 10,000 decrease in affinity population and with a pastor has the longer tenure. With the pastor with the shorter tenure, the church loses more in attendance—9.3. This represents a 34% greater decline in worship attendance. Moving toward longer tenured appointments in geographic areas with declining affinity populations appears to be an astute policy.

Gains and Losses in Worship Attendance

It is important to note that the regression coefficients represent average responses. With any average, there will be individual elements above the average and below the average. With the assembled data, it is possible to identify those churches, with the expenditure of funds from loans, that actually gained attendees in worship and those churches that lost attendees in worship. By identifying these groups of churches, it is possible to determine why some gained and some lost.

Table 11 presents the summary of the number of churches in each resulting group: those that gained, those that lost, and those with no change in worship attendance. All of the churches in Table 40 reported an increase in expenditures from loans.

Table 11
Changes in Average Worship Attendance
Churches with Expenditures from Loans
White Congregations
Senior Pastor Tenure: 1 to 14 years

	One-Year Lag		Two-Year Lag		Three Year Lag	
Total Churches	19,766		18,160		17,013	
Attendance Gains	9,505	48.09%	9,783	53.87%	10,277	60.41%
Attendance Losses	8,772	44.38%	9,305	51.24%	9,018	53.01%
No change	1,489	7.53%	678	3.73%	471	2.77%

Unfortunately, there were many churches reporting decreases in average worship attendance following expenditures from loans. One year after the expenditure, 48.09% reported attendance gains, 44.38% reported attendance losses, and 7.53% reported no change in attendance. Two years after the expenditure from loans, 53.87% reported attendance gains, 51.24% reported attendance losses, and 3.73% reported not change in attendance. After three years, 60.41% reported attendance gains, 53.01% reported attendance losses, and 2.77% reported no change in attendance.

As time passes, a church is more likely to experience attendance gains—from 48.09% to 60.41%. Likewise, as time passes, a church is more likely to experience attendance losses—from 44.38% to 53.01%. With an increasing time lag, the likelihood of no change in average worship attendance decreases—from 7.53% to 2.77%.

Of primary importance, one must attempt to understand why some churches experience gains in worship attendance and others experience losses. Those gaining outnumber those experiencing losses, but the likelihood of a loss is significant.

The question is partly answered by an examination of mean values of the variables used in the regressions. Table 12 presents these mean values for each of the three groups of churches: those gaining attendees, those losing attendees, and those with no change in attendees.

Table 12
Mean Values
White Congregations

	Gains	Losses	No Change
Debt	165,281	110,550	83,799
Savings	61,797	39,307	22,237
Programs	794.0	-418.6	49.8
Staff	3,192.0	638.1	589.9
Affinity	25.8	-85.0	-64.6
Male	87.2%	85.6%	82.1%
Age	47.9	50.0	49.2

These results provide considerable evidence in addressing the key question: In response to an increase in expenditures from loans, why does worship attendance increase in some churches and decrease in others?

Note that for those gaining in attendees, the average increase in expenditures from loans equals $165,281, accompanied by an increase in expenditures from savings of $61,797. Recalling the regression results, we now understand that increases in expenditures for programs and staff enhance worship attendance. Churches can bolster the gains from expenditures from loans by increasing program and staff expenditures simultaneously. Notice that the average increase in programming expenditures for churches with gains equals $794 and churches with losses actually reduced program expenditures by $419. Those with no change in attendance increased programming expenditures by $49.80. It appears that part of the reason for losses in attendance is a reduction in expenditures for programs.

Further, churches with gains increased expenditures for staff by $3,192 while churches with losses increased expenditures for staff by only $638. Churches with no change in attendance increased expenditures for staff by $590. It appears that part of the reason for losses in attendance is a quite modest increase in expenditures for staff.

Another reason for attendance losses is the location of the church. Regression results indicate that changes in affinity populations affect worship attendance. The average change in affinity populations among churches with attendance gains equals 25.8 persons. Among churches with attendance losses, affinity population changes equal -85.0 persons. Churches reporting no change in attendance had an average change in affinity population of -64.6 persons.

