Journal of Economic Behavior & Organization 128 (2016) 47–58

Contents lists available at ScienceDirect

Journal of Economic Behavior & Organization

journal homepage: www.elsevier.com/locate/jebo

Diversity and donations: The effect of religious and ethnic diversity on charitable giving☆

James Andreoni[a], A. Abigail Payne[b], Justin Smith[c,*], David Karp[b]

[a] Department of Economics, University of California, San Diego, United States
[b] Department of Economics, McMaster University, Canada
[c] Department of Economics, Wilfrid Laurier University, Canada

ARTICLE INFO

Article history:
Received 18 September 2015
Received in revised form 5 May 2016
Accepted 12 May 2016
Available online 21 May 2016

JEL classification:
H41
R23
J11

Keywords:
Charitable giving
Ethnic diversity
Religious diversity

ABSTRACT

We explore the effects of local ethnic and religious diversity on private donations to charity. Results show that an increase in ethnic diversity decreases donations, and that this effect is driven by non-minorities and blacks. We find a similar relationship between religious diversity and donation that is driven by Catholics, though that evidence is weaker. We find no consistent connection between diversity and fraction of households that donate on average. Our results provide a parallel to the negative effects of diversity on publicly provided goods, and opens new challenges for fundraisers and policy makers.

1. Introduction

Diversity is increasingly a fact in urban centers across North America and Europe, and is often lauded as a virtue in and of itself. Recent research suggests, however, alongside any potential benefits, diversity appears to dilute support for publicly funded goods and services. Ethnically diverse communities appear to spend less on schools (Alesina et al., 1999, 2000; Poterba, 1997; Goldin and Katz, 1999), less on roads and hospitals (Alesina et al., 1999, 2000), and to have lower Census form completion rates (Vigdor, 2004).

The fact that support for *publically provided* goods falls as diversity rises raises the question of whether the same is true for the *private provision* of public goods, like local charitable services. On one hand, factors that drive down public spending when ethnic diversity increases – e.g. insularity or difficulty agreeing on how to spend public funds – may also drive down private contributions to charity, especially if other groups are seen to benefit from the contribution. Alternatively, in a more segmented society where individuals vote for less public spending because they feel less connected across groups, a greater connection within groups may lead them to substitute into local charities such as religious organizations or neighborhood food banks as a way target the benefits to their own group. This substitution would increase total contributions to charities.

☆ We acknowledge funding from the University of Manitoba and the Social Sciences and Humanities Research Council (SSHRC), and from the National Science Foundation. We thank Jonathan Meer for valuable comments.

* Corresponding author.
E-mail address: jusmith@wlu.ca (J. Smith).

http://dx.doi.org/10.1016/j.jebo.2016.05.010
0167-2681/

Knowing the impact diversity may have on the private provision of public goods and services is as important to policy makers as it is to know diversity's impact on publicly provided goods and services, especially when the two sectors are producing things that are substitutes for each other. In particular, private sector charity can either blunt the negative effects of diversity on the community's welfare, or exacerbate the problem. Despite the clear evidence that support for publically provided goods falls in more diverse populations, whether support for privately funded public goods like charities rises or falls is an open, and equally important, empirical question.

We examine the effect of ethnic and religious diversity on individuals' donations to private charities using aggregated data on charitable donations derived from Canadian tax records linked to Census data over 10 year time periods. Our key contribution is that we estimate a relationship between diversity and private donations to charity that is broader and more generalizable than prior research. Work in this area to date (e.g. Fong and Luttmer, 2009, 2011; Hungerman, 2008; Dimitrova-Grajzl and Grajzl, 2016) focuses specifically on the effect of race on donations to small subsets of the charitable sector in contexts where race is likely to play a key role. Our measure of donations, on the other hand, includes giving to any registered charity in the country, and our sample contains all urban areas across Canada. What we estimate is therefore more representative of the general effect of diversity on private giving. Furthermore, unlike most prior work, we separate the effect of diversity on giving along the intensive and extensive margins.

Our empirical model is based on Vigdor (2002, 2004), where our regressions of donations on the ethnic or religion Fragmentation Index (FI) at the community-level are derived by aggregating an individual-level model of donations as a function of a person's own ethnic or religious group share of the population. The advantage of this approach is that it relates the relationships we observe between FI and donations in the aggregate to underlying individual behavior. Typically the coefficient on FI is described as the effect of increasing the probability that any two randomly chosen individuals belong to different groups. Within the Vigdor (2002, 2004) framework, one can show that the coefficient on FI equals the negative of the effect of increasing an individual's own-group share on donations. An inverse relationship between fragmentation and donations therefore arises in this model because individuals increase donations as their own-group share in the population rises.

A concern for estimation is unobserved heterogeneity, arising potentially from sorting into neighborhoods based on factors correlated with both diversity and charitableness. We attempt to control for this by including a set of neighborhood fixed effects, and by controlling for key time-variant neighborhood characteristics. To control for sorting by other factors, we employ control variables intended to hold constant the important variables that might be related to donations and diversity, such as income, education, house values (as a measure of wealth), migration, labor market conditions, age distribution, and other demographics.

The average adult in our sample donates $248 per year. We find that increasing the ethnic FI by 10 percentage points reduces the average donation per adult by roughly $36 per year, a 15% reduction. Based on the Vigdor (2002, 2004) framework, this effect arises because individuals donate more when their own-group share rises. By contrast, we find no statistically significant relationship between changes in the ethnic FI and the fraction of households that make a donation. Ethnic diversity appears, therefore, to affect the intensive rather than extensive margin. Looking deeper into which groups drive the inverse relationship between diversity and amount donated, we find that non-minorities contribute roughly $106 more per adult when their group share increases by 10 percentage points in the community, and blacks contribute $591 more for the same increase in their group share. By contrast, East Asians contribute $116 less per adult when their group share increases by 10 percentage points. Finally, the effects are strongest in high income and low education communities.

Turning to religious diversity, a 10-percentage point increase in the FI reduces contributions by about $23 per adult per year, a 9% reduction, though this estimate is not statistically significant. Catholics increase their donations by $66 per adult when their share in the population rises by 10 percentage points. We find no consistent evidence that the religious FI affects the fraction of households that donate. Because the religiosity results lack precision and are less robust than the ethnic diversity results, we interpret with caution.

In sum, our key results indicate that the deleterious effects of diversity on public sector provision of goods extends to privately provided public goods; that is, prior studies on the link between increased diversity and lower provision of publicly provided goods are actually understating the total effect. Increases in ethnic diversity lead to significant declines in charitable giving in the urban Canadian areas in our sample. Over the ten years of our study, ethnic diversity increased by six percentage points, suggesting that charitable donations are nine percent lower than they would be had ethnic diversity not grown over that time period.

