Federal Tax Policy and Charitable Giving: Revisiting the 1985 Study by Charles T. Clotfelter

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Federal Tax Policy and Charitable Giving: 
Revisiting the 1985 Study by 
Charles T. Clotfelter

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Graduate Capstone
Martin School of Public Policy and Administration

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EXECUTIVE SUMMARY

This study was inspired and given its basic research design by a study conducted in 1985 by Charles T. Clotfelter, which sought to explain charitable giving by both individuals and corporations in relation to federal tax policy. Clotfelter determined that federal tax policy did influence charitable giving by corporations. The issue to be addressed here is, do the Clotfelter findings still hold true today?

The focus of this current study is on charitable giving by corporations only and the dataset was built from the same IRS Statistics of Income that Clotfelter used. Additional data were added from the Bureau of Labor Statistics. There were a total of nineteen industries included and the years focused on were 2005-2009. The data were analyzed using two pooled time-series models. The first model used ln charitable contributions as the dependent variable and unemployment rate, number returns, ln total assets, ln cash, ln total income tax after credits, and ln noncash expenses as the independent variables. The second model was identical to the first but added four dummy variables, INDUSTRY_7, INDUSTRY_11, INDUSTRY_15, and INDUSTRY_18, to control for industry.

The initial findings from the first model indicate that total income tax after credits and noncash expenses are statistically significant with positive effects. However, in the second model that accounts for specific industry, those monetary variables (total income tax after credits and noncash expenses) are no longer significant. INDUSTRY_11 is statistically significant with positive effects and INDUSTRY_15 is also statistically significant but with negative effects. Overall, it is industry that matters the most.

Further analysis of the industry effects on charitable contributions among corporations is recommended in order to provide a better understanding of why some industries are more generous than others. It is also recommended that the dataset be expanded to cover a broader range of years and to catch the affects of marginal tax rate in conjunction with industry.
INTRODUCTION

The National Bureau of Economic Research reported that December 2007 through June 2009 marked the longest recession in the United States since World War II. During and since the eighteen-month recession, nonprofit organizations and charities alike have struggled financially to keep afloat. These organizations are seeing portions of their state and federal funding decline as well as the charitable contributions from outside individuals and businesses that they must be able to depend on each year. This economic environment is making it very difficult for not only the existing nonprofits but also those seeking to start-up new not-for-profit organizations.

According to the National Center for Charitable Statistics, there are currently over one and a half million tax-exempt organizations in the United States and, as of the year 2009, there were well over three million tax returns filed with the Internal Revenue Service by corporations.¹ Corporations outnumber nonprofits by a ratio of nearly two to one and they are also the source for a significant portion of charitable contributions to the nonprofit sector. It is important to note, however, that unlike nonprofits, corporations are taxed at both the federal and state level.

There is much debate on whether or not federal tax policy affects charitable giving among individuals and corporations. For example, when the marginal tax rates are higher, are individuals and corporations more or less likely to partake in charitable giving? Is there any difference when the marginal tax rates are lower?

¹ In 2009, the Internal Revenue Service Corporation Source Book: Statistics of Income reported that there were 3,148,768 tax returns filed for active corporations with Net Income.
These are both common questions considered when analyzing the issue. Some even argue that the tax deductions given for charitable donations should be eliminated entirely.

It is not only an interesting concept to study, but it is also relevant in addressing how our federal tax structure affects our entire tax-exempt sector. These nonprofit organizations consist of many of our schools, hospitals, churches, symphonies, and other recreational facilities, just to name a few. Whether or not the federal tax structure affects charitable gifts is important to not only the taxpayers but also these organizations, which rely on the donations.

In this paper, I will focus my research on charitable giving by corporations in relation to the financial background of and industry to which the corporation belongs. The purpose for conducting research in this area is to determine whether there was in fact any effect on the charitable giving of corporations during the years 2005-2009 across all industries. The basic design will be similar that of a previous study from 1985 that has since become outdated.

**LITERATURE REVIEW**

Published in 1985, Charles T. Clotfelter’s book *Federal Tax Policy and Charitable Giving* outlines many different concepts, analyses, and findings on this issue. He focuses his research on (1) the effect of a federal personal income tax on individual charitable giving, (2) implications of tax policy for volunteering, (3) corporate contributions and the effect of the charitable deduction in the corporate income tax, (4) the estate tax and the importance of bequests for various nonprofit
activities, and (5) the role of private foundations within the larger charitable sector and the tax legislation affecting them.