These results indicate that a local church can partly offset the effect of losses in affinity populations through improvements in facilities, but there are limits. Notice that the average expenditure from loans among those with no change equals $83,799, compared to that among churches with losses of $110,550. The difference in expenditures is not that large. It suggests that to offset the effects of a larger decreases in affinity populations, the investment in facilities increase with the magnitude of the decline in affinity populations.

Finally, churches with gains in attendance were more likely to appoint younger male senior pastors than churches with losses in attendance. This effect, however, is relatively small.

In summary, primary reasons for decreases in worship attendance following an expenditure from loans are the adverse effects of other local church decisions and changes in the demographics surrounding the church. To a large extent, decreases in worship attendance can be avoided, but it requires an adjustment in the expenditure of funds. In many instances, average worship attendance can increase in the midst of moderately decreasing affinity populations with 1) more modest expenditures from loans and savings, more aggressive expenditures for programs, and perhaps less aggressive expenditures for staff. However, conditions will differ, but the regression equations provide a blueprint for improved outcomes. There are locations for which affinity populations are decreasing so rapidly that additional expenditures form loans can only reduce the rate of decline in worship attendance.

Missed Opportunities

The regression results identify the major forces that affect worship attendance during those times in which there is no change in the appointed senior pastor. Some of these forces are under the control of the local church, such as expenditures on facilities (debt and savings), program expenditures, and expenditures on staff. Some forces are determined through the appointment of the senior pastor (gender, age, and length of appointment). The final factor identified in the regression is the change in the affinity population. This is outside the control of the local church and the appointment process.

In reviewing the history of our local churches, it is clear that opportunities for growth were present for many churches, and some of those opportunities were addressed. Others were perhaps missed. There were many church locations in which affinity populations increased significantly, but there was little or no growth in these local churches. From a district or annual conference, some of these opportunities could have been addressed through new church starts, but to turn around the denomination some growth must come from existing churches. The best opportunities exist where there are increases in affinity populations.

This examination focuses upon the relation between expenditures on facilities average worship attendance. Although growth can be achieved through increases in programming expenses and expenditures on staff, maintenance and improvement in facilities, in many instances, are necessary in some cases. On average, such expenditures also lead to increases in worship attendance under the right conditions.

The extent to which our churches have spent significant funds on facilities under the best of conditions is a difficult question. One would hope that the local church would improve or expand its facilities sometime over the 20 year period under examination if growth opportunities were present (i.e., increases in affinity populations).

In 1990, one can observe the reported total value of church property from end-of-year reports. For predominately white congregations, the mean total value of church property equals $641,008. For African-American congregations, the mean total value of church property equals $405,914. Between 1990 and 2009, the mean total expenditures on facilities for predominately white congregations equals $585,255. For African-American congregations, the mean total expenditure equals $373,997. One average, local churches spent almost as much in improvements and expansions between 1990 and 2009 as the property was worth in 1990. However, most churches reported decreases in average worship attendance over this period.

Between 1990 and 2009, there were 13,943 predominately white congregations and 936 African-American churches that faced growing affinity populations. Some affinity growth was quite small. To ensure some notion of growth potential, it is useful to compare the size of the affinity growth to the average worship attendance of the church. For example, an affinity growth of 10 per year might seem insignificant to a church with average worship attendance of 500, but it could seem significant to a church with average worship attendance of 20. To better gauge the benefits of affinity growth, it is useful to express affinity growth as a percentage of average worship attendance. For example, an affinity growth of 10 would represent 10% of a church with an average worship attendance of 100. For our purposes, it is useful to refer to the 10% as an affinity percentage—the ratio of affinity population growth to average worship attendance.

The average affinity percentage for predominately white congregations where affinity populations were growing equals 1.675. For a church with average worship attendance of 100, the average affinity growth would be 1,675. The average affinity percentage for African-American congregations where affinity populations were growing equals 2.944.

