Marriage, Cohabitation, and Charitable Giving

by

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Abstract

I examine charitable giving behaviors by married and permanently cohabiting couples. Looking first at differences between married, cohabiting, and single households, I find that married couples are more likely to give and to give more than other groups, especially to religious organizations. I then look at specific couples over time, examining particularly those who transition from cohabitation to marriage, and find that though couples who will eventually get married are predisposed to giving even before their marriage, their giving increases after marriage in a way not explained by changes in income or other relevant independent variables. This change is explained in large part by differences in households' income elasticities of giving across couple groups and over time. I also check the responsiveness of permanently cohabiting couples' giving to changes in the tax-price of both household members, and show that their giving responds only to changes in the higher earner's marginal tax rate. The results suggest a connection between the commitment mechanism of marriage and investment in the household public good of charitable giving.

1 Introduction

As long ago as Becker (1981), economists have been interested in analysis of the structures of families, as well as the ways in which these structures affect their spending decisions. Among the most important is marriage. Obviously, a common reason people enter into a marriage relationship is to express love and demonstrate commitment, as these contribute to utility in and of themselves. But economists often consider marriage in another way as well: as a mechanism that exploits the increased returns to consumption and production of household goods that accompany a two-person family structure, relative to being single. Increasingly in recent decades, however, many people have been choosing to cohabit with their romantic partners, either in advance of or in place of a legal marriage (Lundberg and Pollak 2015). Since many of the production benefits (i.e. division of labor) and consumption benefits (i.e. shared household public goods) of a two-person household apply to cohabiting as well as married couples, the fact that people still choose to get married (and indeed, often choose to get married after first cohabiting) suggests some additional benefits to marriage—benefits distinct from those enjoyed by multi-person households.

One potential explanation in the rational-choice framework for the decision to marry rather than cohabit has to do with commitment. In particular, the social and legal costs of exiting a marriage relationship (divorce) are significantly higher than the costs of exiting a cohabiting or roommate relationship. Marriage, then, can act as a mechanism for commitment, decreasing the probability of the dissolution of the union by increasing the costs of exiting it. Lundberg and Pollak (2013) argue that couples choose marriage as a commitment device in order to "foster cooperation and encourage marriage-specific investments." Specifically, they emphasize investment in children and children's consumption goods, which are considered household public goods.

Children and their consumption, though, are not the only examples of household public goods, and it is of interest to know whether the commitment mechanism of marriage facilitates the same kind of increased investment in these other goods as well. One particular

example of a good that may be a household public good is a household's charitable giving. Charitable giving is of special interest because it is also a public good by the general definition, and increased levels of charity are of benefit (directly and indirectly) not only to donors and beneficiaries but also the public (Yörük 2015). As such, governments have often sought and adopted policies to encourage charitable giving. It becomes natural, then, to inquire about the relationship between the commitment mechanism of marriage, charitable giving, and related government policies that influence both spending on all kinds of public goods and the marriage decision itself.

In this paper, I explore marriage, cohabitation, and charitable giving. I first examine whether the intertemporal commitment mechanism of marriage leads to an increase in giving. I follow the rich literature on estimation of charitable giving by households as a function of their incomes, tax rates, and other characteristics and directly compare married and cohabiting couples (Andreoni, Brown, and Rischall 2003; Yörük 2010; Wiepking and Bekkers 2012). In the interest of identifying the effect of the commitment mechanism of marriage, I look especially closely at giving by couples who first cohabit and then later get married. In addition, I examine other factors that affect the decision of how much and to whom to give, again comparing married and cohabiting couples. Specifically, I explore the responsiveness of giving to taxes and income by and between these two categories of couples. Taxation is of special interest in the context of this topic, since married and cohabiting couples are treated differently by United States tax law, and charitable giving is tax-deductible. Thus, tax policies will likely influence simultaneously the decision to marry and the decision to give.

I use data from eight biennial waves of the Center on Philanthropy Panel Study (COPPS) supplement to the Panel Study of Income Dynamics (PSID) from 2001-2015 to examine differences in charitable giving by married and permanently cohabiting couples. I use an instrumental-variables approach to account for the endogenous tax-price of giving, and present evidence that married couples are more likely to give and give in greater amounts

than cohabiting couples, holding other variables constant. I find that when households transition between couple categories, they give most when they are married, and in particular once-cohabiting couples give more after they get married. These differences seem to be explained by a greater income elasticity of giving for married couples. Singles appear more responsive to the tax-price of giving than other kinds of households, and before getting married, cohabiting couples respond only to the tax-price faced by the higher earner in the household.

In section 2 I review the literature on marriage and cohabitation, charitable giving by households, and estimates for the tax-price elasticity of giving. In section 3 I develop a simple theoretical model to motivate the idea that the commitment mechanism of marriage increases investment in charitable gifts. In sections 4 and 5 I describe my data and present my results. Conclusions are in section 6.

2 Literature Review

In much of the early literature on the economics of the family, "marriage" is essentially synonymous with "two-person household," such that the feasible set contains only two elements: marriage and living alone (Becker 1973, 1981; Weiss 1997; Bergstrom 1997). The gains from marriage often described by economists—namely, joint production and consumption—are really just gains from living together (Weiss, 2008; Lam, 1988). Among the first to explicitly study the marriage contract as a commitment device, rather than simply a decision to form a union, were Matouschek and Rasul (2008). They provide evidence that commitment is the most plausible reason couples enter a marriage relationship, compared with alternative hypotheses of marriage as a signaling device or a method of providing exogenous payoff. Several other authors followed in demonstrating a possible theoretical relationship between such commitment and efficiency in household production and consumption, linking the higher costs of divorce to an increase in intra-couple cooperation (Iyigun 2009, Gemici

and Laufer 2010, Cigno 2011). Lundberg and Pollak (2013, 2015) emphasize the importance of this growing theoretical literature in explaining trends of increased cohabitation in the United States. They draw particular attention to the effects of marital commitment on investment in children, as well as the disproportionate adoption of this family structure by the poor and less educated, since parents seeking to invest more highly in their children get married in order to better facilitate that investment.

While marriage and charitable giving have been studied extensively by economists, few have analyzed the differences between cohabiting couples and married couples in this area; indeed, few have even considered the existence of cohabiting couples. In Andreoni and Payne's (2013) overview of the charitable giving literature, they speak of giving by households as synonymous with giving by married couples. Andreoni, Brown, and Rischall's (2003) seminal paper specifically examines such giving by married couples, finding differences in the preferences over giving of single men and women, and showing that these differences continue into marriage by analyzing giving broken down by who was the decision maker in the household (the husband, the wife, or the couple jointly). They also observe costs of bargaining over charitable gifts by couples, in that couples who decide together give less than they would be predicted to give if they had decided independently and unilaterally. However, Wilhelm (2007) shows that the quality of the data used by Andreoni, Brown, and Rischall (the Survey of Giving and Volunteering) is lower than that available in the PSID. Yörük (2010) attempts to replicate their results using the PSID, but finds instead positive returns to bargaining over charitable giving by legally married couples.