The extent of this book and his studies is rather large and widespread so, for the purpose of this paper, I will only be focusing on charitable contributions by corporations. To be more specific, I will be looking at this same topic and using the same data sources as Clotfelter, but with the most recent publications instead. With this, I can compare how or if the effects have changed regarding corporate contributions and charitable giving in the years 2005-2009 versus 1936-1980. It is for this reason that most of the literature I will use comes from Clotfelter’s aforementioned book.

Chapter 5 of *Federal Tax Policy and Charitable Giving* is devoted entirely to the effects of corporate income tax on corporate contributions. Clotfelter indicates that most data collected and used on this issue come from the Internal Revenue Service in both the *Statistics of Income* series and Source Book of Statistics of Income. He goes on to include a chart titled “Table 5.9 Summary of Empirical Studies of Corporate Contributions,” which lists eight different studies ranging from the years 1966-1982. These studies mostly looked at total or average contributions from corporations as the dependent variable and net income as the income measure in the independent variables.

Clotfelter’s study included an econometric analysis of aggregate data on corporate contributions from 1936 to 1980. The focus was on the variation in corporate income and in the price of gifts over time and across asset classes. Major findings from the study can be summed up as, “federal taxes, especially tax
provisions affecting charitable giving, have important effects on the size and distribution of giving. The deductions in the individual, corporate, and estate taxes are of course most important, in the sense that no other tax changes with comparable revenue effects would influence charitable giving as much as the elimination of these deductions.” (Clotfelter, p. 276)

A conflicting study conducted by Peter Navarro in 1988, “Why do Corporations Give to Charity?” found no relation between contributions and the federal tax rate. Navarro presents both a theoretical model and empirical model; he then estimates the empirical model to reach this conclusion. Variables included in the model were categorized under demand side motives, cost side motives, managerial discretion, and other factors. (Navarro, pp. 78-82) Other less significant findings from his study were that contributions are negatively related to amount of debt as opposed to equity in the firm’s capital structure and contributions are positively related to increases in dividends. While this article presents some very interesting findings in regard to corporate contributions and tax policy, I will limit my review of it because it mostly examines variables unrelated to my research.

A third perspective can be found in John L. Campbell’s article, “Why Would Corporations Behave in Socially Responsible Ways? An Institutional Theory of Corporate Responsibility.” In this study, Campbell cites both conflicting studies (Clotfelter, 1985 and Navarro, 1988) but instead of agreeing with one or the other, he names a third factor: property rights. That is, he does not seek to explain whether or not tax law affects charitable giving by firms. From a different approach, Campbell says tax law in general is an important property rights institution, which
may affect corporate behavior regarding philanthropic giving. This third angle can be best presented as, “...this stream of research suggests that property rights and, by implication, other forms of state regulation may affect the degree to which corporations behave in socially responsible ways.” (Campbell, p. 949)

In addition to these three studies, there have been a number of different approaches by other authors attempting to explain why and to what extent corporations donate to charities. Similar to the findings in Clotfelter, Carroll and Joulfaian (2005), Lin (2006) and Bakija and Heim (2011) all determined that tax policy strongly influenced philanthropy. The results indicated a negative correlation between corporate philanthropy and tax prices as well as a positive correlation between corporate philanthropy and income and advertising. (Carroll & Joulfaian, 2005) There was also found to be a negative relationship between donations and the capital gains tax rates. (Lin, 2006) Brown, Helland, and Smith (2006) also found that corporate philanthropy had a positive relationship with firm advertising. Their empirical study further indicated that firms with larger boards of directors give more to charity and firms with higher debt-to-value ratios give less in donations. (Brown, Helland, & Smith, 2006)

It is clear that the past research on this topic has been very broad and rather inconclusive. Some research suggests that tax policy does affect corporate charitable giving while others do not. In a different manner, some research completely avoids tax policy and focuses on other determinants. For the purposes of this study, I will not be able to advocate a single viewpoint. Instead, I will simply revisit the 1985 study conducted by Clotfelter and attempt to generate similar
analyses with the most current data available. The focus on charitable contributions by corporations shifts from tax rate effects to the financial background of and industry in which the corporation belongs.