Significant expenditures on facilities can be expressed as a percentage of the beginning value of church property. For example, a church that spent $100,000 on its property between 2000 and 2009 and had a value of church property of $1 million at the end of 1999, would have a percentage of 10%. It is useful to refer to this as its investment percentage—the ratio of total facilities expenditures to the beginning value of the property.

The average investment percentage among those churches that used debt as a source of financing, experienced growth in average worship attendance in response to the facilities expenditures, and faced increasing affinity population growth can be used as a benchmark for successful facility expenditures. The average investment percentage, for churches meeting this criterion among predominately white congregations equals 1.474. The average investment percentage for African-American churches equals 2.944. These represent our benchmarks for sufficient investment in facilities between 2000 and 2009.

With the use of these benchmarks, one can count the number of local churches that faced significant increases in affinity populations but under-invested in facilities. Table 30 presents the number of churches found to have investment percentages below the benchmarks and located where the growth in affinity populations were significant.

Table 30
Churches With Investment Percentages
Below Benchmarks

Investment Percentage	White	African-American
0	75	13
0 to .249	1,496	129
.250 to .499	363	27
.500 to .749	101	9
.750 to .999	65	3
1.000 to 1.235	44	7
1.236 to 1.474	23	
Total	2,167	188

There were a total of 2,167 predominately white congregations with investment percentages below the benchmarks and 188 African-American congregations with investment percentages below the benchmarks.

One can measure the difference between what was actually invested and the benchmark investment. For a church with beginning value of church property in 1999 of $1 million and an investment benchmark percentage of 1.47 would have a benchmark investment of $1,474,000. If that church only spent $1,200,000 from 2000 to 2009, one would conclude that the church underinvested by $274,000. Since the benchmarks are established for all 2,167 white congregations and 188 African-American congregations, one can examine the under-investment for every one of the 2,355 churches.

The total calculated amount of under-investment among white congregations equals $3.55 billion. The total calculated amount of under-investment among African-American congregations equals $222 million. The total for both congregations equals $3.77 billion.

Under-investment could have been satisfied with savings, loans, or both. One would expect that the smaller levels of under-investment would have been satisfied with savings. If one assumes that any total under-investment greater than $100,000 would require loan assistance, the total number of loans would be almost 2,000 additional church loans. The resulting increase in worship attendance would have been substantial—coming quite close to elimination the national decline in average worship attendance.

A Tipping Point?

Casual observations often find a church that previously engaged in an aggressive expansion project, leaving the church with substantial debt. Unless the church experiences growth, the ability to service the debt is in jeopardy. The church finds difficult in paying apportionments, funding programs, and staff. Sometimes the church in this condition reduces apportionment payments, lays off some staff, and drastically reduces programs. Efforts to increase giving become frequent. Those critical of the situation often look to the aggressive expansion project and the related debt as the cause of the situation.

A series of regressions that include a key ratio, the ratio of debt to total spending, forms a useful basis for examining the question: Is there a natural tipping point when debt becomes so large that the church can no longer grow? Perhaps the debt service requires a share of the budget that programs and staff known to enhance growth must be cut. These cuts, according to the logic, lead to decreases in worship attendance.

The regressions fail to find a tipping point. All else being equal, churches with the larger key ratios tend to grow faster than those with the smaller key ratios. Over the range of key ratios observed, there is no tipping point. Perhaps this makes sense.

The relatively large key ratios reflect significant expenditures for facilities. These facilities, on average, enhance growth. The large key ratio by itself does not seem to be the culprit. However, there are other factors that would lead to decreases in worship attendance. The evidence clearly demonstrates that churches initiate facility expansion and improvement project in the midst of declining affinity populations. This along would explain why worship attendance might not reach expected levels. In summary, we find no tipping point using the key ratio—total debt to total expenditures.