Other studies have followed Andreoni, Brown, and Rischall (2003) and Yörük (2010) in examining giving by married couples, but none have yet sufficiently analyzed the effects of marriage relative to permanent cohabitation. Wiepking and Bekkers (2012) show that legal marriage is correlated with more and bigger charitable gifts, but only relative to non-marriage, rather than explicitly permanent cohabitation. Wiepking and Maas (2009) find positive effects on charitable giving from having a partner of any kind, though they do

not separate cohabiting couples from married ones. Eagle, Keister, and Read (2018) look at giving at various intersections of gender, marital status, and religion using the 2006 portraits of American life study and find households headed by never-married females have lower giving levels compared with those headed by divorced and widowed women, but do not find the same association for households headed by single males. While this study briefly considers cohabiting couples, their preliminary analyses find no differences between their giving and that of single, never married people and therefore do not report them as a distinct category. Further, their analysis was cross sectional and so could not look at the over-time effect of getting married on giving.

Economists have used the PSID to look at both 1) cohabitation, marriage, and taxes, and 2) the tax-price elasticity of giving; however, none have studied the two simultaneously. Alm and Whittington (2003) find that tax policy affects the decision of already-cohabiting couples to get married, though they do not look at charitable giving since the COPPS data was not available at the time of their study. Brooks (2007) and Backus and Grant (2018) each use the COPPS to estimate the tax-price of giving utilizing slightly different methodologies, though neither study seeks to estimate separate elasticities by couple status. Meer and Priday (2020), in an attempt to anticipate the effects of the Tax Cuts and Jobs Act (TCJA) on charitable giving, estimate the tax-price of giving in a different way than most of the preceding literature. For my own estimates, I follow this method and describe it explicitly in section 4.

This paper contributes to the already-existing literature by explicitly seeking a causal relationship between the commitment device of marriage and charitable giving, by studying the giving of permanently cohabiting couples as well as married couples. In addition, I seek to discern differences in the tax-price elasticity of giving between married and cohabiting couples. Before empirically testing for these relationships, I first provide a brief theoretical motivation.

3 Theoretical Motivation

3.1 How does commitment affect giving?

Households can consume two kinds of goods—private goods and household public goods. If a private good is consumed by one member of the household, it cannot be consumed by another. Public goods (e.g. living space, heating, the well-being of a couple's children), on the other hand, are non-rivalrous, and can be consumed jointly by members of the household. Since a household's charitable donations often provide benefit to all of its members, charitable giving can be modeled as a household public good.

I present a simple model to motivate the idea that the increased exit costs (and therefore, increased commitment) of marriage would increase the amounts of household public goods consumed by a household, relative to a non-legal romantic union. In particular, marriage should increase a household's charitable donations. The model extends the simple explanation of household giving presented in Andreoni, Brown, and Rischall (2003) to account for the effects of intertemporal commitment.

Consider a two-person household with members $i \in \{h, w\}$. The members of the household are not necessarily married, but they participate in a romantic union such that they each derive utility U_i from the consumption of relational capital (such as trust, love, social preferences, and actions that take effort). Let g be the vector of household public goods including relational capital and shared consumption goods, let x_i be the vector of private goods consumed by household member i, and suppose that $U_i = U_i(x_i, g)$. The household budget set S restricts the possible choices of allocations, so that $(x_h, x_w, g) \in S$ (Bergstrom 1997). Assume further that there is sufficient overlap between household members in their preferences over different charities, such that each member's utility function is increasing and monotone in the level of donations, and that the act of donating contributes to the stock of relational capital. Then donations are a household public good and an entry in the vector

g.[1]

In order to understand the effect of the intertemporal commitment mechanism of marriage on charitable giving, now consider a linear, intertemporal utility function for a member i of the two-person household in two periods $t \in \{1, 2\}$. Assume that goods consumed in period 1 also provide utility in period 2, but that their value deteriorates such that $U_{i2}(x_{i1}, g_1) = \lambda \cdot U_{i1}(x_{i1}, g_1))$ for $\lambda \in [0, 1]$. This deterioration occurs in part because some goods are literally used up, and in part because some goods (such as those composing the stock of relational capital) are worth less as time goes on. Household public goods (and particularly those composing the stock of relational capital) can be consumed and provide benefit only if the household union remains intact.[2] Then, if the union remains intact in period 2, we have the expected utility:

$$U_i = x_{i1} + g_1 + \delta \cdot (\lambda \cdot (x_{i1} + g_1) + x_{i2}^u + g_2^u) \tag{1}$$

where $\delta \in [0, 1]$ is the discount factor, and x_{i2}^u and g_2^u are the levels of private and public goods chosen by the household in period 2. If instead the union dissolves in period 2:

$$U_i = x_{i1} + g_1 + \delta \cdot (\lambda \cdot (x_{i1}) + x_{i2}^s) \tag{2}$$

where x_{i2}^s is the level of private goods chosen by the single individual i in period 2.

The two-person household can be either married (m) or cohabiting (c). Let the probabilities that the union remains intact, given that the couple is married or cohabiting, be $\rho_m, \rho_c \in [0, 1]$ respectively. Since the costs of exiting a marriage are higher than those of exiting a cohabiting relationship, let $\rho_m > \rho_c$. Clearly under this assumption, and as long as

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[1]It is not totally obvious that warm-glow giving, where the act of giving itself provides utility rather than simply the amount of the donation, is a household public good (Andreoni 1990). This model instead considers only the utility provided directly by the amount of giving.

[2]Some household public goods may possibly continue to provide benefit even after the union dissolves—but certainly the stock of relational capital disappears with the dissolution of the union, and g decreases. I make the simplifying assumption that g decreases to zero. Without this assumption, the conclusions of the model do not change as long as the act of giving contributes to the stock of relational capital.

$\delta, \lambda > 0$, the expected utility obtained from consuming the household public good in period 1 for a married couple is greater than that for a cohabiting couple:

$$U_i^m(g_1) = g_1 \cdot (1 + (\rho_m \cdot \delta \cdot \lambda)) > g_1 \cdot (1 + (\rho_c \cdot \delta \cdot \lambda)) = U_i^c(g_1) \tag{3}$$

since $(1 + (\rho_m \cdot \delta \cdot \lambda)) > (1 + (\rho_c \cdot \delta \cdot \lambda))$. That is, the expected future value of consuming g_1 in period 1 is higher for a person in a married household compared with a cohabiting household, since the likelihood that g_1 will continue to provide utility in period 2 is higher. For a utility-maximizing household, then, consumption of g (and in particular, charitable giving) would be higher for a married rather than cohabiting couple, holding all else constant. This is first hypothesis I will test empirically in this paper.

It is also possible that commitment increases charitable giving in a way not directly connected to its status as a household public good. Namely, giving is a function of income, and because of risk-sharing and income-pooling associated with marriage, married couples may be the most secure in projecting their future income. This could make married couples "richer" given the same amount of income compared to other kinds of households, and ultimately result in higher levels of giving. If this were the case, we would expect to observe a greater income elasticity of giving for married couples compared with other households. This is the second hypothesis I test in this paper.