RESEARCH DESIGN

The research design used is similar to that of Clotfelter’s in his book, Federal Tax Policy and Charitable Giving. My primary source is the same as Clotfelter’s; however, the data is nearly thirty years more recent. The purpose of my research is to find out whether Clotfelter’s findings in 1985 can be replicated today and whether they remain accurate.

The structure of Clotfelter’s study was an econometric analysis of aggregate data on corporate contributions from the years 1936-1980. The data sources used came from the Internal Revenue Service in the Statistics of Income series and the “Source Book of Statistics of Income.” The variables used were Income and Price. Income can be defined as “net income before tax.” Price can be defined as “the net cost to a firm of making another dollar of corporate contributions.”

The Statistics of Income series has data as recent as 2009 and includes annual numbers for income, assets, contributions, and other items for corporation income tax returns. The “Source Book of Statistics of Income” also has data as recent as 2008 and has information by industry and asset size. For my study, I will use only the Statistics of Income.

The units of analysis in my research are industries. Corporate income tax return data and unemployment rates for the years 2005, 2006, 2007, 2008, and
2009 were collected by industry to form the dataset. One of the two estimation equations used by Clotfelter was an aggregate time-series analysis. The second of these equations was a pooled time-series/cross-section analysis. I will be using the data from the *Statistics of Income* and Bureau of Labor Statistics to estimate a pooled time-series model.

In Clotfelter’s pooled time-series model, the dependent variable is “logarithm of average contributions.” The explanatory variables are as follows: $\ln(1-Rm)$, $\ln(1-Ra)$, $\ln$ ACFN, $\ln$ NIN, and $U$. Defined: $\ln$ (Income); $Rm$ (marginal tax rate); $Ra$ (average tax rate: normal tax rate plus excess-profits taxes as percent of net income); ACFN (average cash flow after taxes); NIN (average net income after taxes); and $U$ (unemployment rate). The units of analysis were corporations by asset size and this yielded a sample of 506 observations.

According to Clotfelter, the most important limitations of the Internal Revenue Services data have to do with the possibility of mismeasurement of contributions and economic profits. The IRS data on contributions only counts those that are tax deductible. Further, the IRS does not provide a concise definition of corporate income. These are two concerns that must be regarded when interpreting the results. He goes on to say, specifically with regard to the second pooled time-series equation, “Two econometric problems often arise in estimation using pooled data such as this: autocorrelation and heteroskedasticity.” (Clotfelter, p. 214) I will need to keep these same possibilities in mind when evaluating the results of my estimation.
DATA DESCRIPTION

The data used in this study from the *Statistics of Income* include nine variables: number of returns, total assets, cash, charitable contributions, amortization, depreciation, depletion, net income, and total income tax after credits. Data obtained from the Bureau of Labor Statistics includes only one variable, unemployment rate. Once uploaded into STATA, two new variables were created, gifts per income and noncash expenses. Gifts per income expresses charitable contributions as a percentage of net income and was necessary to include as a control variable for changes in the economy by industry. Noncash expenses is amortization, depreciation, and depletion added together into one variable for the sole purpose of simplicity.

Observations were collected for the nine variables listed above across nineteen different industries over a five-year period (2005-2009). As mentioned prior, industry is the unit of analysis. The industries are as follows: Accommodation & Food Services, Administrative & Support & Waste Management & Remediation Services, Agriculture, Arts, Entertainment, & Recreation, Construction, Educational Services, Finance & Insurance, Health Care & Social Assistance, Information, Management of Companies (Holding Companies), Manufacturing, Mining, Other Services, Professional, Scientific, & Technical Services, Real Estate & Rental & Leasing, Retail Trade, Transportation & Warehousing, Utilities, and Wholesale Trade.
The purpose of this paper is to look beyond Clotfelter’s findings in 1985 and present a similar, yet new, perspective on the study of charitable giving. Clotfelter used data over a much longer timeframe (1936-1980) and focused much of his analyses on the effects of the marginal tax rate on corporate charitable contributions. This was not included in my model because the marginal tax rate during the years 2005-2009 did not change and was therefore irrelevant. In
addition to this difference, I chose to look at industry effects in relation to charitable contributions.

As noted previously, there are a total of nineteen industries included in the data as well as eleven variables of interest. Two of the variables, unemployment rate and number of returns, are not monetary values. The eight monetary variables (total assets, cash, charitable contributions, amortization, depreciation, depletion, net income, and total income tax after credits) were then re-scaled into units of ten thousand to simplify the results. For the purpose of simplifying the data and being able to more easily identify patterns, five-year averages and standard deviations were also calculated for each variable across all nineteen industries. The results can be seen in Table 2. It should be noted that Management of Companies (Holding Companies) does not have a value for unemployment rate because the Bureau of Labor Statistics did not recognize this industry.