2. Literature

Many studies on diversity focus on its relationship with the amount or distribution of public spending by governments or, more recently, on contributions or attitudes towards activities or goods that generate public benefits (see reviews by Alesina and La Ferrara, 2005; Stichnoth and Van der Straeten, 2009). The main conclusion from the literature is that diversity reduces publicly provided goods, both across countries and across communities within a country (mainly the United States). Ethnically diverse communities are found to spend less on schools (Alesina et al., 1999, 2000; Poterba, 1997; Goldin and Katz, 1999), less on roads (Alesina et al., 1999, 2000), and less on social programs in general as a fraction of GDP (Alesina et al., 2001). One exception is that Cutler et al. (1993) find that changes in state-level demographic characteristics have a negative effect on public spending, but at the county level the effect is positive.

A related literature also finds that diversity has a negative impact on individual attitudes and behavior when public benefits are involved. In racially or ethnically heterogeneous communities, surveyed individuals express a stronger preference for decreasing social benefits (Dahlberg et al., 2012), involvement in social activities is lower (Alesina and La Ferrara, 2000), people are less likely to fill out census forms (Vigdor, 2004), they contribute less to schools through voluntary fundraising events (Miguel and Gugerty, 2005), and contribute less to community organizations (Okten and Osili, 2004). There are several explanations offered for this effect. If different groups have different tastes or agendas for public spending, then this disagreement may make it more difficult to raise the funds necessary to provide those goods, and may make the goods themselves more costly[1] (such as multilingual education), and so overall provision is lower (Alesina et al., 1999). Other researchers have suggested that individuals may be less willing to contribute to a good with public benefits if those benefits accrue to other groups besides their own. There may be mistrust across groups (Alesina and La Ferrara, 2002; Fershtman and Gneezy, 2001) or pro-social within-group norms that are not easily enforceable across groups (Habyarimana et al., 2007).

Several studies focus specifically on the relationship between diversity and altruistic behavior.[2] Hungerman (2008) finds evidence that charitable spending by all-white church congregations is more sensitive to increases in the percent of the local community that is Black compared to more diverse congregations. Along the same lines, Dimitrova-Grajzl and Grajzl (2016) show that giving to all-white congregations falls when the percent white in the county falls. In an interesting contrast, Hungerman (2009) finds that government spending on charities is less likely to crowd out charitable spending by United Methodist Churches in more ethnically diverse communities. Experimental evidence by Fong and Luttmer (2009) shows that giving to Hurricane Katrina victims does not on the race of the victim, but increases when the giver subjectively identifies with the racial background of the recipient. In a different experiment, Fong and Luttmer (2011) find again that donations are independent of the race of the victim, but that non-Black participants view Black individuals as less worthy of charity, and giving declines when the victim is viewed as less worthy.

A criticism of the results discussed above is that they are formed within very specific contexts – homogeneous congregations, hurricane Katrina, the southern United States – where race is likely to play a more prominent role in determining donations. While those studies are certainly informative inside the context in which they take place, it is not clear that they reveal the more general relationship between ethnic diversity and donations. Furthermore, they do not separate the effect of race on giving along the intensive and extensive margins.

With our data, we can potentially draw sharper, more generalizable conclusions relative to previous work. Our information on donations includes giving to any cause that generates a tax receipt, which includes a broad, representative set of charitable organizations. In addition, we measure both donations and diversity in a set of neighborhoods that spans all urban areas across Canada over periods of 10 years. These two facts combined mean that we can make broader statements about the relationship between diversity and amount donated. Furthermore, because we know how many individuals donate to charity in each neighborhood, we can examine diversity's impact on the likelihood of donating separate from amount donated.

3. Empirical strategy

Our empirical analysis is based on Vigdor (2002, 2004), who builds a community-level model by aggregating an individual-level model. The main advantages of this exercise are that it provides a behavioral interpretation to the coefficients we get from the community-level model, and motivates the use of a Fragmentation Index (FI), which is the most common way to measure diversity.

Suppose that the amount individual i in group g from community c at time t donates to charity depends on the fraction of the community members who are in the same group:

$$\text{donation}_{igct} = \alpha_g + \beta_g \text{share}_{gct} + \delta x_{igct} + \theta z_{ct} + \varepsilon_{igct} \tag{1}$$

where donation_{igct} is an individual's donation to any charity in dollars, and share_{gct} is the share of group g in the population in community c at time t. Vigdor (2002) calls β_g the within-group affinity, because it measures the extra amount a person is willing to donate when their group's share in the population increases. The coefficient α_g measures each group's baseline contribution level. The variables in x_{igct} are individual-level factors affecting donations, such as income, and z_{ct} are community-level factors that may or may not vary over time.

Aggregating to the community-year level, we get

$$\overline{\text{donation}}_{ct} = \sum_{g=1}^{G} \alpha_g \text{share}_{gct} + \sum_{g=1}^{G} \beta_g \text{share}_{gct}^2 + \delta \bar{x}_{ct} + \theta z_{ct} + \bar{\varepsilon}_{ct}. \tag{2}$$

[1] A nice example from Jackson (2010) is a fragmented community where some individuals want to provide public education in one language, and other individuals want to provide it in another. It may be more costly to devise a system where education is delivered in multiple languages compared to a more homogeneous community that funds education in one language.

[2] For reviews on the broader literature on charitable giving, see Andreoni (2006) and Andreoni and Payne (2013).

The overbars indicate community-level weighted averages at time t, where the weights are the group shares in the community. In the aggregate, community-level donations are a function of the shares and the squared shares, where the baseline and affinity effects are the coefficients on those shares. Use of the FI as a regressor is motivated by restricting all of the squared shares to have the same effect,

$$\overline{\text{donation}}_{ct} = \sum_{g=1}^{G} \alpha_g \text{share}_{gct} + \beta \sum_{g=1}^{G} \text{share}_{gct}^2 + \delta \bar{x}_{ct} + \theta z_{ct} + \bar{\varepsilon}_{ct} \tag{3}$$

where β is interpreted as the average effect across groups of increasing own-group share (within-group affinity) on donations. Because the $\text{FI} = 1 - \sum_{g=1}^{G} \text{share}_{gct}^2$, models like Eq. (3) that use FI as a regressor in place of $\sum_{g=1}^{G} \text{share}_{gct}^2$ estimate $-\beta$, the negative of the average within-group affinity effect. That is, finding that increasing fractionalization reduces donations is equivalent in this model to finding that on average increasing own-group share increases donations. In the results that follow, we estimate both Eqs. (2) and (3).[3] When we estimate Eq. (3), we will use the FI as the main independent variable rather than the sum of the squared shares, for interpretation purposes. Note that while we estimate coefficients with Eqs. (2) and (3), we interpret them through the lens of Eq. (1). Coefficients derived from Eq. (2) are therefore interpreted as the effect of increasing own group share on donations, and those from Eq. (3) are a weighted average of the effect of own group share on donations.