3.2   The tax-price of giving for cohabiting couples

In the United States, tax filers who itemize deductions can claim charitable donations as a deduction, reducing their taxable income. Hence, if τ is the marginal tax rate, a household that itemizes deductions only forgoes $1 - \tau$ dollars of other consumption to give 1 dollar to charity, effectively making $p \equiv 1 - \tau$ the price of giving (Andreoni and Payne 2013).

I expect cohabiting couples to respond only to changes in the tax-price faced by the household member with higher marginal tax rate. To see why, suppose there is a two-

person, unmarried household in which household member 1 faces a higher marginal tax rate than household member 2, that is, $\tau_1 > \tau_2$. Then $p_1 < p_2$, and the couple would assign all charitable deductions to household member 1 in order to face the lowest price. Then if p_2 increases or decreases by less than $p_2 - p_1$, the household's giving will not respond to this change. This is the third hypothesis I test empirically in this paper. Before reporting the results, I describe the dataset I use.

4   Description of Data

I use data from the 2001-2015 biennial waves of the Panel Study of Income Dynamics (PSID), a national panel survey that has been collected annually or biennially since 1968. In addition to the PSID's detailed information on employment, income, wealth, and expenditures, I draw on the Center on Philanthropy Panel Study (COPPS). This supplement to the PSID began in 2001 and asks respondents questions about the amounts of their charitable contributions, broken down into several classes.

The unit of analysis is the household, which I specify by following the "head" of each family (the male in a heterosexual married/cohabiting couple or a single adult of either sex), as well as all individuals associated to the head, for as long as they remain in the survey. Across the eight waves of data that I use (beginning in 2001 and continuing biennially until 2015), the total number of household-year observations is 67,227. I combine the household level information with individual level information, of which there are 188,744 unique records. Following Wilhelm (2006) and much of the charitable giving literature studying the PSID, I remove the low-income Survey of Economic Opportunity (SEO) over-sample. In addition, I remove observations of families who were not asked the charitable giving questions in a given year, as well as same sex couples ($n = 311$), couples in which the "head" is a married woman ($n = 91$), and families with negative income ($n = 45$).[3] My final sample is of 41,277

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[3]Same sex couples were not identified by the PSID until 2015. Married women are heads only if their husband is incapacitated or completely uncooperative. I remove these few observations in order to have a

total observations, representing 8,943 unique households.

The "status" of a couple (married, permanently cohabiting, or single), while not explicitly reported by the PSID, can be determined by a combination of the marital status of the head and the "relationship to head" variable recorded in the individual file. Here, the PSID distinguishes between wives and "wives" (the latter referring to partners who have lived in the family unit for more than one year). The survey also identifies partners who have lived in the family unit for less than a year. However, since relatively little information is reported about these "first-year cohabiting" partners, I consider these families a distinct category from permanently-cohabiting families.

The PSID breaks down a household's yearly giving into 11 charity "classes". Following Andreoni, Brown, and Rischall (2003) I construct a measure based on the Herfindahl-Hirschman Index (HHI) to examine whether there are differences in the distribution of categories of gifts between various types of households. In particular,

$$HHI = \sum_{j=1}^{11} s_j^2 \tag{4}$$

where s_j is the amount given to charity class j divided by the total amount given. Hence, $0 \leq HHI \leq 1$, with a household's HHI in a given year equal to 1 if the household gave to only one class of charity in that year, and equal to 0.091 if the household gave equally to all 11 classes of charity in that year.

In table 1, I report the mean values of key PSID variables broken down by couple status. On average, married couples give much more ($\sim$700%) and are about 37.5% more likely to give when compared with permanently cohabiting couples. In figure 1, I present the distribution of the natural logarithm of (1 + total giving), again broken down by couple status. Married couples concentrate their giving at higher amounts and give zero dollars less frequently when compared with other couple types. It is important to note, however,

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more uniform sample.

that married couples also face lower prices, have higher incomes, and are more religious than permanently cohabiting couples—all factors which are often associated with higher levels of charitable giving.

Table 1: Summary statistics

	(1) Married	(2) Permanent Cohabiting	(3) First-year Cohabiting	(4) Single
Gives to charity	.7756	.3993	.3652	.5318
Total giving	2,144.86	309.76	297.31	744.39
(Giving | Giving > 0)	2,765.27	775.68	814.09	1,399.87
Price	.9066	.9622	.9772	.9622
Itemizer (estimated)	.4062	.0903	.1089	.1782
Income (in 2000 dollars)	86,517.97	54,801.89	42,030.33	35,064.81
Age of head	47.81	36.80	29.94	46.79
Head HS grad	.8665	.7276	.8240	.8330
Head attended college	.5895	.3918	.5168	.5262
Head college grad	.3554	.1622	.2279	.2583
Child number	.9199	.8544	.6053	.3800
Catholic	.2136	.1651	.1536	.1782
Jewish	.0297	.0183	.0193	.0256
Protestant	.5794	.4230	.4578	.5761
Other non-Christian	.0072	.0121	.0142	.0098
Greek/Russian Orthodox	.0017	.0021	0	.0026
Other	.0073	.0092	.0214	.0156
Atheist/Agnostic	.1274	.2920	.3032	.1678
Religious giving	1,340.88	92.63	60.13	367.79
Secular giving	803.98	217.13	237.18	376.60
n	23,122	2,331	979	14,579

Notes: the sample includes participants from the PSID waves 2001-2015. I exclude the SEO low-income oversample, same-sex couples, couples in which the "head" is a married woman, and families with negative income.

One of the key variables studied in the literature on charitable giving is the tax-price of giving. However, The PSID does not report the marginal tax rates of the families in the
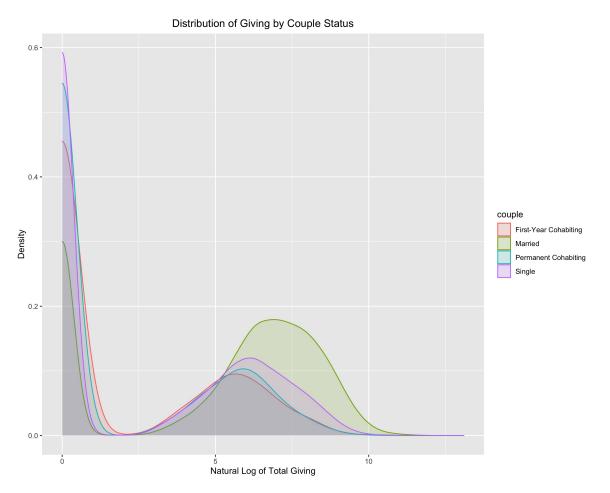
Figure 1: Distribution of giving by couple status

sample. In order to compute the tax-price of giving, then, I first use the National Bureau of
Economic Research's Taxsim program (Feenberg and Coutts 1993) as well as the information
provided in the PSID about marital status, number of children, labor and interest income,
and various deductions.[4] Typically, the tax-price of giving is defined to be equal to 1 if the
household does not itemize deductions and $1 - \tau_{it}$ if they do, with τ_{it} equal to the marginal
tax rate of household i in time t. However, many families receive credits from the Earned
Income Tax Credit (EITC) and the Child Tax Credit (CTC), which have phase-in and phase-
out rates dependent on income and thus affect the family's marginal tax rate as reported by

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[4]While the PSID does not directly report mortgage interest paid (which is tax deductible) it does report
remaining principle amount, monthly mortgage payment, current interest rate, year obtained, and years to
pay for up to two of each family's mortgages. I use the method described in Kimberlin, Kim, and Shaefer
(2015) and these variables to calculate mortgage interest paid.