In the Clotfelter models, variables were converted into logarithms. For the purpose of keeping my model similar to his, all eight monetary variables were log transformed. As mentioned above, in order to see the effects of all the noncash expense variables (amortization, depreciation, and depletion), a new variable was created, NC (noncash expenses). It was then necessary to log transform this new variable. The purpose in converting these variables into logarithms was because of the apparent skewed nature among some of the independent variables. Some were very small while others were very large and some were monetary while others were not. In order to account for these differences and provide a more normal distribution for the skewed data, logarithmic values were the most practical.
<table>
<thead>
<tr>
<th>Industry</th>
<th>Five-Year Averages (Standard Deviations)</th>
<th>Unemployment Rate</th>
<th>Number Returns</th>
<th>Total Assets</th>
<th>Cash</th>
<th>Charitable Contributions</th>
<th>Noncash Expenses</th>
<th>Net Income</th>
<th>Total Income Tax After Credits</th>
<th>Gifts Per Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodation &amp; Food Services</td>
<td></td>
<td>8.66 (1.85)</td>
<td>142,124.60</td>
<td>32,366.86</td>
<td>2,064.95</td>
<td>23.34</td>
<td>1,107.14</td>
<td>2,724.72</td>
<td>338.12</td>
<td>0.01 (0.0011)</td>
</tr>
<tr>
<td>Administrative &amp; Support &amp; Waste Management &amp; Remediation Services</td>
<td></td>
<td>11.04 (2.126)</td>
<td>171,799.40</td>
<td>20,540.33</td>
<td>1,868.92</td>
<td>7.84</td>
<td>909.61</td>
<td>2,497.93</td>
<td>274.47</td>
<td>0.0031</td>
</tr>
<tr>
<td>Agriculture</td>
<td></td>
<td>9.06 (3.13)</td>
<td>72,778.20</td>
<td>7,485.51</td>
<td>797.46</td>
<td>5.67</td>
<td>459.41</td>
<td>908.42</td>
<td>73.75</td>
<td>0.0063</td>
</tr>
<tr>
<td>Arts, Entertainment, &amp; Recreation</td>
<td></td>
<td>8.14 (1.72)</td>
<td>59,044.20</td>
<td>5,341.56</td>
<td>748.37</td>
<td>3.47</td>
<td>251.66</td>
<td>797.74</td>
<td>57.26</td>
<td>0.0044</td>
</tr>
<tr>
<td>Construction</td>
<td></td>
<td>9.26 (5.48)</td>
<td>465,793.60</td>
<td>51,976.94</td>
<td>8,234.17</td>
<td>28.04</td>
<td>1,534.00</td>
<td>7,628.89</td>
<td>595.76</td>
<td>0.0037</td>
</tr>
<tr>
<td>Educational Services</td>
<td></td>
<td>4.40 (1.37)</td>
<td>26,495.20</td>
<td>2,648.66</td>
<td>451.66</td>
<td>1.38</td>
<td>100.07</td>
<td>429.16</td>
<td>76.24</td>
<td>0.0031</td>
</tr>
<tr>
<td>Finance &amp; Insurance</td>
<td></td>
<td>3.48 (1.36)</td>
<td>163,066.80</td>
<td>2,728,023.00</td>
<td>65,055.62</td>
<td>156.62</td>
<td>4,226.72</td>
<td>56,558.47</td>
<td>5,195.31</td>
<td>0.0028</td>
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<td>Health Care &amp; Social Assistance</td>
<td></td>
<td>3.44 (3.82)</td>
<td>257,949.20</td>
<td>21,133.42</td>
<td>2,160.34</td>
<td>17.42</td>
<td>868.23</td>
<td>3,915.12</td>
<td>323.24</td>
<td>0.0045</td>