We control for the time varying factors in $\bar{x}_{ct}$ and z_{ct} using data from the Census on the variables most likely to be related to donations (discussed below). Additionally, we control for time-invariant community factors in z_{ct} with a set of community-level fixed effects. Our identifying assumption is, therefore, that community fixed effects and other time-varying controls account for confounding factors. The main threat to identification is likely to be sorting across neighborhoods based on factors related to charitable donations. The neighborhood fixed effects will control for a significant portion of this sorting if the things that make one neighborhood more attractive than another do not change much over the 10 years we study, as is likely. Individuals may nevertheless sort based on things that change within those 10 years, and if they sort based on the charitableness of the neighborhood or factors related to charitableness, our estimates could be confounded. We believe there is a very small likelihood that people sort into a community solely for the level of charity it provides, but if they did, and more charitable communities attract more diverse populations, then our estimates will be biased toward finding a positive relationship between diversity and donations. We are also confident that we control for the main factors that are related to diversity and donations that may draw someone to a neighborhood, such as income, education, age distribution, labor market conditions, and other demographics.

4. Data

In this section we report the sources of our data, how we selected the sample for analysis, and provide summary statistics for the observations we analyze.

4.1. Data description

Data on donations come from the Financial and Charitable Donors Databank, produced by Statistics Canada. The dataset contains information on yearly total amounts contributed by residential households, and number of contributors to charity aggregated to the Forward Sortation Area (FSA) level (discussed below) from individual tax records.[4] Data at this level of aggregation are only available for FSAs in urban areas.[5] We extract information on total amount contributed and total number of contributors to registered charities for tax years 1991–2006. Registered charities include regular charitable organizations providing any type of service, but also amateur athletic organizations, universities inside and outside of Canada, tax exempt housing corporations in Canada, municipalities, the United Nations, and charities outside of Canada that have been given a gift by the Government of Canada (Statistics Canada, 2010).

From these data we create our two main outcome variables. First is the *average donation per adult*, which we compute by dividing total donations by the number of taxfilers in each FSA in each year.[6] We also divide number of charitable donors by

[3] Because aggregation creates heteroskedastic errors, we use standard errors that are heteroskedasticity robust and clustered at the community level. All regressions are weighted by the number of taxfilers.

[4] Specifically, information is based on line 340 of T1 federal tax forms.

[5] Statistics Canada produces the charitable donors data in such a way that users can aggregate to different levels, including the city level. Because some FSAs straddle city borders, sometimes our data splits an FSA's observation between all cities within its border in a given year. In creating our sample, we simply added the donations across cities within an FSA boundary in a given year. It is possible, however, that if a city within an FSA is very small, Statistics Canada could have suppressed its data. To check whether the results were robust to excluding these areas, we reran all regressions eliminating FSAs that straddled city borders (about 20% of the observations), and the results were very similar to those presented in the manuscript. One notable exception is that the coefficient on the Religion Fragmentation Index in Table 6 becomes statistically significant, at roughly the same magnitude.

[6] In dividing total contributions by the number of taxfilers and interpreting it as donations per adult, we assume that people who do not file a tax return contribute the same on average as those who file. Alternatively, this measure could be interpreted more strictly as donations per taxfiler. When we instead use the size of the adult population as the denominator, our main results are similar, though slightly smaller in magnitude.

the number of households to create our second outcome, the *fraction of households who donate*. We divide by the number of households instead of the number of taxfilers because of the tax treatment of charitable donations. Charity tax credits are transferrable between spouses. Because the tax credit rates jump substantially after passing a monetary threshold, it is most likely the case that one spouse claims all of the tax credits and the other spouse claims none.[7] We therefore expect, as far as tax records are concerned, the number of donors more accurately reflects the total number of households who donate, rather than the number of individuals.

There are several unique features of donations data based on tax records. First, we cannot identify the charity to which donations have been made. This could be problematic if some types of donations are sensitive to community composition and others are not. Donations also include those made to large, international organizations, which again may not be sensitive to the composition of a local community.

Second, because data on donations are based on tax records, only donations reported on an individual's tax return are counted, and only for individuals who file a tax return. According to documentation accompanying the charitable donors' data, 66% of Canadians filed taxes in 1991, which climbed to 74% in 2006. This may not be a substantial issue, however, because of the tax treatment of donations discussed above: some individuals who do not file a tax return may have a spouse who does, and that spouse may claim the donation on his/her tax return. We are, therefore, likely picking up more donations than the rate of filing might suggest.

We link data on donations to variables from the 1991, 1996, 2001, and 2006 Census of Canada aggregated to the FSA level. Statistics Canada collects data on a small number of variables such as basic population counts and gender from 100% of the population (the "short form"), and other more detailed information using a mandatory 20% sample (the "long form").[8] Data on ethnic groups, collected through the long form, is based on an individual's "visible minority" status, which assigns people to one of twelve groups based on race and skin tone. Because some groups are quite small, we regroup individuals into the following categories: Black, East/Southeast Asian, South Asian, Arab/West Asian, Latin American, Other, and not-visible-minority.[9] Religious groups, also collected on the long form, contain a much larger number of disaggregated categories, which we regroup for the same reasons into: Catholic, Christian (other than Catholic), Jewish, Muslim, Other, and not religious.[10] Data for visible minorities are available in the 1996, 2001, and 2006 Censuses, and data for religious groups are available for 1991 and 2001.

We draw our control measures from the Census. These include household income, family structure, education, external and internal residential mobility, unemployment, population distribution, language, housing stock, house values, home ownership, and rent. All controls are listed in Table 1.

Data are aggregated to the FSA level, which is a relatively small geographic space used to delineate postal routes. An FSA is the first three characters of the 6-digit Canadian postal code, where the first identifies the province (in most cases) and the second identifies the area as urban or rural. There are roughly 1600 FSAs across Canada, and each is a relatively stable geographic area containing only 7000 households on average. FSAs in rural locations tend to occupy large areas, while those in urban areas can be very small. Though they are generally stable, some FSAs do change boundaries over time. This occurs mostly where an urban FSA is created out of part of a rural FSA, but urban FSAs are occasionally, though seldom, split into 2 or more urban FSAs. We refer to these as emerging FSAs. Our solution to this was to regroup emerging FSAs back into their old boundaries, and use those boundaries for all years. A more detailed explanation of this procedure is available in Appendix A.[11]

4.2. Sample

Our sample universe consists of all urban FSAs between 1991 and 2006, the years when both donations and Census data are available.[12] There are 19,820 FSA-year observations over that time period, or 1284 FSAs. From this universe, we drop 245 observations (1.2%) where one of the key Census measures contained missing data; 154 observations (0.1%) from FSAs that are missing donations data in one of the Census years; 2031 observations (10.2%) for FSAs that were not observed contiguously between either 1991–2001 or 1996–2006; 42 (<0.1%) observations from recombining emerging FSAs. The restriction to keep contiguously observed data over two different time spans is imposed because we separately analyze ethnic diversity using

[7] This is especially true if one spouse earns no income as the tax credit is non-refundable. The threshold levels and rates vary over time and across provinces. The thresholds are in the $200–$250 range, with a federal rate below the threshold of around 15–17%, which roughly doubles for all dollars above the threshold.