An alternative consideration uses a different ratio—debt service payments to total expenditures. To be clear, the debt service payments include both payments of interest and payments toward principle reduction. Typically, amortized loans require monthly interest and principle payments, similar to the home mortgage. Yet,

it is common for a church to make early principle payments in order to reduce the debt and retire the note early. Some churches conduct a debt-reduction capital campaign in order to retire the note early. In short, annual debt service payments often include larger principle payments than are required.[6]

Figure 4 presents the projected path of worship attendance three years after the facilities expenditures with differing levels of debt service payment ratios.

Figure 4
Average Worship Attendance and Debt Service Ratio
Total Debt Service Payments to Total Expenditures
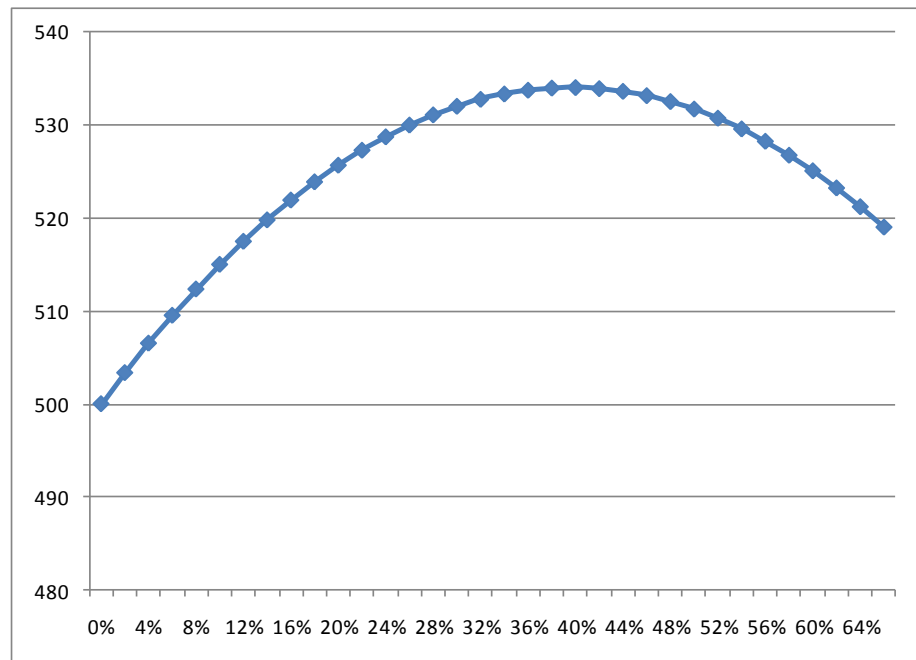
The evidence identifies a tipping point at about 40%. This may seem larger than expected. However, these debt service payments include dollars outside the operating budget. A member's contribution toward debt reduction is included in the figure. When a local church makes debt service payments representing 40% of total local church expenditures, peak gain in worship attendance is achieved. Larger percentages appear to reduce the size of the gain in worship attendance. This is a good example of the Law of Diminishing Returns. The gains in worship attendance increases as debt service payments increase as a percentage of total expenditures. But the increases in worship attendance get smaller and smaller as one approaches the 40% tipping point.

There are relatively few churches that report ratios in the neighborhood of 40%. The average ratio among all churches with debt and debt service payments equals 14%. Only about 3% of our churches with debt and debt service payments had a ratio greater than 40%. Among those hitting the 40% tipping point or greater, very few had such a percentage very often. Among those with any year with an over-40% ratio, over half had such a percentage only one year, and 83% had such a percentage for, at most, two years. Although there is a

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[6] On average, annual debt service payments, among churches with debt, equal $72,134. Assuming that the loan rate on church loans in 2009 was 7%, interest payments average $39,612. Average debt service payments in 2009 were 82% greater than the estimated payment of interest alone.

tipping point, a church that finds itself on the wrong side of the tipping point is a rare event. Too much debt does not appear to be the reason for membership decline.

The 2002 Downturn in Average Worship Attendance

With information assembled thus far, is there an answer to the question: What were the causes of the downturn in average worship attendance beginning in 2002? There is an answer, but it is not a complete answer.