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<td>Information</td>
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<td>5.30 (2.28)</td>
<td>59,743.20</td>
<td>237,898.10</td>
<td>8,164.13</td>
<td>79.80</td>
<td>8,189.33</td>
<td>10,631.05</td>
<td>2,198.85</td>
<td>0.0074</td>
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<tr>
<td>Management of Companies (Holding Companies)</td>
<td></td>
<td>0.00 (2.00)</td>
<td>18,020.80</td>
<td>1,308,245.00</td>
<td>114,835.80</td>
<td>117.43</td>
<td>3,021.97</td>
<td>12,275.15</td>
<td>2,859.98</td>
<td>0.0096</td>
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<tr>
<td>Manufacturing</td>
<td></td>
<td>7.22 (3.82)</td>
<td>155,498.80</td>
<td>846,539.80</td>
<td>28,259.31</td>
<td>614.40</td>
<td>1,7059.46</td>
<td>55,871.90</td>
<td>8,467.15</td>
<td>0.0112</td>
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<tr>
<td>Mining</td>
<td></td>
<td>4.88 (3.76)</td>
<td>22,653.00</td>
<td>53,851.90</td>
<td>2,605.07</td>
<td>17.44</td>
<td>2,632.14</td>
<td>5,656.67</td>
<td>859.03</td>
<td>0.0031</td>
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<tr>
<td>Other Services</td>
<td></td>
<td>5.24 (1.36)</td>
<td>129,472.00</td>
<td>7,469.11</td>
<td>1,267.01</td>
<td>4.26</td>
<td>347.24</td>
<td>1,019.31</td>
<td>67.12</td>
<td>0.0042</td>
</tr>
<tr>
<td>Professional, Scientific, &amp; Technical Services</td>
<td></td>
<td>4.00 (1.36)</td>
<td>524,716.60</td>
<td>51,715.39</td>
<td>7,019.61</td>
<td>25.69</td>
<td>1,326.11</td>
<td>7,480.21</td>
<td>602.83</td>
<td>0.0035</td>
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<tr>
<td>Real Estate &amp; Rental &amp; Leasing</td>
<td></td>
<td>4.62 (2.05)</td>
<td>249,736.00</td>
<td>64,663.36</td>
<td>3,999.37</td>
<td>14.94</td>
<td>2,259.15</td>
<td>4,868.85</td>
<td>409.23</td>
<td>0.0033</td>
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<tr>
<td>Retail Trade</td>
<td></td>
<td>6.38 (1.79)</td>
<td>327,242.40</td>
<td>133,420.50</td>
<td>9,594.25</td>
<td>128.02</td>
<td>4,015.08</td>
<td>11,449.20</td>
<td>2,557.12</td>
<td>0.0113</td>
</tr>
<tr>
<td>Transportation &amp; Warehousing</td>
<td></td>
<td>5.68 (2.31)</td>
<td>109,931.00</td>
<td>44,036.43</td>
<td>2,903.82</td>
<td>20.75</td>
<td>2,518.82</td>
<td>3,063.13</td>
<td>588.01</td>
<td>0.0071</td>
</tr>
<tr>
<td>Utilities</td>
<td></td>
<td>2.56 (1.31)</td>
<td>4,397.00</td>
<td>106,507.60</td>
<td>2,404.52</td>
<td>47.01</td>
<td>3,522.00</td>
<td>3,340.90</td>
<td>836.73</td>
<td>0.0144</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td></td>
<td>4.44 (1.63)</td>
<td>229,014.20</td>
<td>157,459.70</td>
<td>11,358.68</td>
<td>86.66</td>
<td>3,416.36</td>
<td>11,873.03</td>
<td>2,132.03</td>
<td>0.0073</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td>5.99 (3.27)</td>
<td>172,498.70</td>
<td>309,543.30</td>
<td>14,410.16</td>
<td>73.69</td>
<td>3,040.24</td>
<td>10,683.24</td>
<td>1,500.64</td>
<td>0.0063</td>
</tr>
</tbody>
</table>