[8] Note, however, that in 2011 the long form portion of the Census was replaced with a voluntary survey of 30% of the population called the National Household Survey. The short form remains mandatory.

[9] The groups available in the Census are: Chinese, South Asian, Black, Filipino, Latin American, Southeast Asian, Arab, West Asian, Korean, Japanese, Visible Minority Not Included Elsewhere, and Multiple Visible Minority. Individuals who report multiple visible minority groups or are not included elsewhere are sorted into the "other" group. Non-visible-minorities include Aboriginal peoples.

[10] The groups are: Catholic,United, Anglican, Presbyterian, Baptist, Lutheran, Pentecostal, Reform, Orthodox, Jehovah's Witness, Mennonite, Salvation Army, Mormon, Other Christian, Jewish, Muslim, Buddhist, Hindu, Sikh, Other, and No Religion.

[11] For example, splitting an urban FSA into two but maintaining the same label for one of them, we might observe what appears to be large population drops or changes in other variables. But, this would simply be a product of redrawing boundaries. By regrouping FSAs back into their own boundaries, we avoid such issues.

[12] This sample restriction also excludes FSAs that were regrouped back into rural FSAs, as explained in Appendix A.

Table 1
Sample means of key variables over time.

	Overall	Year			
		1991	1996	2001	2006
Panel A: Donation Variables					
Average Donation (Year 2000 $)	248.12	200.42	212.39	256.41	334.37
Fraction of Households who Donate	0.483	0.538	0.495	0.470	0.458
Average Age of Donors	50.48	47.23	49.83	51.39	52.02
Median Income of Donors (Year 2000 $)	40673.22	39091.98	39408.16	41293.00	43307.55
Panel B: Census Variables					
Visible Minority Fragmentation Index	0.257		0.228	0.254	0.287
Religion Fragmentation Index	0.551	0.526	0.552	0.569	
Household Income (Year 2000 $)	60540.14	59649.93	55878.96	61996.54	65503.38
Immigrants	0.223	0.204	0.218	0.225	0.240
1-Parent Families	0.163	0.145	0.160	0.169	0.171
Highest Level of Schooling High School	0.500	0.464	0.469	0.527	0.532
Highest Level of Schooling University	0.220	0.188	0.212	0.221	0.253
Unemployed	0.069	0.087	0.083	0.058	0.051
Interprovincial Migrants Last 5 Years	0.033	0.040	0.034	0.033	0.028
Interprovincial Migrants Last Year	0.010	0.012	0.010	0.010	0.009
External Migrants Last 5 Years	0.046	0.049	0.045	0.044	0.048
External Migrants Last Year	0.012	0.012	0.010	0.012	0.012
Population under 14	0.188	0.198	0.197	0.185	0.172
Population 15–19	0.066	0.066	0.066	0.067	0.067
Population 55–64	0.094	0.089	0.086	0.093	0.112
Population 65+	0.126	0.110	0.123	0.130	0.137
Speak English at Home	0.690	0.667	0.676	0.730	0.662
Housing Stock Built 1991–2001	0.106	0.000	0.087	0.152	0.142
Average Number of Rooms in Dwelling	6.19	5.96	6.11	6.25	6.37
Fraction of Dwellings Owned	0.629	0.590	0.611	0.639	0.670
Average Value of Dwelling (Year 2000 $)	202942.40	205756.20	183015.30	181657.10	261318.40
Average Rent (Year 2000 $)	715.51	766.83	700.65	706.87	709.88
Number of Observations	17348	1005	1128	1128	1111

Notes: Numbers based on authors' calculations. All monetary figures are expressed in year 2000 Canadian Dollars. Fragmentation Index is one minus the sum of the squared shares of each group in the population. Average donation is the donation per taxfiler.

data from 1996 to 2006, and religious diversity from 1991 to 2001. After these exclusions, we are left with a final sample of 17,348 FSA-year observations.

Because Census data are only available in 1991, 1996, 2001, and 2006, whereas donations data are available for all years, we linearly interpolate Census measures between Census years. Visible minority information was not collected in 1991, so we therefore do not interpolate this measure between 1991 and 1996. Likewise, religion information was not collected in 1996 or 2006, so we do not interpolate between 2001 and 2006 for this measure. Because visible minority and religion data do not fully overlap, we use different samples to analyze ethnic and religious diversity. To study ethnic diversity, we use 12,221 FSA-year observations between 1996 and 2006. To study religious diversity, we use 11,055 FSA-year observations between 1991 and 2001.

4.3. Summary statistics

In Table 1, Panel A, we present means of donation-related variables. Average donations per adult (converted to constant year 2000 Canadian Dollars) increased by 67% between 1991 and 2006, with most of the growth occurring between 1996 and 2006. On the other hand, the fraction of households who make any donation falls by roughly 8 percentage points over the same period.

In Table 1, Panel B, we summarize Census information. Our key measure of diversity is the FI, which measures the probability that any two randomly selected individuals are in different groups. In 1996 there was on average a 23% chance of two people being from different visible minority groups, which climbs to 29% by 2006. There is much more diversity among religious groups: in 1991 there was a 53% chance on average that individuals belong to different religious groups, which rose to 57% by 2001. While the baseline level of diversity is much higher in terms of religion, growth in diversity is higher in terms of visible minority status.

We also present statistics showing changes over time in control measures that are related to diversity and donations. Some noteworthy changes are that average household income grows by roughly $5850, the fraction of the population who are immigrants grows by 4 percentage points, the fraction with a university education grows by 6 percentage points, and housing value grows by $55,562.

In Table 2 we present data on the demographic shifts over time. Panel A shows baseline shares in 1996 and the change in the shares over 10 years for visible minority groups. Clearly the largest group is non-visible-minorities with an 85.1%

Table 2
Visible minority and religion groups over time.

	1996	Percentage Point Change 2006–1996	% of FSAs with Increasing Share 1996–2006
Visible Minority			
Not Visible Minority	85.10%	−5.54	12.69%
East/Southeast Asian	6.68%	2.06	73.18%
Chinese	4.16%	1.03	63.73%
Filipino	1.10%	0.57	60.40%
Southeast Asian	0.81%	0.15	55.99%
Japanese	0.30%	0.29	52.39%
Korean	0.30%	0.01	41.13%
South Asian	3.05%	1.85	66.34%
Black	2.62%	0.47	69.67%
Other	1.44%	0.59	76.33%
Latin American	0.83%	0.39	71.47%
Other	0.60%	0.20	60.04%
Arab/West Asian	1.13%	0.58	63.64%
	1991	Percentage Point Change 2001–1991	% of FSAs with Increasing Share 1991–2001
Religion			
Catholic	45.79%	−1.76	42.49%
Christian	35.08%	−4.65	17.41%
United	10.01%	−1.73	18.31%
Anglican	7.75%	−1.38	19.80%
Other Christian	5.28%	0.37	57.11%
Presbyterian	2.39%	−1.05	6.97%
Baptist	2.12%	0.07	53.03%
Lutheran	2.24%	−0.31	28.16%
Orthodox	1.86%	0.08	49.25%
Pentecostal	1.39%	−0.30	29.55%
Jehovah's Witness	0.59%	−0.08	40.60%
Mennonite	0.47%	−0.07	24.98%
Reform	0.36%	−0.14	14.83%
Mormon	0.32%	−0.01	40.60%
Salvation Army	0.31%	−0.10	19.70%
No Religion	13.55%	3.79	91.44%
Jewish	1.73%	−0.13	45.07%
Muslim	1.30%	1.38	74.43%
Other	2.55%	1.37	64.78%
Buddhist	0.84%	0.53	67.16%
Hindu	0.79%	0.53	50.45%
Sikh	0.66%	0.42	38.91%
Other	0.26%	−0.11	21.79%