Taxsim. Since both of these credits are based solely on earned income, they do not affect the tax-price of giving. To account for this disparity between the reported marginal tax rate and the actual rate that affects the tax-price of giving, as well as any other similar complications in the tax code, I follow Meer and Priday (2020) and estimate the tax-price of giving as

$$Price_{it} = 1 + \frac{T'_{it} - T_{it}}{100} \tag{5}$$

where T_{it} is the tax liability of household i in time t and T'_{it} is the tax liability of household i in time t if they were to have given \$100 more to charity in the previous year. This captures the actual effect of giving on taxes paid and thus acts as a more accurate measure of the tax-price of giving, compared with simply using the marginal tax rate reported by Taxsim. For a small number of households, donating \$100 more to charity would cause them to begin itemizing—again following Meer and Priday (2020), I set the price for these households equal to 1.

For permanently cohabiting couples, who may not file as married under the U.S. system of household taxation, I estimate the tax-price of giving separately for the head and the "wife," assuming that all child care expenses and children are assigned to the higher earner. Assuming similarly that families maximize their tax benefits from giving, I set the tax-price for these households equal to the minimum of the price faced by the head and that faced by the wife. For first-year cohabiting couples, little information is reported about the cohabiting partner of the head, and thus I calculate the price for the household in the same way as I would for a single person.

5 Empirical Analysis

5.1 Empirical strategy

The basic model I estimate is the following:

$$
\begin{aligned}
Giving_{it} = {} & \beta_1 \cdot Cohabiting_{it} + \beta_2 \cdot Single_{it} \\
& + \gamma_1 \cdot Cohabiting_{it} \times Price_{it} \\
& + \gamma_2 \cdot Single_{it} \times Price_{it} \\
& + \theta \cdot Price_{it} + \pi \cdot X_{it} + \alpha_t + \varepsilon_{it}
\end{aligned} \tag{6}
$$

where $Giving_{it}$ is the probability or amount of giving by household i in year t, $Cohabiting_{it}$ and $Single_{it}$ are dummy variables, X_{it} is a vector of demographic controls, α_t represents year-level fixed effects, and ε_{it} is a random error term. Often addressed in the literature on charitable giving is the problem of the endogeneity of the tax-price of giving. Namely, since households can donate enough to move into a lower tax bracket, giving will have a negative effect on tax rates (and a positive effect on price) and the estimates for the tax-price elasticity of giving will be biased downwards. To account for this, I again follow Meer and Priday (2020) and construct the "first-dollar" tax-price of giving (that is, the marginal tax rate a family would face if they were to give zero dollars to charity) in the same way as the "last-dollar" price above, but with $T_{it} = 0$ and $T'_{it} = 100$. I use this constructed variable to instrument for price, since it is highly correlated with the actual price, but affected only by the tax code and not by a household's charitable giving decisions.

I use the estimates for β_1 and β_2 to calculate average marginal effects, and while I generally interpret them as the effects of cohabiting or being single on charitable giving outcomes relative to being married, the marriage decision is also likely endogenous. Unobservable factors, unrelated to commitment, may simultaneously influence the decision to be married and the decision to give, and thus it is with caution that I argue a causal relationship in the

absence of a strong instrument for marriage. Nevertheless, I proceed with the analysis and use fixed effects and over-time variation to provide some evidence for a causal link.

5.2 Comparison of giving by categories of couples

My first objective is to investigate whether there are differences in charitable giving between married couples, cohabiting couples, and single people, on both the extensive and intensive margins of giving. In anticipation of results from two-stage least squares (2SLS) regressions, in table 2 I present the results from the first-stage regressions explaining the endogenous tax-price of giving (and its interaction terms) with their respective instruments. The coefficient estimates for each endogenous variable's instrument are statistically significant and close to 1, indicating high levels of correlation and suggesting that the instruments are strong. In later sections of my analysis, I work with different sub-samples of the data and re-estimate these first stage regressions, with similar strong results.

The first column of table 3 contains the results of a 2SLS estimation of the probability of making a charitable gift for a given household in a given year, while the second column of table 3 reports the same regression with the natural logarithm of total charitable contributions as the dependent variable.[5] In addition to a set of demographic controls, income, and year fixed effects, both regressions contain a set of dummy variables that indicate the household's "couple status": married, permanently cohabiting, first-year cohabiting, and single. I also include the instrumented variables from the first stage: the natural logarithm of the last-dollar tax-price of giving, as well as the couple status dummies interacted with this variable. Standard errors are clustered at the household level and reported in parentheses.

The results suggest that permanently cohabiting, first-year cohabiting, and single households are all significantly less likely to make a gift than married couples, and that their gifts are significantly smaller than those of married couples, holding other relevant explanatory variables constant. A permanently cohabiting household is about 17% less likely to give to

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[5]I add the constant one to the contribution amount before taking the natural logarithm.

Table 2: First-stage results

	(1) Log(price)	(2) Perm. Coh. × Log(price)	(3) 1st Y. Coh. × Log(price)	(4) Single × Log(price)
Log(first-dollar price)	.8213***	-.0007**	-.0002*	-.0129***
	(.0072)	(.0004)	(.0001)	(.0014)
Perm. Coh × Log(1st price)	.0741***	.9957***	-.0001	-.0038***
	(.0059)	(.0027)	(.0001)	(.0008)
1st Y. Coh. × Log(1st price)	.0733***	-.0002	.9935***	-.0069***
	(.0077)	(.0003)	(.0030)	(.0012)
Single × Log(1st price)	.0579***	-.0001	-.0001*	.9625***
	(.0051)	(.0001)	(.0001)	(.0029)
Log(income)	-.0180***	-.0000	.0001**	.0065***
	(.0040)	(.0001)	(.0001)	(.0007)
Log(income)^2	.0048***	.0000	-.0000**	-.0010***
	(.0008)	(.0000)	(.0000)	(.0001)
Log(income)^3	-.0003***	.0000*	.0000**	.0000***
	(.0000)	(.0000)	(.0000)	(.0000)
n	41,273	41,273	41,273	41,273
Unique households	8,943	8,943	8,943	8,943

***$p < 0.01$ **$p < 0.05$ *$p < 0.1$

Notes: In addition to the variables listed, I include age of the head of household and its quadratic, dummy variables for education of the head, dummy variables for race, dummy variables for religious preference, number of children, and year fixed effects in each first-stage regression.

charity than a married household with the similar income and demographics. A representative married couple is predicted to give greater than four times more than a cohabiting couple ($175.47 vs. $40.82).[6] Additionally, in terms of both the probability and amount of giving, the hypothesis that permanently cohabiting couples and singles behave in the same way is rejected ($\chi^2(1) = 43.51$, $p = 0.0000$; $\chi^2(1) = 64.77$, $p = 0.0000$, respectively), with singles predicted as more likely to give and to give more than permanent cohabitors. Singles

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[6]The representative household from which these predictions are based is a white, protestant, family with one child and a 46 year old head of household who attended some college. They have an income of $77,963 and face a tax price of .9312.