We understand from the previous regression equations that expenditures on programs and staff have a significant, positive impact upon average worship attendance. From Table 6, one finds that the effect of a change in programming expenditures is 39.1% greater than the effect of a change in expenditures on staff.[7] Figure 5 presents the average expenditures on programs, adjusted for inflation, among predominately white congregations.

Figure 5
Average Expenditures on Programs
**Adjusted for Inflation**
White Congregations
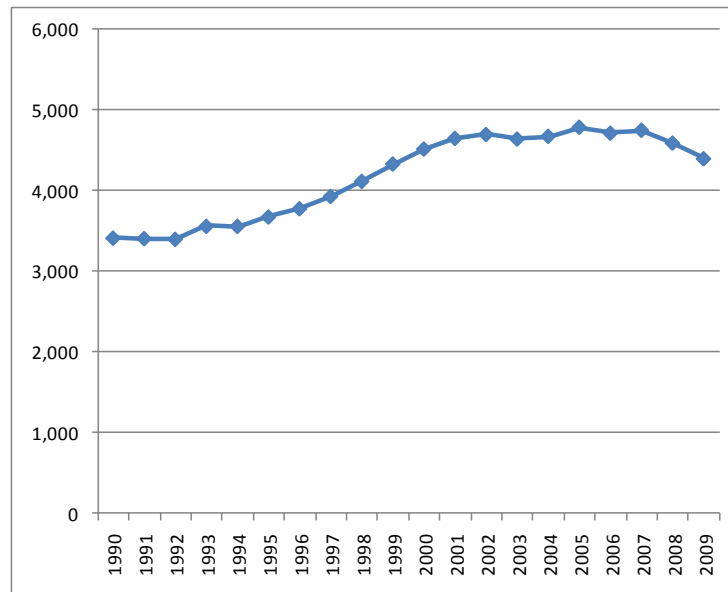
Around 2001, a plateau was reached, following by a downturn in program expenditures. This pattern suggests that the gains from program expenditures should have ended around 2001 when the plateau was reached. If, during a period of increasing expenditures the benefit was to arrest downward forces from other causes, the plateau would result in decreasing average worship attendance.

Figure 6 presents the average expenditures on staff, adjusted for inflation, among predominately white congregations.

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[7] From Table 6, the gain in attendance from a $10,000 expenditure on programs equals 14.9 attendees. The gain from a similar expenditure on staff equals 10.7 attendees. This is a 39.1% difference in gain.

Figure 6
Average Expenditures on Staff
Adjusted for Inflation
**White Congregations**
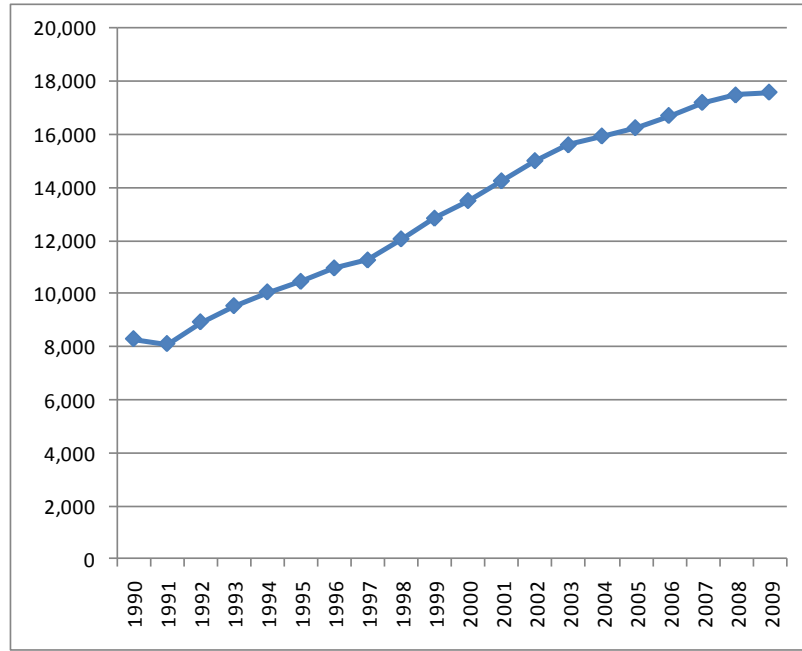
The trend in average expenditures on staff is positive for all but the first two years. The trend tends to flatten somewhat after 2001, but average expenditures continue to increase. Recall that the effect of expenditures on staff on average worship attendance is smaller than that of expenditures on programs.