Notes: Names of visible minority and religious groups are the names given in the Canada Census. The first column is the population share for a particular group, and the second column is the change in the share over 10 years. There is no data on visible minorities in 1991, and no data on religion in 1996 or 2006.

share. East/Southeast Asian is the next largest with 6.7%. South Asians are roughly 3% of the population, blacks are 2.6%, and other groups are smaller. The largest visible minority groups are also the fastest growing: the East/Southeast Asian group increases its population share by roughly 31%, and the South Asians increase their share by about 61%. Column 3 reports how many of the FSAs in the sample experience growth in each of the groups listed. Generally speaking, about 60% to 70% of FSAs in the sample have growing visible minority shares. Offsetting this growth is a shrinking non-visible-minority group: they lose 5.5% of their share and only 12.7% of FSAs see growth in this group over time.

Religious groups do not move as uniformly. Catholics are the largest group with 46% of the population in 1991, which shrinks slightly over the subsequent 10 years. Combined, all other Christian religions make up about 35% of the population in 1991, which also shrinks over time. On the other hand, individuals claiming no religion, who comprise 14% of the population in 1991, increase their share over time. Perhaps the most telling statistic is that 91.4% of all FSAs in the sample increase their share of individuals reporting no religion.

Table 3 presents the mean relationship between diversity and donations. The first three columns break up the visible minority FI into three quantiles and recompute the means from Table 1. We see donations are higher and more people donate in more ethnically diverse FSAs. A similar pattern is observed in columns 4–6, which separate the data by religious diversity. However, changes in means of the other variables across the quantiles suggest that this may not be a causal relationship, in particular because income is also higher in diverse neighborhoods. What is likely the case here is that more diverse neighborhoods are also the major urban centers like Toronto, Montreal, and Vancouver, which will have more diverse and wealthier populations. We control for these factors in the regression analysis below.

Table 3
Relation between diversity, donations, and census variables.

	Ethnic Diversity			Religious Diversity		
	Low	Med	High	Low	Med	High
Panel A: Donation Variables						
Average Donation	153.42	299.94	301.41	107.63	248.61	280.75
Fraction Donor	0.425	0.494	0.479	0.434	0.537	0.499
Average Age of Donors	52.87	52.03	49.87	50.12	50.67	48.72
Median Income of Donors	37906.71	42266.96	41987.76	37652.76	40561.82	41151.59
Panel B: Census Variables						
FI (1–3 Vismin, 4–6 Relig)	0.029	0.137	0.471	0.270	0.611	0.699
Household Income	53073.56	62818.17	64846.65	50262.26	60546.55	62950.44
Immigrants	0.050	0.151	0.382	0.094	0.175	0.341
1-Parent Families	0.156	0.164	0.175	0.169	0.146	0.165
Highest Level of School HS	0.546	0.528	0.485	0.482	0.500	0.472
Highest Level of School Uni	0.155	0.217	0.274	0.178	0.189	0.249
Unemployed	0.068	0.055	0.066	0.090	0.067	0.075
Interprov. Migrant < 5 Years	0.024	0.038	0.030	0.015	0.043	0.043
Interprov. Migrant < 1 Year	0.007	0.012	0.009	0.005	0.013	0.013
External Migrant < 5 Years	0.007	0.024	0.082	0.017	0.027	0.082
External Migrant < 1 Year	0.002	0.007	0.020	0.005	0.007	0.020
Population under 14	0.186	0.184	0.184	0.186	0.201	0.192
Population 15–19	0.070	0.066	0.065	0.067	0.068	0.063
Population 55–64	0.105	0.097	0.093	0.095	0.090	0.084
Population 65+	0.138	0.138	0.120	0.123	0.131	0.114
Speak English at Home	0.497	0.799	0.722	0.275	0.910	0.810
Housing Built 1991–2001	0.128	0.124	0.141	0.070	0.075	0.095
Average Rooms in Dwelling	6.33	6.42	6.07	5.78	6.47	6.02
Fraction of Dwellings Owned	0.680	0.660	0.606	0.568	0.675	0.586
Average Value of Dwelling	124660.70	189579.20	260589.80	129491.50	177860.50	239310.30
Average Rent	555.47	689.41	799.77	586.27	723.16	810.54
Number of FSAs	4074	4074	4073	3685	3685	3685

Notes: FI = Fragmentation Index. Low, Med, and High are based on terciles of the Fragmentation Index for visible minority and religious groups using all available data pooled across time. Variables are as described in previous tables.

5. Results

In next two subsections we first look at ethnic diversity, then religious diversity, both using the Fragmentation Index of diversity. In the third subsection we reconsider these results with a different index meant to capture concentration or polarization of communities.

5.1. Ethnic diversity

In Table 4 we present regressions of average donations on measures of visible minority heterogeneity. Columns 1–3 are OLS estimates of Eq. (3), regressing donations on visible minority FI with different sets of control variables. Recall that we interpret our results through Eq. (1), where coefficients measure the effect of increasing own-group share on donations. As such, the coefficient on FI measures the effect of moving from complete homogeneity (FI = 0) to complete heterogeneity (FI = 1), or equivalently the negative of the effect of increasing own-group share from 0 to 100%.

Our preferred specification is in column 3, which includes all controls and FSA fixed effects. An increase of 0.1 in the FI visible minority diversity measure lowers the average donation per adult by about $36 (that is, $358.56 times 0.1), meaning that on average individuals display own-group affinity. Relative to the overall mean, this represents a 15% drop in average donations per adult, which we consider to be a substantial effect. To put this into perspective between 1996 and 2006 ethnic diversity in Canada increased by 0.06 points, which our results suggests lowered giving in urban areas by nine percent.

In column 4 we estimate Eq. (2), which allows the squared shares to enter the equation separately. The interpretation of the coefficients here, as per Eq. (1), is the effect of increasing own group shares on donations. We find that an increase of 10 percentage points in the share of the majority group, whites, increases donations by $106 for this group, and a 10-point increase in the share Black increases donations by $591.[13] A 10-percentage point increase in the East Asian group, on the other hand, reduces donations by roughly $116. Others are not statistically significant.

[13] While the coefficient on share black appears large relative to the overall mean donation, it would be more appropriate to compare to the mean among black individuals in the sample. Due to the aggregated nature of our data, we are not able to compute the average donation among black individuals in the sample. Thus, it is unclear whether this coefficient is large or small.