Table 3: Couple status and giving

	(1)	(2)	(3)	(4)
	Pr(gives)	Log(giving)	LPM w/ FE	OLS w/ FE
Perm. cohabiting	-.1715***	-1.453***	-.0787***	-.5867***
	(.0135)	(.0869)	(.0164)	(.0991)
1st-year cohabiting	-.1492***	-1.181***	-.0871***	-.5636***
	(.0183)	(.1230)	(.0198)	(.1269)
Single	-.0803***	-.7400***	-.0925***	-.6103***
	(.0081)	(.0603)	(.0140)	(.0907)
Married (omitted)	–	–	–	–
Log(price)	-.3419***	-2.567***	-.0653***	-.8639***
	(.0283)	(.2242)	(.0239)	(.1697)
PC $\times$ Log(price)	-.3558***	-.6959	-.1101	-.2298
	(.1079)	(.7237)	(.1171)	(.7442)
1YC $\times$ Log(price)	-.2791	-.7194	-.2639*	-1.416
	(.1787)	(1.284)	(.1503)	(1.051)
Single $\times$ Log(price)	-.2591***	-1.450***	-.1415***	-.8792**
	(.0500)	(.3979)	(.0521)	(.3550)
Log(income)	-.1926***	-.8089***	-.0656***	-.2496**
	(.0190)	(.1362)	(.0184)	(.1191)
Log(income)^2	.0337***	.1124***	.0117***	.0387*
	(.0032)	(.0239)	(.0032)	(.0214)
Log(income)^3	-.0012***	-.0020*	-.0004***	-.0006
	(.0001)	(.0011)	(.0001)	(.0010)
H_0 : Single = PC	43.51***	64.32***	0.62	0.05
n	41,273	41,273	41,273	41,273
Unique households	8,943	8,943	8,943	8,943

***$p < 0.01$ **$p < 0.05$ *$p < 0.1$

Notes: results are derived from the PSID bienniel waves 2001-2015. In addition to the variables listed, I also include age of the head of household and its quadratic, dummy variables for education of the head, dummy variables for race, dummy variables for religious preference, number of children, and year fixed effects. Reported are the two-stage least squares estimates and OLS regressions including the same independent variables and household fixed effects. The values reported for the couple dummy variables and log of price are average marginal effects; I also report the $\chi^2(1)$ test statistics for the null hypothesis that these average marginal effects are equal for singles and permanent cohabitors. Standard errors are clustered at the household level and in parentheses.

seem to react differently to a change in the tax-price than do married couples—they are significantly more responsive in terms of both probabilities and amounts. The model predicts that a one-percent increase in the tax-price of giving would, on average, decrease the probability that a single person gives by about 0.60% compared with a married couple's 0.34%; the same increase in price would decrease a married couple's giving by about 2.57% on average, but a single person's giving by just more than 4%. While permanently cohabiting couples are also significantly more responsive to the tax-price than married couples in terms of probabilities of giving, the difference is not significant in terms of amounts. When comparing singles and cohabiting couples, this difference is neither significant on the extensive nor intensive margin ($\chi^2(1) = 0.72$, $p = 0.3961$; $\chi^2(1) = 0.94$, $p = 0.3310$, respectively).

In column 3 of table 3 I report the results of a linear probability model (LPM) explaining the decision to give with the same set of explanatory variables as the 2SLS regression, as well as household-level fixed effects. In column 4 I report the results of an ordinary least squares (OLS) regression with those same explanatory variables and fixed effects. Household level fixed effects are usually included in empirical estimations of the tax-price of giving to control for the time-invariant features of households that are correlated both with the household's marginal tax rate and charitable giving. Indeed, estimating the amount-of-giving equation with household fixed effects results in a smaller estimate for the tax-price elasticity of giving (-1.08 if the interaction terms are not included), which is more consistent with the typical estimates in the literature that are close to -1 (Meer and Priday 2020). However, these fixed effects limit the observable variation in giving by different categories of couples. In particular, the regression coefficients capture only the effects of changing couple status *within* a given household—for example, from starting a relationship, getting divorced, or transitioning from cohabitation to marriage. While the inclusion of household fixed effects does not change the fact that cohabiting and single households appear to give significantly less often and less than do married couples, the effects are diminished—cohabiting couples are expected to give about 7.9% less often and 58.7% less than similar married couples. Further, the difference between

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singles and permanently cohabiting couples is not robust to this change in specification: it is no longer significant ($\chi^2(1) = 0.62$, $p = 0.4322$ for probabilities; $\chi^2(1) = 0.05$, $p = 0.8246$ for amounts), and singles are instead predicted to give both less often and less than permanently cohabiting couples. Singles again appear to be more responsive to tax-prices than married couples, but the difference in responsiveness between permanent cohabitors and married couples disappears. Hence, while we can confidently say that permanently cohabiting couples are less likely to give and give less than married couples, and that giving by singles is more responsive to changes in the tax-price than giving by married couples, the existence of other differences is less clear.

Also of interest is whether there are differences in the preferred destinations of giving between households with different couple status. In table 4, I present the results of several regressions to investigate this question. In column 1, I estimate the same 2SLS regressions as those reported in columns 1 and 2 of table 3 in order to predict the HHI of a couple in a given year, where HHI is constructed as described earlier. Though the results of two-sample t-tests suggest differences in the mean levels of HHI for permanently cohabiting and married couples—and in particular that the giving of permanently cohabiting couples is more concentrated—when controlling for relevant independent variables, permanently cohabiting couples are actually predicted to concentrate their giving *less* than married couples. However, this difference is not statistically significant.

In columns 2 through 12 of table 4, I estimate the same regressions but with the probabilities and amounts of giving to specific charity classes as the dependent variables. I report the coefficient estimates for each couple status, as well as the $\chi^2(1)$ statistic comparing permanently cohabiting couples and singles. In most cases, the relative probabilities and amounts of giving restricted to specific classes are the same as the probabilities and amounts for all giving, i.e., married couples give more often and more than singles, who give more often and more than permanently cohabiting couples. Exceptions to this rule are in environmental and international giving, where singles are expected to give more often and more than all other