First number is the 5-year average for years 2005-2009
Second number in () is the 5-year average standard deviation for years 2005-2009
Once these variables were log transformed, two regression models were used. Both models were comprised of variables over a five-year period of time across nineteen industries; therefore, a pooled time-series regression was used. The first model did not control for industry while the second did.

*Research Question 1: Do the selected independent variables (unemployment rate, number returns, total assets, cash, total income tax after credits, and noncash expenses) affect corporate charitable contributions?*

This first regression was estimated using a pooled time-series model. The dependent variable was charitable contributions and the independent variables were unemployment rate, number of returns, total assets, total cash, total income tax after credits, and total noncash expenses. The latter four were in logarithm values. This regression model can be written as:

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_n X_n + \varepsilon \]

\( Y \) is the logarithm of total charitable contributions by industry, \( X \) represents the variables of interest, and \( \varepsilon \) accounts for the random error in the model. The standard errors of each estimate are also clustered by industry.
Research Question 2: Does industry matter when analyzing the affect of the selected independent variables on corporate charitable contributions?

This second regression was also estimated using a pooled time-series model. Four industries (Finance & Insurance, Manufacturing, Real Estate, and Utilities) were included as dummy variables to control for any differences resulting from the first model. These industries were chosen because of patterns indicated in the descriptive statistics as outlined in Table 2. The equation is identical to the first except for the four dummy variables added to the end. This regression model can be written as:

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_n X_n + \beta_7 D_1 + \beta_8 D_2 + \beta_9 D_3 + \beta_{10} D_4 + \varepsilon \]

\( Y \) is once again the logarithm of charitable contributions, \( X \) represents the variables of interest, \( D \) represents controlling for the dummy variables for industry, and \( \varepsilon \) accounts for the random error in the model. The standard errors of each estimate are again clustered by industry.

**ANALYSIS & FINDINGS**

The results from both models were different than those from the previous empirical analysis by Clotfelter. Clotfelter was able to attribute the differences in charitable contributions over the years studied to changes in the marginal tax rate on corporate income. Because the marginal tax rate did not change during the years analyzed in this study, the variables of interest were not identical. The first model looked at the relationship between unemployment rate, number of returns, total
assets, total cash, total income tax after credits, and noncash expenses and the
dependent variable, charitable contributions. The findings indicate that both total
income tax after credits and noncash expenses are statistically significant with
positive effects. Total income tax after credits has a fairly large, positive effect with
a coefficient of 0.596, while noncash expenses has a smaller, positive effect with a
coefficient of 0.348. These results can be seen in Table 3.

When dummy variables are added to control for industry in the second
model, the findings no longer indicate that the monetary variables matter. Industry
11 (Manufacturing) and industry 15 (Real Estate) are both statistically significant in
the regression. The manufacturing industry had a very large, positive effect with a
coefficient of 0.757. The real estate industry, on the other hand, had a fairly large,
negative effect with a coefficient of -0.620. These results can be seen in Table 4.

The first model revealed that both total income tax after credits and noncash
expenses were statistically significant. What this means is that the amount of total
income tax a corporation must pay after credits positively affects their amount of
charitable contributions. Furthermore, the amount of noncash expenses a
corporation is responsible for also affects their amount of charitable contributions.
In theory this makes sense. If a corporation has a large amount of taxes they must
pay, even after all credits are deducted, it is probably going to alter the way they
choose to give in charitable donations. In regard to noncash expenses, made up of
amortization, depreciation, and depletion, it also makes logical sense that if a
corporation has a large amount of their expenses in areas other than cash it will
affect how they choose to give in charitable contributions.
<table>
<thead>
<tr>
<th>INDEPENDENT VARIABLES</th>
<th>(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ln Charitable Contributions</td>
<td></td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>0.0240</td>
</tr>
<tr>
<td></td>
<td>(0.0293)</td>
</tr>
<tr>
<td>Number Returns</td>
<td>7.29e-07</td>
</tr>
<tr>
<td></td>
<td>(9.49e-07)</td>
</tr>
<tr>
<td>In Total Assets</td>
<td>0.0900</td>
</tr>
<tr>
<td></td>
<td>(0.298)</td>
</tr>
<tr>
<td>In Cash</td>
<td>0.00863</td>
</tr>
<tr>
<td></td>
<td>(0.372)</td>
</tr>
<tr>
<td>ln Total Income Tax</td>
<td>0.596**</td>
</tr>
<tr>
<td>After Credits</td>
<td>(0.208)</td>
</tr>
<tr>
<td>ln Noncash Expenses</td>
<td>0.348*</td>
</tr>
<tr>
<td></td>
<td>(0.169)</td>
</tr>
<tr>
<td>Constant</td>
<td>-4.479***</td>
</tr>
<tr>
<td></td>
<td>(0.697)</td>
</tr>
<tr>
<td>Observations</td>
<td>90</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.934</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Both of these variables have a positive correlation with charitable contributions meaning that as they increase, charitable contributions also increase. This might be explained as corporations with more total income tax after credits had more income tax to begin with. A corporation that is paying more in income tax likely has more money in general to give away in the form of donations. Thus, this variable is significant in predicting whether a corporation gives more or less to charities. This same concept can be applied to noncash expenses.
The second model reveals much more compelling evidence and indicates that industry is what really matters when determining a corporation’s influences on charitable giving. When controlling for four of the nineteen industries (Industry 7-Finance & Insurance, Industry 11-Manufacturing, Industry 15-Real Estate, and Industry 18-Utilities), total income tax after credits and noncash expenses are no longer statistically significant. Instead, industries 11 (manufacturing) and 15 (real estate) are significant at p<0.01. This was an unexpected finding so in order to better understand what this meant I took the analysis one step further.