Table 4
Effect of visible minority heterogeneity on average donation.

	Full Sample				Census Years Only	
	(1)	(2)	(3)	(4)	(5)	(6)
Fragmentation Index	**1023.69** (142.56)	−**185.48** (77.38)	−**358.56** (129.68)		−**404.07** (171.91)	
% Black	−**1602.32** (349.91)	109.21 (199.54)	**1386.62** (430.27)	−274.28 (439.76)	**1417.56** (508.83)	−232.52 (642.40)
% Black Squared				**5911.69** (2225.33)		**5573.21** (2588.36)
% East Asian	−**609.42** (118.46)	47.40 (118.48)	**913.24** (217.36)	***483.44*** (267.54)	**1087.98** (323.04)	555.65 (412.42)
% East Asian Squared				−**1157.4** (374.28)		−**975.92** (450.06)
% South Asian	−**859.44** (199.07)	137.38 (133.77)	**1299.52** (182.57)	414.94 (288.35)	**1283.52** (243.47)	367.79 (373.16)
% South Asian Squared				−564.81 (416.20)		−509.85 (534.10)
% Arab West Asian	−**1678.52** (490.49)	−451.04 (404.11)	327.51 (414.57)	−418.18 (551.48)	694.25 (537.06)	−93.47 (681.08)
% Arab West Asian Squared				−3347.15 (3899.75)		−3113.42 (5166.98)
% Other	−**2944.63** (652.19)	***670.44*** (396.00)	**1679.75** (468.86)	95.6 (494.57)	**1346.90** (615.95)	5.13 (651.00)
% Other Squared				7742.7 (5439.76)		3498.09 (6497.43)
% White Squared				**1057.75** (284.67)		**1083.52** (343.95)
Household Income		**147.29** (12.69)	**94.86** (18.64)	**96.21** (18.42)	**112.39** (27.24)	**113.54** (27.12)
R^2	0.085	0.739	0.935	0.935	0.923	0.924
F	44	79	38	39	31	30
N	12221	12221	12221	12221	3333	3333
Census Controls	No	Yes	Yes	Yes	Yes	Yes
FSA Effects	No	No	Yes	Yes	Yes	Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Bolded coefficients are significant at the 5% level; bold-italic coefficients are significant at the 10% level. Full sample includes data from all years 1996–2006, including linearly interpolated census data between years. Census years includes data from 1996, 2001, and 2006 only. Visible minority shares were demeaned prior to estimation, so the coefficients are interpreted as the effect of increasing the share on donations when the share is at its mean. F is the F-statistic of overall significance of the model. Census controls are all variables listed in the previous tables.

In columns 5 and 6 we check the robustness of our results to the linear interpolation between Census years. When we restrict the sample to only years when the Census data are observed, we get very similar results. In an additional robustness test, we replaced the average donation per adult with the median donation in the FSA to test whether outliers were influencing our results. While we do not report those coefficients here, the results were very similar to those in Table 4.

Our results therefore confirm that the negative relationship between diversity and publically provided goods also exists for public goods financed through private contributions. They suggest further that the negative relationship between racial diversity and charitable donations found in past research goes beyond subsets of the charitable sector where diversity is expected to play a key role, like racially homogeneous churches. In particular, we find a country-wide average effect of diversity on donations to a representative set of charities, which could include churches, but also food banks and the arts. We interpret this to mean that diversity plays a key role in determining revenues for the charitable sector as a whole, which has potentially serious implications in countries like Canada and the United States that are growing increasingly diverse over time.

One of the key advantages of our study is that we are able to explore the effect of diversity on both the intensive and extensive margins of donations. Table 5 reports coefficients from our preferred specification, but with of fraction of households who donate as the outcome variable. Here we find no statistically significant effect. Breaking out the FI into shares squared we see that a 10 percentage point increase in the Other share increases probability of donation by about 45 percentage points. Other coefficients are statistically insignificant.

Overall, the results indicate that on average, charitable giving is sensitive to the demographic composition of the community. We find evidence that the donation amounts are sensitive to the ethnic makeup of the community, but the fraction of people who donate is not. These average effects mask some heterogeneity across ethnic groups: while some groups donate more with increases in their group shares, others donate less. Along the extensive margin, though we show average effect, the fraction who donate rises with the fraction of Other ethnicities.[14]

5.2. Religious diversity

Table 6 reports the results of regressions where both average donations and fraction of households who donate are regressed on diversity measures.[15] We find that increasing religious diversity FI by 0.1 reduces average donations per adult

[14] To dig deeper into what drives the diversity effect, we broke the data into terciles of household income, and terciles of the fraction of the people with a bachelor's degree, then estimated diversity coefficients for each. We found that while there were differences in magnitude across these groups, the coefficients were statistically indistinguishable across both the income and education groups along the intensive and extensive margins. These results are available in Appendix A.

[15] The results in Table 6 are broadly similar when we use only the census years. See Appendix A for the results.

Table 5
Effect of visible minority heterogeneity on fraction of households that donate.

	Full Sample				Census Years Only	
	(1)	(2)	(3)	(4)	(5)	(6)
Fragmentation Index	**0.38** (0.08)	0.03 (0.03)	0.02 (0.05)		0.00 (0.07)	
% Black	−**0.50** (0.22)	−0.03 (0.08)	0.16 (0.13)	−0.03 (0.11)	0.17 (0.15)	−0.05 (0.13)
% Black Squared				1.26 (0.83)		***1.43*** (0.86)
% East Asian	−**0.25** (0.09)	−**0.08** (0.04)	−0.03 (0.06)	0.02 (0.09)	0.00 (0.07)	0.03 (0.11)
% East Asian Squared				−0.21 (0.14)		−0.15 (0.18)
% South Asian	−0.02 (0.15)	−0.02 (0.04)	**0.23** (0.06)	**0.25** (0.12)	**0.17** (0.07)	0.17 (0.17)
% South Asian Squared				−0.18 (0.21)		−0.10 (0.26)
% Arab West Asian	−0.40 (0.29)	−**0.43** (0.11)	−0.11 (0.14)	−0.19 (0.15)	−0.13 (0.17)	−0.27 (0.17)
% Arab West Asian Squared				0.42 (1.13)		1.09 (1.24)
% Other	−**2.66** (0.43)	0.13 (0.17)	0.13 (0.15)	−0.19 (0.17)	0.07 (0.18)	−0.30 (0.20)
% Other Squared				**4.49** (1.76)		**5.19** (1.99)
% White Squared				0.04 (0.12)		0.01 (0.15)
Household Income		**0.02** (0.00)	**0.00** (0.00)	**0.00** (0.00)	**0.00** (0.00)	***0.00*** (0.00)
R^2	0.083	0.808	0.979	0.979	0.972	0.973
F	206	259	98	88	42	38
N	12221	12221	12221	12221	3333	3333
Census Controls	No	Yes	Yes	Yes	Yes	Yes
FSA Effects	No	No	Yes	Yes	Yes	Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Bolded coefficients are significant at the 5% level; bold-italic coefficients are significant at the 10% level. Full sample includes data from all years 1996–2006, including linearly interpolated census data between years. Census years includes data from 1996, 2001, and 2006 only. Visible minority shares were demeaned prior to estimation, so the coefficients are interpreted as the effect of increasing the share on donations when the share is at its mean. F is the F-statistic of overall significance of the model. Census controls are all variables listed in the previous tables.

