Web Appendix to "Tax Policy and Philanthropy:
A Primer on the Empirical Evidence for the U.S. and its Implications"

[Not for Publication]

June 2013

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Abstract: This appendix describes technical details and data sources behind the figures presented in "Tax Policy and Philanthropy: A Primer on the Empirical Evidence for the U.S. and its Implications" (Bakija 2013). It is posted at <http://www.williams.edu/Economics/wp/Bakija-Tax-Policy-and-Philanthropy-Web-Appendix.pdf>

DESCRIPTION OF DATA AND METHODOLOGY BEHIND FIGURES 1 THROUGH 4

Prices in figures 1 and 4

I define the price of a charitable donation as one minus the savings in combined federal and state income taxes associated with an additional dollar of charitable donation, taking into account all relevant aspects of income tax laws, including for example avoidance of capital gains taxes on donations of appreciated assets (precise details of how I define price are described in Bakija and Heim 2011, pp. 621-622). Calculating a representative price of charitable donations for each income class, state, and year, accounting for both federal and state income taxes, is complicated by the fact that, for confidentiality reasons, publicly available micro data on individual income tax returns omit information on state of residence for all returns prior to 1979, and for returns with Adjusted Gross Income (AGI) above $200,000 in 1979 and later years. In addition, calculating prices based on actual taxpayer characteristics that differ across time and across states would be problematic, for example because large charitable donations can push a taxpayer into a different tax bracket, inducing reverse-causality between donations and price, and because differences in taxpayer characteristics (such as income) across time and states likely have independent causal effects on charity, complicating the task of disentangling the effect of price from the effect of those other characteristics.

In order to get around these challenges and isolate variation in price that is caused by tax laws, while removing the variation in price that is caused by differing characteristics of taxpayers across time and across states, I follow a method similar to that used to construct figure 2 in Bakija and Heim (2011). I randomly select a sub-sample of 10 percent of the tax returns in the 1985 IRS Public Use Tax File, yielding a sample of about 10,000 returns, and replicate that same set of tax returns 51 times (once for each of the 50 states and DC), assigning all returns to the same state in each particular replication, and to each of the different states in different replications. I then in turn replicate that complete set of replicated returns another 38 times, once for each of the years 1970 through 2007, adjusting dollar-valued line items on each replicated tax return for inflation across the years, and adjusting property tax and sales tax deductions to state-specific values. Next, I compute federal and state income tax savings from

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an additional dollar of charitable donation for each of those replicated returns using the tax calculator program described in Bakija (2009), and use that to calculate the price of giving.

To compute representative prices for figure 1, I limit the sample of replicates to exogenous itemizers (defined in the text), and then compute a weighted average of the replicated returns' prices for each income class / year cell, where the weight is equal to the inverse of the sampling probability for that return in the original 1985 IRS Public Use File, times the fraction of federal income tax returns that came from that replicated return's assigned state in the year in question (thus producing, approximately, a nationally representative population-weighted average of prices across states in each income class and year). For figure 4, I compute a weighted mean of the prices among replicated returns that are exogenous itemizers with nominal AGI above $200,000 for each state and year, where the weight for each return is the inverse sampling probability for the return, times a factor that is proportional to the average real annual charitable deduction per return in that return's real income class from 1970-2007 (which makes the price more representative of the average price on each dollar of charitable donation, which is what we want). I then average the prices within each state across the years 1991-2007. In sum, I calculate weighted means of prices for an identical set of taxpayers in every year and state, holding constant the real dollar values of taxpayer income items and deductions (except for state taxes) across states and across time.

Figures 2 and 3

For figures 2 and 3, I computed nationally-representative estimates of charitable deductions, federal and state income tax liability, and income, for exogenous itemizer tax returns in each income class and year, from the IRS Public Use Tax Files (descriptions available at National Bureau of Economic Research 2013). These are large annual cross-sectional samples of federal individual income tax returns that provide information on all the relevant variables in each year between 1970 and 2007, except for 1971, 1974, 1976, and 1978. "Income" is defined as AGI reported on tax returns, plus excluded dividends and capital gains (the exclusions only applied before 1987), minus any social security or unemployment benefits included in AGI (since these are only included in AGI and available in the data starting in 1979 and 1984, respectively).

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"Disposable income" is defined as income less federal and state income tax liability, undoing any tax savings arising from charitable donations (as estimated by my tax calculator). This is a standard approach when the tax savings from charity are modeled as a price reduction. In that case, the budget available to be spent on charity is what disposable income would be if charity were zero -- adding the tax savings from charity to the budget while also treating it as a reduction in price would be double-counting the tax savings.

Non-price variables in figure 4

Disposable income is defined as the average value per return of AGI minus federal and state income tax liabilities, undoing the tax saving from charitable donations (as estimated by my tax calculator), among those with nominal AGI above $200,000 in each state and year, which is then converted to constant year 2007 dollars, and averaged over years 1991-2007. The charity variable is average charitable deduction per itemizer among returns with nominal AGI above $200,000 in each state and year, which is then converted to constant year 2007 dollars, and averaged over years 1991-2007. Data on these variables and the share of returns with nominal AGI above $200,000 that itemize in each state and year are from tables published on the IRS Tax Stats web site for 1997 through 2007, and in the IRS *Statistics of Income Bulletin* for 1991 through 1996 (Internal Revenue Service 2013 and various years). Data on shares of state population that are adherents to each religion in 2000 are from the *Religious Congregations and Membership Study, 2000, State File*, accessed via the web site of the Association of Religion Data Archives (2013), and described in Jones *et al.* (2002).

References

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