To see the dollar value difference by industry, five equations were used based on the equations from research questions one and two. The results can be seen in Table 5. First, the dollar value of charitable contributions without industries was calculated by multiplying each variable average by each variable coefficient then adding them together and adding the constant. Next, it was necessary to take the inverse log of that number because those numbers had been previously log transformed. Once that number was found, the total was multiplied by ten thousand because the numbers had been scaled down into units of 10,000 when uploaded into STATA. This number was $251,259.
TABLE 4: REGRESSION MODEL 2 RESULTS 
COEFFICIENT (ROBUST STD. ERROR)

<table>
<thead>
<tr>
<th>INDEPENDENT VARIABLES</th>
<th>(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ln Charitable Contributions</td>
<td>0.00818</td>
</tr>
<tr>
<td></td>
<td>(0.0251)</td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>1.18e-06</td>
</tr>
<tr>
<td></td>
<td>(9.01e-07)</td>
</tr>
<tr>
<td>ln Total Assets</td>
<td>0.342</td>
</tr>
<tr>
<td></td>
<td>(0.475)</td>
</tr>
<tr>
<td>ln Cash</td>
<td>-0.0158</td>
</tr>
<tr>
<td></td>
<td>(0.377)</td>
</tr>
<tr>
<td>ln Total Income Tax After Credits</td>
<td>0.363</td>
</tr>
<tr>
<td></td>
<td>(0.223)</td>
</tr>
<tr>
<td>ln Noncash Expenses</td>
<td>0.252</td>
</tr>
<tr>
<td></td>
<td>(0.290)</td>
</tr>
<tr>
<td>INDUSTRY_7</td>
<td>-0.470</td>
</tr>
<tr>
<td></td>
<td>(0.946)</td>
</tr>
<tr>
<td>INDUSTRY_11</td>
<td>0.757***</td>
</tr>
<tr>
<td></td>
<td>(0.225)</td>
</tr>
<tr>
<td>INDUSTRY_15</td>
<td>-0.620***</td>
</tr>
<tr>
<td></td>
<td>(0.188)</td>
</tr>
<tr>
<td>INDUSTRY_18</td>
<td>0.287</td>
</tr>
<tr>
<td></td>
<td>(0.302)</td>
</tr>
<tr>
<td>Constant</td>
<td>-4.821***</td>
</tr>
<tr>
<td></td>
<td>(1.211)</td>
</tr>
<tr>
<td>Observations</td>
<td>90</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.954</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Once this number was calculated, the dollar values could be found for each of the four industries included. To do this, the amount found in the first equation, $251,259 was added to the coefficient of each industry. Then the inverse log was found and that number was multiplied by ten thousand. This meant that the process
would need to be repeated four times for the four different industries. The results indicate that for finance and insurance, charitable contributions were less than the average across all industries at $156,966. Manufacturing was much higher at $535,810, real estate was $135,119, and utilities came in at $334,738. In other words, this is the dollar value of charitable contributions, on average in each industry, which corporations gave during the years 2005-2009.

<table>
<thead>
<tr>
<th>TABLE 5: DOLLAR VALUE OF CHARITABLE CONTRIBUTIONS BY INDUSTRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_n X_n + \beta_7 D_1 + \beta_8 D_2 + \beta_9 D_3 + \beta_{10} D_4 + \varepsilon$</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Equation</th>
<th>Log Value</th>
<th>Inverse Log Value</th>
<th>Multiplier</th>
<th>Y=</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_n X_n$</td>
<td>3.223898757</td>
<td>25.13</td>
<td>$x 10,000$</td>
</tr>
<tr>
<td>2</td>
<td>Industry 7 (Finance &amp; Insurance)</td>
<td>2.753444957</td>
<td>15.696613</td>
<td>$x 10,000$</td>
</tr>
<tr>
<td>3</td>
<td>Industry 11 (Manufacturing)</td>
<td>3.981194057</td>
<td>53.58097476</td>
<td>$x 10,000$</td>
</tr>
<tr>
<td>4</td>
<td>Industry 15 (Real Estate)</td>
<td>2.603567657</td>
<td>13.51185782</td>
<td>$x 10,000$</td>
</tr>
<tr>
<td>5</td>
<td>Industry 18 (Utilities)</td>
<td>3.51076416</td>
<td>33.4738373</td>
<td>$x 10,000$</td>
</tr>
</tbody>
</table>