Table 6
Effect of religious heterogeneity on donation outcomes.

	Average Donations		Fraction of Households Donating	
	(1)	(2)	(3)	(4)
Fragmentation Index	−226.86 (153.15)		−0.03 (0.07)	
% Catholic	−420.97 (290.02)	−306.35 (330.64)	−0.06 (0.10)	**0.38** (0.10)
% Catholic Squared		**660.61** (313.27)		−***0.22*** (0.12)
% Christian	−***358.33*** (207.38)	−149.02 (362.68)	−***0.15*** (0.09)	**0.41** (0.12)
% Christian Squared		−295.97 (558.15)		−**0.49** (0.18)
% Muslim	−**1054.64** (385.21)	−***1042.61*** (623.39)	0.01 (0.12)	**0.40** (0.16)
% Muslim Squared		−176.89 (1061.51)		0.64 (0.53)
% Jewish	−1255.50 (999.69)	−814.79 (1091.59)	0.07 (0.12)	**0.46** (0.17)
% Jewish Squared		−595.42 (1693.10)		0.02 (0.18)
% Other	−314.31 (219.26)	−606.55 (407.05)	0.06 (0.13)	**0.54** (0.18)
% Other Squared		805.85 (666.29)		0.00 (0.35)
% No Religion Squared		59.45 (637.94)		**2.02** (0.29)
Household Income	**153.37** (22.38)	**152.92** (22.67)	0.00 (0.00)	0.00 (0.00)
R^2	0.925	0.925	0.977	0.978
F	26	24	136	128
N	11055	11055	11055	11055
Census Controls	Yes	Yes	Yes	Yes
FSA Effects	Yes	Yes	Yes	Yes
Year Effects	Yes	Yes	Yes	Yes

Notes: Bolded coefficients are significant at the 5% level, and bold-italic coefficients are significant at the 10% level. Religion shares were demeaned prior to estimation, so the coefficients are interpreted as the effect of increasing the share on donations when the share is at its mean. F is the F-statistic of overall significance of the model. Census controls are all variables listed in the previous tables.

by $23, though the coefficient is not statistically significant. Using squared shares instead of the FI, the only statistically significant result is that Catholics have a statistically significant positive group affinity.[16]

We also report in Table 6 that the fraction of households who donate is insensitive to religious fragmentation, suggesting no within-group affinity on average. In specifications that use squared group shares separately, we find that a 10 percentage point increase in the non-religious population leads to a 20 percentage point increase in non-religious households that

[16] In results not reported, we generated estimates based on two alternative groupings of religions. In the first, we simply joined Catholics with the Christian group. In the second, we decompose Christians into finer groups, and also regroup the other religions. The coefficient on FI remains negative, but the magnitude is stronger when Catholics are grouped with Christians.

Table 7
Effect of RQ measure on average donations and fraction of households who donate.

Panel A	Visible Minority		Panel B	Religion	
	Donation Amount (1)	Fraction Donating (2)		Donation Amount (3)	Fraction Donating (4)
RQ	−**219.52** (62.67)	−0.01 (0.03)	RQ	−***126.59*** (70.11)	**0.12** (0.04)
% Black	**1152.60** (392.42)	***0.19*** (0.11)	% Catholic	−359.55 (258.53)	0.03 (0.09)
% East Asian	**800.21** (208.33)	−0.01 (0.06)	% Christian	−266.33 (197.81)	−***0.16*** (0.09)
% South Asian	**1148.01** (164.18)	**0.24** (0.05)	% Muslim	−**1193.56** (416.10)	0.09 (0.12)
% Arab West Asian	−29.89 (362.52)	−0.08 (0.12)	% Jewish	−1212.63 (1016.07)	0.10 (0.11)
% Other	**1310.25** (407.64)	0.17 (0.12)	% Other Religions	−325.56 (211.53)	0.13 (0.14)
Household Income	**95.61** (18.70)	**0.00** (0.00)	Household Income	**152.16** (22.19)	0.00 (0.00)
				0.93	0.98
R^2	0.935	0.979	R2	0.925	0.978
F	39	97	F	25	139
N	12221	12221	N	11055	11055
Census Controls	Yes	Yes	Census Controls	Yes	Yes
FSA Effects	Yes	Yes	FSA Effects	Yes	Yes
Year Effects	Yes	Yes	Year Effects	Yes	Yes

Notes: Bolded coefficients are significant at the 5% level, and bold-italic coefficients are significant at the 10% level. RQ is a measure of polarization of groups, as discussed in Montalvo and Reynal-Querol (2002). Religion and Visible Minority Shares were demeaned prior to estimation, so the coefficients are interpreted as the effect of increasing the share on donations when the share is at its mean. F is the F-statistic of overall significance of the model. Census controls are all variables listed in the previous tables.

donate, while a similar increase in the share Christian leads to a fall in the fraction of such households that donate by 4.9 percentage points, and a fall in the fraction of Catholic households that donate by 2.2 percentage points.

While one of the advantages of our data is that it contains detailed information on religious groups, these results are unfortunately not robust enough to make any firm conclusions. In particular, Table 6 shows that the key coefficients are noisy, and in other analyses we found that the coefficient on the religion FI is sensitive to including the ethnic FI. Thus, despite their potential importance, the religiosity results should be interpreted cautiously.

5.3. Diversity or polarization?

While our model motivates our use of the FI, we estimate models with an alternative measure of community diversity frequently found in the literature called the RQ index (Montalvo and Reynal-Querol, 2002), which is defined as:

$$\mathrm{RQ}_{jt} = 1 - \sum_{k=1}^{K} \left(\frac{0.5 - \mathrm{share}_{kjt}}{0.5} \right)^2 \mathrm{share}_{kjt}.$$

Whereas the FI measures fragmentation, RQ measures *polarization*. The difference is best illustrated by example. Suppose there are three ethnic groups in the population. FI takes a maximum when the population is divided equally among the groups, whereas RQ takes a maximum when the population is divided equally among only two of the groups. The distinction between fractionalization and polarization could prove important if it is really two opposing groups that matter, rather than diversity spread over many groups. Note that despite the differences in interpretation, both measures are highly correlated at low values of the FI, not correlated at middle values, and negatively correlated at high values. Thus, relatively homogenous societies that become more diverse also initially become more polarized, but highly diverse societies that become more diverse can become less polarized.

