INCOME, WEALTH, AND CHARITABLE GIVING

An Undergraduate Research Scholars Thesis

by

DAVID MILLER and ELISA WULFSBERG

Submitted to the Undergraduate Research Scholars program at
Texas A&M University
in partial fulfillment of the requirements for the designation as an

UNDERGRADUATE RESEARCH SCHOLAR

Approved by Research Advisor: Dr. Jonathan Meer

May 2017

Major: Economics

TABLE OF CONTENTS

ABSTRACT

Income, Wealth, and Charitable Giving

David Miller and Elisa Wulfsberg
Department of Economics
Texas A&M University

Research Advisor: Dr. Jonathan Meer
Department of Economics
Texas A&M University

Using the Panel Study of Income Dynamics, we will study the relationship between charitable giving and income. We will use the data from years 2001 to 2013 to study the relationship between giving and income within individuals over the business cycle. Using panel data will allow us to account for intangible aspects that would affect a person's propensity to give that cannot be accounted for using other methods. Charitable giving continues to grow every year and it is increasingly important for organizations and the government to be able to analyze it as best they can. We find that while probability of charitable giving increases with income; the most charitable are those with the least income.

ACKNOWLEDGEMENTS

The collection of data used in this study was partly supported by the National Institutes of Health under grant number R01 HD069609 and the National Science Foundation under award number 1157698.

We would like to thank Dr. Mark Wilhelm, and his students, especially Xiao Han, of the IU Lilly School of Philanthropy for putting together the majority of the panel data that was used for analysis.

We would like to thank Dr. Meer, for his guidance and support throughout the course of this research.

Thanks also go to our friends and colleagues and the department faculty and staff for making my time at Texas A&M University a great experience.

Finally, thanks to our parents for their encouragement.

CHAPTER I

INTRODUCTION

As an economy fluctuates throughout the business cycle, donations to charity become more and more critical. Determining the individuals responsible for these donations allows us to understand the composition of charitable giving as a whole, and isolate what factors produce this influence. Charitable giving can have a wide effect on society. Beyond the simply monetary services, it provides a way of caring for one's neighbor that helps bind society together. Because of this, understanding charitable behavior is essential. In this paper, we will attempt to understand the effect that changes in both income and wealth have on charitable giving.

Using the Panel Study of Income Dynamics (PSID), we will track charitable giving of the same individuals from years 2001-2013. These years mark the transition of the U.S. economy from before, during, and after the Great Recession. Analyzing giving during this time allows us to understand changes in giving during times of economic need. One of the few preexisting works on this topic, Steinberg et al's *Earned, Owned, Or Transferred: Are Donations Sensitive to the Composition of Income and Wealth?* uses the PSID data as well, but limits its analysis to only the year 2005 (Steinberg 2010). This fails to take advantage of the panel nature of the dataset, and is something we are able to avoid in our approach. Additionally, Steinberg tracks families back to 1984 in an effort to note inheritance data, but in doing so, drops a large number of observations. Other similar papers successfully measure data over this time period, but fail in their use of donation data from only itemized IRS tax deductions (List 2011). This source

excludes more than 80% of the U.S. population and presents a selection bias that is fatal to needed randomization. By using the PSID as our dataset, we avoid this bias.

We define income as a net revenue or salary for a given year. Wealth is defined as nonrevenue assets, including things such as cars, houses, and inheritance. Throughout our analysis, we will measure the likelihood of giving in a few different ways. We will begin by looking at the probability of giving as a whole. Thereafter, we will measure both the total donated and the percentage of income donated. We will use head of household fixed effects. This will give us the ability to control for time-invariant individual characteristics, and further isolate the effect of income and wealth on giving. With this analysis, we find that as a measure of magnitude, the wealthy donate more. They are also the ones more likely to give in the first place. This type of conclusion seems rather intuitive. What is less intuitive, however, is that we find when viewed proportionally, it is actually the low-income earners who are the most generous.