Taking the two types of expenditures together, one would conclude that the program expenditures plateau could result in a change in the average worship attendance trend, even in the presence of increasing expenditures on staff. For this to be correct, there would have been a general downward pressure on average worship attendance attenuated only with increases in expenditures on programs and staff. When such increases were no longer possible, average worship attendance had to begin its decline.

Figure 6 presents the average expenditures on facilities from savings, adjusted for inflation, among predominately white congregations.

Figure 6
Average Expenditures on Facilities from Savings
Adjusted for Inflation
White Congregations
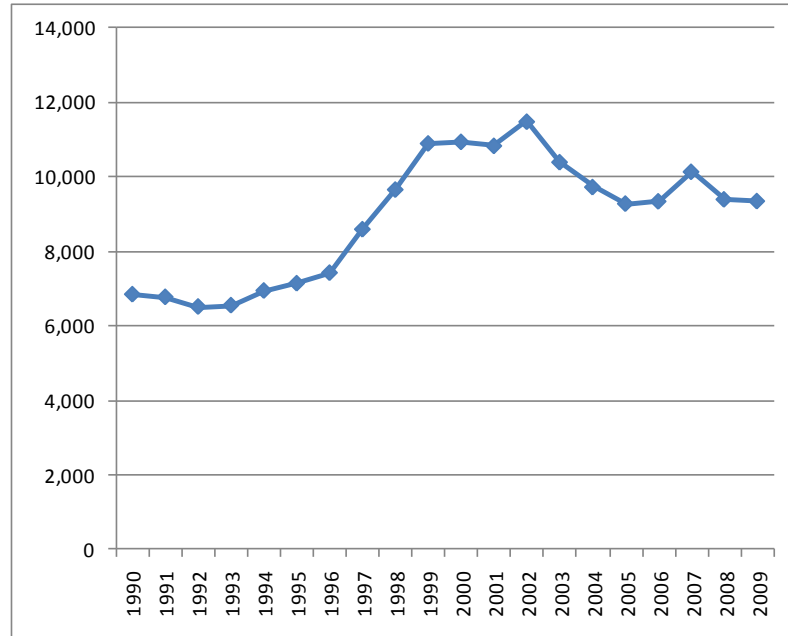
A plateau was reached in 2000. Recall from Table 5, the impact of a change in such expenditures is greater after three years than after one year. This plateau could easily have contributed to the decline in average worship attendance beginning in 2001. Recall that expenditures from savings have a considerably larger impact upon average worship attendance than expenditures from loans.

Figure 7 presents the average expenditures on facilities from loans, adjusted for inflation, and among white congregations.