There are a number of reasons to explain why these were the results. It is difficult to identify any exact reason why corporations from some industries might donate more than others, but here are a few examples. The American economy was
well on its way to the recession that hit in 2007 and the years analyzed in this study would capture those effects. Some industries were hit harder than others and it is possible that those that were hurt the most do not have as much money or willingness to donate as those that remained fairly untouched.

On the other hand, with no regard to the current economic conditions, some industries simply have a larger amount of money and available cash to donate than others. In this study, the manufacturing industry is a good example of that. Of the four industries controlled for in the model, manufacturing had the third highest five-year average in cash and by far the largest amount spent on charitable contributions. It is also conceivable that those industries with less available cash, which still have a large amount of assets, will donate less than others. While this is complete speculation, it is an area where more research could be done.

**DISCUSSION**

**RECOMMENDATIONS**

This is an interesting topic for both nonprofit organizations and policy makers to examine. If monetary variables do not matter but industry does, then the nonprofit organizations should analyze this further to determine which of these industries to target for charitable gifts. While this is likely to already be occurring, it would be helpful as a nonprofit manager to know which types of corporations, by industry, on average, are the most generous when it comes to donations.
From a policy maker standpoint, it would be interesting to know what types of deductions and tax credits, by industry, result in the most charitable giving. Are some industries eligible for more deductions and credits than others? In other words, what types of policies are responsible for this difference by industry? If it is accurate that industry matters more than anything, this could also provide evidence for policy makers wishing to eliminate the charitable tax breaks without adversely affecting the nonprofit sector. These are all ideas what would require much time, data, and analysis to research, which brings me to the particular constraints that were present in this study.

LIMITATIONS

There were several limitations to this study, particularly in regard to the dataset. There were issues of both time and available data. First, the study was originally intended to be nearly identical to that of Clotfelter's 1985 research, which looked at marginal tax rates and charitable giving among corporations. This was immediately a problem because the timeframe used in this study was much smaller. He was able to look at data from the years 1936-1980 and this study was only 2005-2009. Over the forty-five years in the Clotfelter study, the marginal tax rate changed many times which he was able to use and say affected charitable giving. Over the five years in this study, the marginal tax rate did not change, therefore, other variables had to be utilized.

Next, there was the issue of time. Given that I did not have unlimited time to conduct the study, the number of years included in the dataset was limited to five.
While the data were available for many years prior to 2005, I believed that five years would be sufficient to try to provide some answers to the basic research questions. If provided more time, it would be an interesting next step to see what differences there might be in running the same regression models with data from earlier years. With the very strong economy of the 1990’s, I would like to see whether this would change the results that were found in this study.

Finally, there was the issue of omitted variables. As previously mentioned, the Bureau of Labor Statistics did not have unemployment data available for all nineteen industries. There were no numbers for the Management of Companies (Holding Companies) industry for any of the five years. This meant that the industry had to be excluded from the regression models, which included unemployment rate as an independent variable. It is unlikely that this one industry would have skewed the results too much but regardless it must be stated that there was one industry completely left out of the models.

**FUTURE RESEARCH**

Given the limitations of this study, there is an extensive amount of research that could be conducted to further examine this topic. In order to get a better understanding of marginal tax rates, and in accordance with the Clotfelter study, one could use my models and widen the dataset to include every year since 1990 and the marginal tax rates. This would be more in line with his analysis and also catch any affects of tax rates on charitable contributions since his study.
The idea that industry is what matters is also an area that could be studied further. This could be done by taking a select few industries and looking more in-depth at their various financial situations and market conditions. It could also mean looking more at the types of charities that particular industries give money to and what implications that has for policy makers and nonprofit managers. Overall, the findings of this study were unexpected but promising for those seeking to further understand what drives corporations by industry to give a portion of their profits to charitable organizations across America.
REFERENCES