CHAPTER II

DATA AND ECONOMETRIC METHODS

We use seven biennial waves of the Panel Study of Income Dynamics (PSID), spanning 2001 through 2013. The data include demographic, income, and wealth information, as well as questions about charitable giving in the previous calendar year. After removing observations with missing values, the data comprise 54,115 observations on 13,109 individuals. We construct indicators for whether a household reported giving in the previous year and the total amount given (adjusted for inflation). See Wilhelm (2006) for data set construction details. Looking at every year, 69.58% reported giving in at least one year. The mean gift conditional on making one is $2433.92 (s.d. = $6001.125) and the median is $899.25 (in 2013 dollars). The median percent of income given is 3.7%.

Our model uses fixed effect regressions to examine the relationship between income, wealth, and charitable giving. We look at the probability of giving, the amount given (not conditional on giving), and percent given out of income. Our results are shown using predicted values for the income and wealth dependent variables at different income and wealth values. Quadratic controls for income and wealth do not produce significantly different results from the income and wealth bins.

Income and wealth, but not giving amounts, were put into thousands. We created income and wealth bins in order to study the effects of the income and wealth gradient. Total income was cut at -200, then increments of 10 from 0 to 140, of 50 from 150 to 300, and then the PSID

caps income at 7,000. Total wealth was cut at -4000, -100, and -50, followed by increments of 25 from -25 to 400, of 100 from 500 to 1000, of 500 from 1500 to 3000, and finally anyone over 3000. The gradient was cut to reflect the diminishing marginal effect of income and wealth on a person's propensity to give. Income and wealth interactions did not appreciably change results. Summary statistics of these variables are shown in Table 1.

We also want to control for the housing market since that was one of the biggest factors in the Great Recession that occurred in the years covered by our data. For this we used the All-Transactions Indexes by state, estimated by sales price and appraisal data, from the Federal Housing Finance Agency. We used the fourth quarter data for each year as the housing price variable for that state. We used that variable to create a year-over-year change in housing value for each state. This is important because not everyone owns a home but the performance of the housing market could still have an effect on one's giving. It also serves as a good indication of which states were most affected by the housing bubble and the crash following.

We use the panel nature of the PSID and include head-of-household fixed effects. These account for all time-invariant attributes of the head including, most importantly, unobserved tastes for altruism. For this reason, we do not include variables that are constant in a person's lifetime. We also leave out age since it is collinear with the head and year effects. Our demographic controls include retirement status, disability status, health, marital status, number of children, and religious beliefs. Summary statistics of these variables are shown in Table 1 in the Appendix.

CHAPTER III

RESULTS

Our results show that giving in amount and probability of giving both trend upward as income and wealth increases, but the percent of income given decreases as income increases. Charitable giving is also much more responsive to income increase than wealth increase. Our findings can be found below in the figures presented. The tick marks correspond to the bins of income and wealth described earlier.

We begin with Figure 1 in the Appendix. Here we see the relationship between charitable giving and income in the three ways prescribed before. The expected means for probability of giving increases from 0.50 to about 0.60 at $50,000 of income. After that, probability stays between 0.60 and 0.65 as income increases to its cap at $7,000,000. The results for total giving show a similar trend. The expected means remain just over $1,000 until they begin to increase at $80,000 in income. These means are not conditional on giving. The percent given results show a reverse in trend between income and charitable giving. There is a constant decline in percentage giving as income increases. The rate is mostly constant except at zero income and at the highest levels of income. This also is not conditional on income. These results show that although probability of giving increases and remains at higher levels with higher income, the percent given of those who do give does not increase. The results also show a similar finding in the lower levels of income for total giving. Probability is increasing while total giving remains relatively flat.