Table 4: Couple status and giving by charity class

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	HHI	Rel.	Youth	Env.	Comb.	Need	Health	Edu.	Art	Neigh.	Int.	Other
					Probability of giving							
Perm. coh.	–	-.212***	-.032***	-.006	-.072***	-.065***	-.054***	-.048***	.005	-.010***	-.006	-.016***
		(.013)	(.007)	(.007)	(.010)	(.011)	(.009)	(.007)	(.006)	(.004)	(.005)	(.005)
1st-year coh.	–	-.182***	-.021***	-.006	-.045***	-.056***	-.030***	-.011	.002	-.004	-.006	.001
		(.014)	(.008)	(.008)	(.012)	(.013)	(.011)	(.009)	(.006)	(.005)	(.005)	(.007)
Single	–	-.130***	-.022***	.002	-.042***	-.024***	-.021***	-.008	.008	-.005	.003	-.000
		(.010)	(.005)	(.005)	(.008)	(.008)	(.007)	(.006)	(.005)	(.003)	(.004)	(.004)
Mar. (omitted)	–	–	–	–	–	–	–	–	–	–	–	–
H_0 : single = PC	–	42.2***	2.43	1.0	8.3***	14.7***	13.3***	30.3***	0.3	1.9	3.0*	9.4**
					Amount of giving							
Perm. coh.	-.001	-1.56***	-.123***	-.028	-.386***	-.335***	-.219***	-.221***	.016	-.044***	-.028	-.082***
	(.011)	(.080)	(.029)	(.031)	(.053)	(.057)	(.042)	(.034)	(.028)	(.015)	(.020)	(.024)
1st-year coh.	-.018	-1.32***	-.072**	-.023	-.299***	-.274***	-.086	-.036	.018	-.012	-.024	.014
	(.015)	(.084)	(.034)	(.035)	(.064)	(.068)	(.052)	(.042)	(.030)	(.021)	(.025)	(.036)
Single	-.017***	-1.03***	-.087	.016	-.226***	-.116***	-.065**	-.025	.047**	-.017	.009	.003
	(.006)	(.072)	(.023)	(.024)	(.042)	(.042)	(.035)	(.032)	(.025)	(.014)	(.009)	(.021)
Mar. (omitted)	–	–	–	–	–	–	–	–	–	–	–	–
H_0 : single = PC	2.1	46.6***	1.5	1.9	8.9***	14.4***	13.0***	29.4	1.1	2.8*	2.7*	12.13***
n	26,718	41,273	41,273	41,273	41,273	41,273	41,273	41,273	41,273	41,273	41,273	41,273
Unique households	6,748	8,943	8,943	8,943	8,943	8,943	8,943	8,943	8,943	8,943	8,943	8,943

***$p < 0.01$ **$p < 0.05$ *$p < 0.1$

Notes: all regressions also include the instrumented log(price); log(income), its quadratic, and cubic; the demographic variables as in table 3; and year fixed effects. Reported are the coefficient estimates as well as $\chi^2(1)$ statistics for the given null hypothesis. The sample size and number of unique households are smaller in the HHI regression because I restrict the sample to families who gave > \$0. Standard errors clustered at the household level are in parentheses.

groups, as well as in art, where married couples are expected to give least among all categories of households. However, none of these "unexpected" differences are statistically significant. The most dramatic differences are in religious giving, where married couples dominate all other household categories, especially permanently cohabiting couples—a permanently cohabiting household is predicted 21.2% less likely to make a religious donation, and the representative married household is predicted to give 4.78 times more to religious organizations than if they were cohabiting.

One possible explanation for the disparity in giving by cohabiting couples relative to married couples is that the survey respondent in a cohabiting couple might not be aware of their partner's giving, leading to under-reporting by cohabiting couples relative to married couples. However, in the 2003 and 2005 waves of the PSID, survey respondents were asked the question, "who in your family was responsible for decisions on how much support to give individual charities in the previous year?" Possible answers were: the husband decides, the wife decides, the couple decides jointly, or the couple decides separately. When I restrict my analysis to these years and remove all couples who decide separately, I achieve similar results, again showing that married couples give more than permanently cohabiting couples—thus, this alternative explanation does not seem consistent with the data.

5.3   The effects of marriage on giving

In order to more explicitly identify the effect of the commitment mechanism of marriage on charitable giving, I reduce my sample to include only three groups: households who were married for the entire duration of their appearance in the sample, households who were permanently cohabiting for this entire duration, and households who started by cohabiting and then later got married. I remove observations of families after the couple I originally observe splits up and a new couple forms (n = 2,551). I compare the probabilities and amounts of giving across these groups, further subdividing the couples who "switched" and looking at their giving both before and after getting married. Since I now restrict my

sample only to household-year observations that contain both a head of household and a wife or "wife," I am able to estimate the same 2SLS regressions as in table 3, but also including demographic variables for the wife or "wife". Additionally, I replace the couple status dummies with "subcouple status" dummies, one for each of the subcategories of couples I identified, and report my results in table 5.

As might be expected from the previous results, couples who are always cohabiting tend to give less often and less than married couples. The difference between couples who are always cohabiting and couples who are currently cohabiting but will later get married is positive, though not significant ($\chi^2(1) = 2.01$, $p = 0.1561$ for probabilities and $\chi^2(1) = 2.17$, $p = 0.1404$ for amounts), such that those who will eventually marry give more than those who never will. This possibly indicates that there are some unobserved characteristics of couples who are inclined to get married that increase their charitable giving. Additionally, the over-time difference between couples who got married and those who will eventually get married is positive and significant ($\chi^2(1) = 7.47$, $p = 0.0063$ for probabilities and $\chi^2(1) = 6.24$, $p = 0.0125$ for amounts), so that once-cohabiting couples are, on average, 7.3% more likely to give when they get married, and are expected to give 43% more. This suggests that couples' levels of unobserved, non-legal commitment may grow leading up to their marriage, thereby increasing their charitable giving, with the binding, legal marriage increasing giving dramatically and further still. These results also provide evidence for greater responsiveness to the tax-price on the extensive margin by always-cohabiting couples and couples who have gotten married, relative to couples who were always married. The evidence, however, is not so conclusive for any subcouple on the intensive margin.

I also test whether there are differences between these four subcategories of couples over the distribution of their charitable gifts, to investigate whether concentration and/or destination of giving changes when couples transition from permanent cohabitation to marriage. In column 1 of table 6, I again estimate the regressions in columns 1 and 2 of table 5, but with HHI as the dependent variable. While cohabiting couples who will eventually get married

Table 5: Effects of marriage and cohabitation on giving

	(1)	(2)
	Gives to charity	Log of total giving
Always cohabiting	-.1643***	-1.349***
	(.0223)	(.1467)
Gets married	-.1173***	-1.038***
	(.0270)	(.1723)
Got married	-.0440***	-.6102***
	(.0188)	(.1286)
Always married (omitted)	–	–
Log(price)	-.2735***	-2.038***
	(.0319)	(.2722)
AC × Log(price)	-.6065***	-2.075*
	(.1629)	(1.092)
Gets × Log(price)	-.1994	-.1054
	(.1992)	(1.293)
Got × Log(price)	-.3875***	-1.030
	(.1035)	(.7254)
$H_0 : AC = Gets$	2.01	2.17
$H_0 : Gets = Got$	7.15***	6.24**
n	22,915	22,915
Unique households	4,806	4,806

***$p < 0.01$ **$p < 0.05$ *$p < 0.1$

Notes: in addition to the variables listed, I use the same set of controls as in the previous regression, as well as age of "wife" and its quadratic, and education, race, and religion variables for the "wife". Here the omitted category is couples who are always married, and the coefficients reported for the couple dummy variables and log of price are average marginal effects. I again instrument for the last-dollar tax-price and its interaction terms. The test statistics listed are the $\chi^2(1)$ statistics for the given null hypotheses, comparing average marginal effects on groups. Standard errors are clustered at the household level and in parentheses.

concentrate their giving significantly less than always-married couples both before and after they get married, these couples do not seem to change the concentration of their charitable giving when they transition from cohabitation to marriage—the difference in their HHIs is