Figure 7
Average Expenditures on Facilities from Loans
Adjusted for Inflation
White Congregations
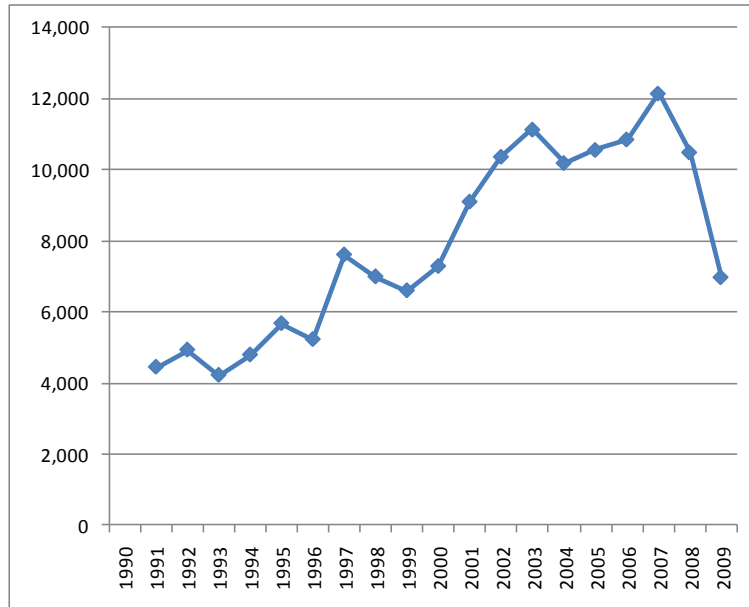
A plateau was reached in 2003, preceding the large downturn in 2008 and 2009. The increases in average expenditures between 1999 and 2003 suggest a positive impact on average worship attendance, but, again, the impact is small relative to that of expenditures from savings, and the full gains require years to accumulate.

This evidence suggests that the local church altered the composition of its spending at the expense of budget items known to enhance worship attendance (i.e., programs and facilities expenditures from savings) around 2001—coincident with the downturn in average worship attendance.   Further results from regressions do not suggest that the reductions in these expenditures were caused by increasing debt. That is, increasing debt does not seem to be the culprit here. The complete answer may be found among other causes not yet identified.

What Have We Learned?

This examination has provided some important guidelines for both lenders and for local churches if growth in average worship attendance is the objective. These guidelines are as follows:

1. Improvements, expansions, and repairs in facilities lead to increases in average worship attendance, all else being constant (such as affinity population, program and staff expenditures, etc.).

2. It is important to combine proceeds from loans with proceeds from savings. A larger the portion from savings results in larger gains in worship attendance.

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3. Expenditures on programs and staff have an important role to play. Such expenditures encourage growth in average worship attendance.

4. Planned expenditures on facilities should include planned growth in expenditures on programs and on staff.

5. About half of the historical expenditures on facilities, through debt, resulted in decreases in average worship attendance. However, this result appears to have been caused by other factors. Some of those other factors were caused by changes in the composition of local church expenditures and declining affinity populations.

6. Expenditures on facilities are necessary for maintenance and growth in average worship attendance. For the smaller churches, funding almost always come from savings.

7. For the larger churches, given the long-term effects from expenditures on facilities, use of loans appears appropriate and necessary for maintenance and growth in average worship attendance.

8. There have been substantial opportunities lost in insufficient expenditures on facilities. These missed opportunities significantly contributed to the lack of growth in average worship attendance.

9. Too much debt can be bad for a local church. There is a tipping point where average worship attendance predictably decreases as debt service payments grow, but the tipping point is rarely reached by local churches.

10. One of the major drivers of average worship attendance is affinity population changes. Many churches face decreasing affinity populations, and expenditures on facilities may only slow the decline in average worship attendance. Those churches facing increasing affinity populations are best positioned for growth.

What Do We Not Yet Understand?

The results of this examination do not answer all of the important questions.

1. The results are based upon churches with no changes in senior pastor appointments. What happens when there are such changes?

2. The results are not adjusted for the number of "competing" UM churches in the vicinity of the subject local church. Would the conclusions be sensitive to the presence of one or more UM churches in the vicinity? What would be the impact of a new church start in the vicinity?

3. Expenditures on programs appear to have a major impact on average worship attendance. Exactly what types of programs have the greatest impact?

4. Is the measured impact of expenditures on facilities sensitive to changes in affinity populations? Is the "bang for the buck" larger when affinity populations are growing?

5. Are there regional differences in these results?

6. Is there a best practice in the composition of local church spending? Do these best practices differ by size of church? Do these best practices differ by the racial/ethnicity of the congregation?

7. Do these results differ by urban versus rural versus suburban settings?

8. Would case studies and statistical analysis of churches encountering serious difficulties due to high debt reveal patterns that, combined with debt, led to problems?

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