The finding for the effect of wealth of giving behavior is much less precise as shown in Figure 2 in the Appendix. The wealth results show similar patterns to the results for income and giving with the exception of percent given. The expected means show that percent given rises with wealth as it does with probability and total giving. This could mean that as people become wealthier, income becomes a less potent way of predicting giving. The probability of giving findings show, except for negative wealth, that significant wealth has a probability of giving between 0.55 and 0.65. So people with higher wealth might be giving out of wealth rather than income. This could also explain the higher percent at low income earlier. Overall, the wealth results are much more noisy, which implies that there is some dynamic between wealth and income both factoring into a person's charitable giving decisions. Income might have a more direct or spontaneous impact in the moment, but wealth might have more a background role. Wealth might be more of an influence on long-term or planned giving behavior.

CHAPTER IV

CONCLUSION

Our results indicate a much higher level of generosity associated with individuals in lower income bins. This means that even though the rich may seemingly donate more, it is actually the poor who give more sacrificially. Higher wealth and income may influence the likelihood of giving to begin with, but stop short of proportionally increasing this giving. With these conclusions, we are able to get a clearer picture as to the holistic composition of charitable giving and individual influences of such. Yet, there is still much potential for future research in order to further understand if this giving behavior persists long-term.

REFERENCES

Auten, Gerald E., Holger Sieg, and Charles T. Clotfelter. "Charitable Giving, Income, and Taxes: An Analysis of Panel Data." *The American Economic Review* 92, no. 1 (2002): 371-382.

Federal Housing Finance Agency, public use dataset.

"Giving USA: Americans Donated an Estimated $358.38 Billion to Charity in 2014; Highest Total in Report's 60-year History." *Giving USA*. The Giving Foundation, 29 June 2015. Web. 10 Apr. 2016.

Pamala Wiepking, René Bekkers. "Who Gives? A Literature Review of Predictors of Charitable Giving. Part Two: Gender, Family Composition and Income." *Voluntary Sector Review* 3, no. 2 (2012): 217-245.

Panel Study of Income Dynamics, public use dataset. Produced and distributed by the Survey Research Center, Institute for Social Research, University of Michigan, Ann Arbor, MI 2015

Steinberg, Richard, Ye Zhang, Eleanor Brown, and Patrick Rooney. "Earned, Owned, Or Transferred: Are Donations Sensitive to the Composition of Income and Wealth?" *Munich Personal RePEc Archive* (2010).

"U.S. Public Becoming Less Religious." *Pew Research Center: Religion & Public Life*. N.p., 3 Nov. 2015. Web. 10 Apr. 2016.