Table 6: Effects of marriage on giving by charity class

	(1) HHI	(2) Rel.	(3) Youth	(4) Env.	(5) Comb.	(6) Need	(7) Health	(8) Edu.	(9) Art	(10) Neigh.	(11) Int.	(12) Other
					Probability of giving							
Always coh.	–	-.216***	-.015	.004	-.059***	-.064***	-.043***	-.024**	.013	-.004	-.007	-.020***
		(.185)	(.010)	(.012)	(.014)	(.015)	(.013)	(.010)	(.010)	(.005)	(.006)	(.007)
Gets married	–	-.172***	-.026**	.000	-.027	-.015	-.013	-.006	.017	-.002	-.002	-.018*
		(.026)	(.013)	(.015)	(.023)	(.022)	(.020)	(.017)	(.012)	(.008)	(.009)	(.010)
Got married	–	-.149***	-.033***	.011	-.016	.014	.009	-.022	-.011	-.003	-.016**	-.005
		(.022)	(.012)	(.133)	(.019)	(.019)	(.017)	(.015)	(.010)	(.006)	(.004)	(.009)
Always m. (om.)	–	–	–	–	–	–	–	–	–	–	–	–
H_0 : AC = Gets	–	2.4	0.6	0.1	1.6	4.0**	1.8	1.0	0.1	0.1	0.2	0.0
H_0 : Gets = Got		0.8	0.2	0.5	0.3	1.7	1.1	0.7	4.8**	0.0	1.8	1.2
					Amount of giving							
Always coh.	-.001	-1.47***	-.054	-.005	-.268***	-.323***	-.279***	-.090*	.044	-.019	-.039	-.100***
	(.016)	(.121)	(.043)	(.048)	(.077)	(.084)	(.062)	(.053)	(.044)	(.022)	(.028)	(.036)
Gets married	-.039*	-1.29***	-.095**	.000	-.143	-.106	-.073	-.029	.042	-.027	.005	-.058
	(.022)	(.157)	(.054)	(.065)	(.118)	(.114)	(.097)	(.077)	(.051)	(.028)	(.043)	(.044)
Got married	-.029**	-1.22***	-.159***	.015	-.084	.010	.014	-.101	-.083*	-.025	-.093***	-.031
	(.015)	(.145)	(.058)	(.060)	(.105)	(.104)	(.083)	(.078)	(.045)	(.029)	(.035)	(.049)
Always m. (om.)	–	–	–	–	–	–	–	–	–	–	–	–
H_0 : AC = Gets	2.3	1.0	0.4	0.0	0.9	2.8*	1.0	0.5	0.0	0.1	0.8	0.7
H_0 : Gets = Got	0.2	0.2	0.9	0.1	0.2	0.9	0.7	0.7	4.8**	0.0	4.0**	0.2
n	17,117	22,915	22,915	22,915	22,915	22,915	22,915	22,915	22,915	22,915	22,915	22,915
Unique households	3,870	4,806	4,806	4,806	4,806	4,806	4,806	4,806	4,806	4,806	4,806	4,806

***$p < 0.01$ **$p < 0.05$ *$p < 0.1$

Notes: all regressions also include the instrumented log(price); log(income), its quadratic, and cubic; the demographic variables as in table 5; and year fixed effects. Reported are the coefficient estimates as well as $\chi^2(1)$ statistics for the given null hypothesis. The sample size and number of unique households are smaller in the HHI regression because I restrict the sample to families who gave $> \$0$. Standard errors clustered at the household level are in parentheses.

not significant.

In columns 2 through 12 of table 6, I investigate how the destination of gifts is affected by transitions from permanent cohabitation to marriage, using the probability or amount of giving to a particular charitable class as the outcome variable in the 2SLS regression. Compared with couples who are always married, couples who are always cohabiting are not significantly more likely to make a gift, and their expected gift is not significantly higher in any category. Cohabiting couples who will eventually get married give significantly more often and more than other cohabiting couples only to need-based organizations. When these couples get married, though they give more overall, they do not give significantly more to any particular category (and in fact give significantly less often and less to arts and international charities). However, these couples appear distinct from those who were always married with regard to certain classes, as the giving of always-married couples to religious and need based organizations is still more frequent and greater than that of couples who were cohabiting and later got married.

5.4 Tests for different income elasticities of giving

In my analysis thus far, I have assumed that charitable giving is a household public good and investigated the effects of intertemporal commitment on the consumption of this good. I now consider another reason, also related to commitment, why giving might be greater among married couples relative to permanently cohabiting households. Recall the hypothesis that, since giving is a function of income, and married couples (because of risk-sharing and income-pooling) are more secure than other categories of households in projecting their future income, giving by married couples would be greater than giving by other households. If this were the case, not only would we observe differences in probabilities and amounts of giving by married and cohabiting people, but we would also observe different income elasticities for the different couple groups.

This is exactly what I find. In table 7, I report the results of four 2SLS regressions.

Table 7: Giving explained by income and couple status

Effects of couple status and income on giving			Over-time effects of marriage and income on giving		
	(1)	(2)		(3)	(4)
	Pr(gives)	Log(giving)		Pr(gives)	Log(giving)
Perm. Coh.	-.1704***	-1.388***	Always Coh.	-.1757***	-1.481***
	(.0137)	(.0882)		(.0227)	(.1500)
1st-year coh.	-.1599***	-1.248***	Gets mar.	-.1158***	-1.064***
	(.0186)	(.1261)		(.0281)	(.1802)
Single	-.0990***	-.9082***	Got mar.	-.0516***	-.6349***
	(.0082)	(.0609)		(.0194)	(.1289)
Mar. (omitted)	–	–	Always m. (om.)	–	–
Log(income)	.0734***	.6660***	Log(income)	.0767***	.7771***
	(.0044)	(.0342)		(.0072)	(.0579)
PC × Log(inc)	-.0123	-.4026***	AC × Log(inc)	-.0353**	-.5917***
	(.0149)	(.1064)		(.0171)	(.1143)
1YC × Log(inc)	-.0408***	-.6072***	Gets × Log(inc)	.0207	-.2519
	(.0118)	(.0814)		(.0294)	(.2029)
Sing. × Log(inc)	-.0208***	-.4228***	Got × Log(inc)	.0657**	.2645
	(.0078)	(.0610)		(.0273)	(.1818)
H_0 : PC = Sing.	26.70***	26.70***	H_0 : AC × Log(inc) = Gets × Log(inc)	3.01*	2.45
H_0 : PC × Log(inc) = S. × Log(inc)	0.38	0.05	H_0 : Gets × Log(inc) = Got × Log(inc)	1.53	4.38**
n	41,273	41,273	n	22,915	22,915
Unique households	8,943	8,943	Unique households	4,806	4,806

***$p < 0.01$ **$p < 0.05$ *$p < 0.1$

Notes: in addition to the variables listed, I also include the (instrumented) log of price and its interactions with the couple/subcouple dummies; age and its quadratic; education, race, and religious preference dummy variables for the head and for the "wife" when possible; and year fixed effects. The coefficients reported for the couple and subcouple dummies and log of income are average marginal effects. Also reported are $\chi^2(1)$ statistics for the given null hypotheses, comparing average marginal effects when relevant. Standard errors are clustered at the household level and in parentheses.