Results in Table 7 show that ethnic polarization also reduces average charitable donations per adult. A 0.1 change in this index reduces donations by roughly $22. Note that this index is not in the same scale as the FI, so the coefficients are not directly comparable. Nevertheless, the effect is in the same direction, which is not surprising because at low levels of the FI, the measures are highly correlated. Similar to prior results, polarization does not have a statistically significant effect on the fraction of households who donate.

An increase in religious polarization by 0.1 reduces donations by $13 and increases the fraction of households who donate slightly by 1.2 percentage points. We again caution that these results may lack statistical precision and robustness.

Polarization therefore has a similar effect on donations as an increase in diversity. To the extent that these two measures are closely related when population heterogeneity is low, polarization and diversity may simply be measuring the same underlying effect. Our results are in line with Alesina et al. (2003), who suggest that when it comes to the effect of ethnic heterogeneity on public goods, fractionalization and polarization produce similar results.

6. Conclusion

In this paper we examine the relationship between ethnic diversity, religious diversity, and charitable donations. While previous literature has shown that publicly provided goods could be lower in jurisdictions that are more heterogeneous along these dimensions, the effect on privately provided public goods depends on whether people treat them as substitutes. Prior work shows that donations are negatively related to the ethnic composition of the surrounding area, but those results might be context-specific. By contrast, our data allows us to estimate whether donations to a representative set of charities vary with diversity using a country-wide sample of urban areas. We also explore this relationship along the intensive and extensive margins.

We find that increasing diversity leads to a decline in support for privately provided public goods, in particular private charity. The average donation per adult in our sample drops by $36 per year when the ethnic FI increases by 0.1 points. This adds up to a substantial drop in the level of this public good. This effect is mainly driven by non-minorities, who contribute $11 less for each percentage point their group share drops, and blacks, who contribute $59 less. We find no consistent evidence that ethnic diversity affects the propensity for households to donate.

Religious diversity might also lower contributions. We find a negative relationship between religious heterogeneity and amount donated, possibly driven by Catholics that donating more when their group share rises in the population. These estimates are, however, less precise and less robust than the estimates based on ethnic diversity.

Our results imply that the recent and continuing demographic changes across North America and Europe may have a significant and sizable impact on charitable services provided through voluntary contributions of individuals. As communities grow more diverse, charity revenues may fall. This raises further public policy concerns, especially in urban areas, as religious and ethnic diversity inevitably grow. Hence, the negative effect of diversity on publicly provided goods is compounded by the fact diversity has a negative effect on privately provided charity as well.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at http://dx.doi.org/10.1016/j.jebo.2016.05.010.

References

Alesina, A., Baqir, R., et al., 1999. Public goods and ethnic divisions. Q. J. Econ. 114 (4), 1243–1284.
Alesina, A., Baqir, R., et al., 2000. Redistributive public employment. J. Urban Econ. 48 (2), 219–241.
Alesina, A., Glaeser, E., et al., 2001. Why doesn't the United States have a European-style welfare state? Brook. Pap. Econ. Act. 2 (2001), 187–254.
Alesina, A., Devleeschauwer, A., et al., 2003. Fractionalization. J. Econ. Growth 8, 155–194.
Alesina, A., La Ferrara, E., 2000. Participation in heterogeneous communities. Q. J. Econ. 115 (3), 847–904.
Alesina, A., La Ferrara, E., 2002. Who trusts others? J. Public Econ. 85 (2), 207–234.
Alesina, A., La Ferrara, E., 2005. Ethnic diversity and economic performance. J. Econ. Lit. 43 (3), 762–800.
Andreoni, J., 2006. Philanthropy. In: Kolm, S., Ythier, J.M. (Eds.), Handbook on the Economics of Giving, Reciprocity and Altruism. Elsevier, Amsterdam.
Andreoni, J., Payne, A.A., 2013. Charitable giving. In: Auerbach, A., Chetty, R., Feldstein, M., Saez, E. (Eds.), Handbook of Public Economics, vol. 5. Elsevier, Amsterdam.
Cutler, D.M., Elmendorf, D.W., et al., 1993. Demographic characteristics and the public bundle. Public Finance 48 (Suppl), 178–198.
Dahlberg, M., Edmark, K., Lundqvist, H., 2012. Ethnic diversity and preferences for redistribution. J. Political Econ. 120 (1), 41–76.
Dimitrova-Grajzl, V., Grajzl, P., et al., 2016. Racial group affinity and religious giving: evidence from congregation-level panel data. B.E. J. Econ. Anal. Policy (Contributions) 16 (2), 689–725.
Fershtman, C., Gneezy, U., 2001. Discrimination in a segmented society: an experimental approach. Q. J. Econ. 116 (1), 351–377.
Fong, C.M., Luttmer, E.F.P., 2009. What determines giving to Hurricane Katrina victims? Experimental evidence on racial group loyalty. Am. Econ. J. Appl. Econ. 1 (2), 64–87.
Fong, C.M., Luttmer, E.F.P., 2011. Do race and fairness matter in generosity? Evidence from a nationally representative charity experiment? J. Public Econ. 95 (5–6), 372–394.
Goldin, C., Katz, L.F., 1999. Human capital and social capital: the rise of secondary schooling in America 1910 to 1940. J. Interdiscip. Hist. 29 (4), 683–723.
Habyarimana, J., Humphreys, M., et al., 2007. Why does ethnic diversity undermine public goods provision. Am. Political Sci. Rev. 101 (4), 709–725.
Hungerman, D.M., 2008. Race and charitable church activity. Econ. Inq. 46 (3), 380–400.
Hungerman, D.M., 2009. Crowd out and diversity. J. Public Econ. 93, 729–740.
Jackson, Ken, 2010. Public Good Provision, Diversity, and Distribution. Wilfrid Laurier University, Mimeo.
Miguel, E., Gugerty, M.K., 2005. Ethnic diversity, social sanctions, and public goods in Kenya. J. Public Econ. 89 (11–12), 2325–2368.
Montalvo, J.G., Reynal-Querol, M., 2002. Why Ethnic Fractionalization? Polarization, Ethnic Conflict and Growth. Universitat Pompeu Fabra, Mimeo.
Okten, C., Osili, U.O., 2004. Contributions in heterogeneous communities: evidence from Indonesia. J. Popul. Econ. 17 (4), 603–626.
Poterba, J.M., 1997. Demographic structure and the political economy of public education. J. Public Policy Anal. Manag. 16 (1), 48–66.
Statistics Canada, 2010. Financial and Charitable Donors Databank of the Income Statistics Division User Guide, Statistics Canada: Income and Statistics Division.
Stichnoth, H., Van der Straeten, K., 2009. Ethnic diversity and attitudes towards redistribution: a review of the literature, ZEW—Zentrum für Europäische Wirtschaftsforschung/Center for European Economic Research.
Vigdor, J.L., 2002. Interpreting ethnic fragmenation effects. Econ. Lett. 75 (2), 271–276.
Vigdor, J.L., 2004. Community composition and collective action: analyzing initial mail response to the 2000 census. Rev. Econ. Stat. 86 (1), 303–312.