APPENDIX

Figure 1: Income and Charitable Giving

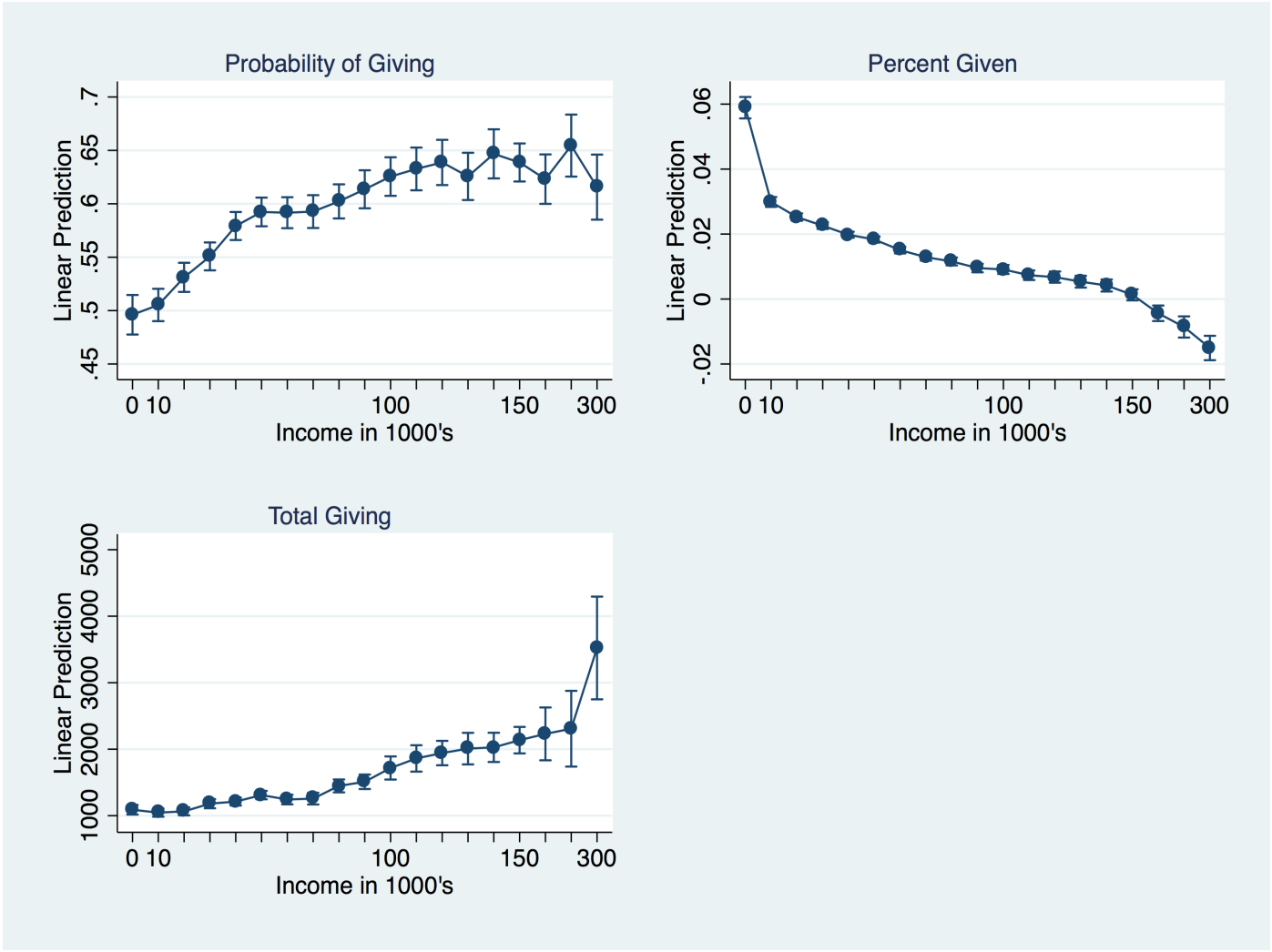

Figure 2: Wealth and Charitable Giving

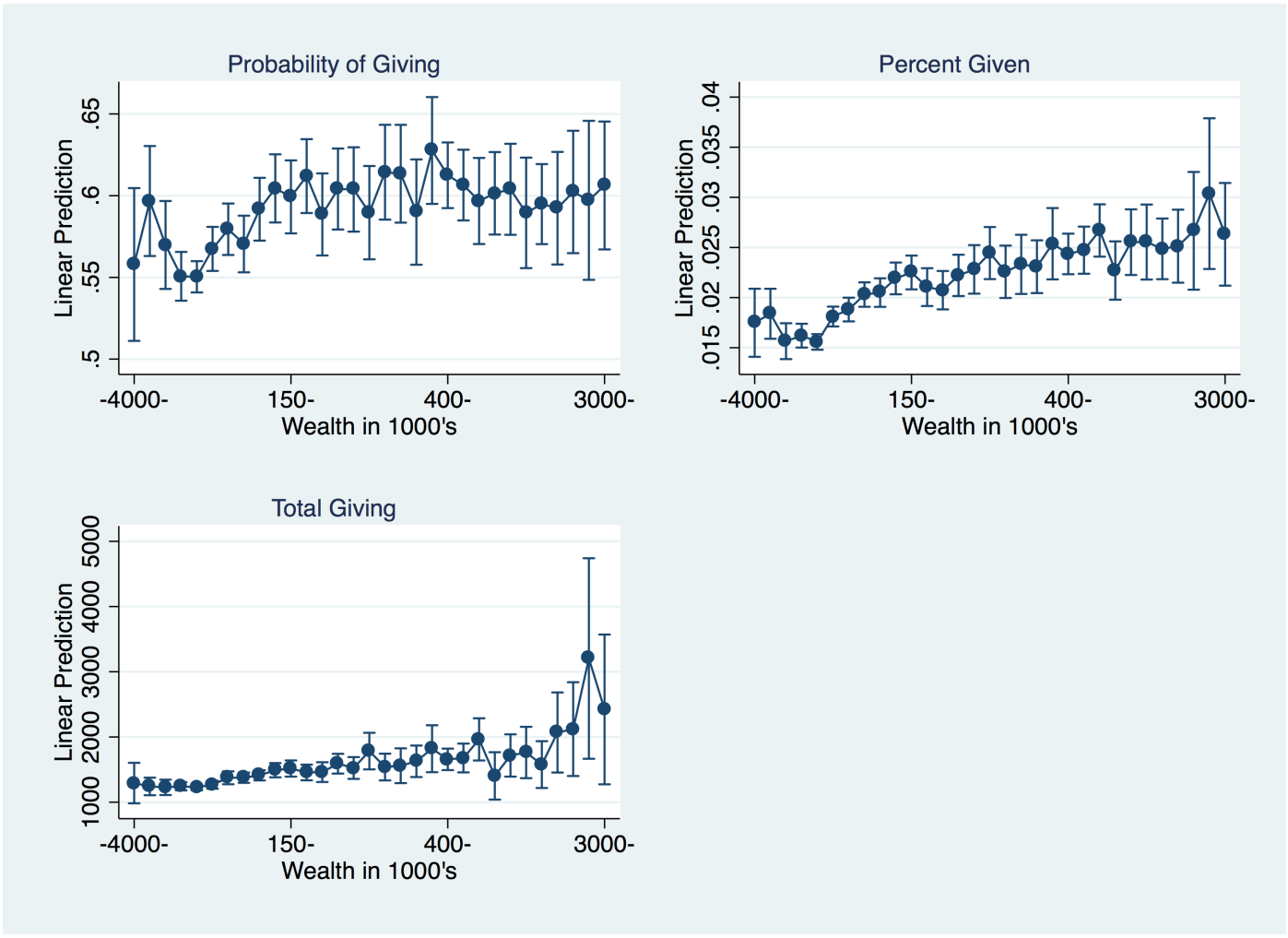

Table 1: Summary Statistics

		Mean	Standard Deviation	Median
Made a Donation		0.57	0.49	0
Total Giving (Unconditional)		$1397.79	$4704.30	$162.00
Total Giving (Conditional on Making a Gift)		$2433.93	$6001.13	$899.25
Family Income		$73.04	$108.47	$52.32
Wealth (Including Home Equity)		$255.24	$1268.40	$38.22
Age		45.37	16.35	44.00
Retired		0.12	0.33	0
Disabled		0.04	0.21	0
Female		0.31	0.46	0
Number of Children		0.83	1.17	0
African-American		0.35	0.48	0
Hispanic		0.07	0.26	0
Health	Excellent	0.20	0.40	0
	Very Good	0.33	0.47	0
	Good	0.30	0.46	0
	Fair	0.12	0.33	0
	Poor	0.04	0.20	0
Education	Dropout	0.18	0.38	0
	HS Degree	0.31	0.46	0
	Some College	0.25	0.43	0
	College Degree	0.15	0.36	0
	Grad Degree	0.10	0.29	0
Marital Status	Married/ Cohabiting	0.48	0.50	0
	Single	0.26	0.44	0
	Widowed	0.07	0.25	0
	Divorced	0.15	0.36	0
	Separated	0.04	0.21	0
Religious Affiliation	None	0.134	0.341	0
	Catholic	0.191	0.393	0
	Protestant	0.019	0.137	0
	Jewish	0.615	0.487	1
	Other Non-Christian	0.014	0.117	0
	Orthodox	0.002	0.047	0
	Other	0.025	0.156	0

Summary statistics reported for 54,115 observations; total giving conditional on making a gift is reported for 31,078 observations. Income and wealth are in thousands of 2013 dollars.