Similarly to the previous models in this paper, I estimate giving (in terms of probabilities or amounts) as a function of the instrumented natural logarithm of price, the natural logarithm of income, various household demographics, year fixed effects, and either couple status or subcouple status. Now, however, I interact the income variable with the couple or subcouple indicator variables, testing for differences in income elasticity.

Like the previous models, these results suggest that, on average, married couples are more likely to give and give more than cohabiting and single households. Again, while there is a tendency for cohabiting couples who eventually get married to give more than other cohabiting couples, there is a further significant increase in their giving upon getting married. The magnitudes of these effects are largely similar to what I have already estimated. This model gives additional insight, however, into the mechanism by which commitment increases giving. Namely, the coefficients on several of the interactions between couple status or subcouple status and income are significant, indicating varying income elasticities across groups. Following a 1% increase in income, permanently cohabiting couples and singles are each predicted to increase their giving by about .4% less than similar married couples; this same change in income would increase a married couple's probability of giving by around .07% compared with a permanently cohabiting couple's .06% and a single household's .05%. Though these results are not extremely dramatic, they are statistically significant (with they exception of the difference for permanent cohabitors on the extensive margin). Thus the data suggest that an additional dollar earned by a married couple makes them relatively "richer" than other kinds of households, and they are therefore able to give more often and make larger charitable contributions.

Considering the effects of transitions from cohabitation to marriage on income elasticity over time, I also look at regressions interacting income with subcouple status. Cohabiting couples who eventually get married appear to respond more to a change in income than do other cohabiting couples: a 1% increase in income is predicted to increase their probability of giving by about .1% compared with .04%, and their amounts of giving by about .5% compared

with .2%. When these couples get married, they become significantly more responsive to income on the intensive margin—their income elasticity of giving increases by about half a percent. While there is also an increase on the extensive margin, it is not large or significant. Together, these results suggest that, like giving itself, *responsiveness* of giving to income changes with commitment; in particular, couples are more responsive as they approach marriage, and dramatically more responsive when the binding legal commitment occurs. Thus there is evidence that the differences between giving by married and cohabiting couples owes in particular to the fact that giving is a function of income, and commitment allows married couples to be more secure in projecting their income in subsequent periods.

5.5 The tax-price of giving for cohabiting couples

Finally, I use the detailed information on labor and interest income, various deductions, and spending by each member of a two-person household provided by the PSID to briefly investigate whether giving by cohabiting couples is influenced by the marginal tax rate faced by both partners, or simply that of the higher earner. Using Meer and Priday's (2020) method described earlier, I separately estimate the (first and last-dollar) tax-price of giving for both the head of the household and the "wife" of the household for each cohabiting couple. I then estimate two 2SLS regressions similar to those referenced earlier in this paper, explaining the decision to give and the size of charitable gifts with demographic variables for the head and "wife," household income, and the tax-price of both the primary and secondary earner of the household (I instrument for each with the respective first-dollar price). Results are reported in table 8, along with the first-stage regressions explaining each tax-price.

On both the extensive and intensive margins, the coefficient on each household member's tax-price is negative, but only the primary earner's is significant. This is consistent with the idea that cohabiting couples maximize the benefits they receive from charitable giving by paying the lowest possible price—if this were the case, changes in the higher price would not affect the couple's giving.

Table 8: Effects of tax-prices on giving in cohabiting couples

	(1)	(2)	(3)	(4)
	Gives to charity	Log(total giving)	1$^{\text{st}}$ stage (pri.)	1$^{\text{st}}$ stage (sec.)
Log(price) pri.	-.4962***	-2.865***	–	–
	(.1514)	(.9683)		
Log(price) sec.	.0244	-.2571	–	–
	(.9683)	(1.565)		
Log(1$^{\text{st}}$ price) pri.	–	–	.9509***	.0073
			(.0215)	(.0076)
Log(1$^{\text{st}}$ price) sec.	–	–	.0485	.9691***
			(.0333)	(.0115)

***$p < 0.01$ **$p < 0.05$ *$p < 0.1$

Notes: in addition to the tax-price variables, I also include the natural logarithm of income and its quadratic and cubic; age and its quadratic for both head and "wife;" education, race, and religious preference dummy variables for head and "wife"; and year fixed effects. I instrument for the last-dollar tax-price of the primary and secondary earner with their respective first-dollar tax-prices; the results of the first stage regressions explaining each endogenous variable are reported in columns (3) and (4). Standard errors are clustered at the household level.

6 Conclusion

In this paper, I investigate charitable giving by married and permanently cohabiting couples. I find evidence that, holding other variables constant, married people both give more and are more likely to give than cohabiting couples, particularly to religious charities. Contrary to the few previous studies that have examined cohabitation and giving, I also find differences between singles and permanently cohabiting couples, namely, that permanently cohabiting couples give less than singles holding other variables constant. There is evidence to support a causal link between the commitment mechanism of marriage and increased giving; when people change marital or couple status over time, their giving is greatest when they are married. This same causal link does not appear when comparing permanent cohabiting couples and singles—that is, there is not evidence that picking up a non-marital partner decreases one's giving. These results appear to be closely related to the varying responsiveness of giving to changes in income by married couples and other households.

In addition, I find that the giving of singles is more responsive to changes in the tax-price than giving of married couples. While there is some evidence that permanently cohabiting couples are more responsive than married couples to this change as well, the results are not statistically significant in all specifications of my models. Permanently cohabiting couples respond only to changes in the tax-price of the household's primary earner.

These results could imply a greater motivation for governments to implement policies that encourage legal marriage, as these may increase the private provision of the public good that is charitable giving. For example, providing tax breaks to married couples may induce marriage, as couples are responsive to these rates when they transition from cohabitation to marriage (Alm and Whittington 2003). My results show that there is no significant difference between the responsiveness of a couple's giving to tax rates before and after marriage—and indeed, if anything marriage makes giving less responsive to tax changes. Thus, if a permanently cohabiting couple is encouraged to get married by facing a lower tax rate, that same lower tax rate would increase their price of giving, and possibly decrease their giving by less when they are married than it would have when they were permanently cohabiting.

Several limitations of my study leave open various avenues for further research. Though, in preliminary analyses, I briefly consider higher bargaining costs as a cause of the lower levels of giving by permanently cohabiting couples, my sample size is likely not large enough to make any definitive claims on this topic. Another study with a larger sample of permanently cohabiting couples and detailed information about the decision-making member of the household could clarify this question.

Further, though I interpret many of my results as causal, it is difficult to say for certain that the commitment mechanism of marriage induces charitable giving, since the marriage decision is likely endogenous. Replicating my results, but using a strong instrument for marriage or the variation of a natural experiment could solidify the evidence for such a causal link. In particular, an examination of giving by same-sex couples who get married shortly after the legalization of same-sex marriage could shed light on the issue, as well

as study the giving of same-sex couples in general—something I was unable to do as a result of limitations of my sample. Finally, charitable giving is just a single example of a household public good. Testing explicitly for the effects of commitment on investment in other household public goods remains an important area for expansion of further research.

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