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Citizens' willingness to support new taxes for COVID-19 measures and the role of trust¹

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Abstract

The COVID-19 public health pandemic saw governments spend trillions of dollars to limit the spread of the COVID-19 virus as well as to soften the economic blow from the shutting down of national economies. Subsequent budget shortfalls raise the question of how governments will pay for the direct and indirect costs associated with the COVID-19 pandemic. In this paper, we study the public's willingness to contribute through paying a new tax. We find that both generalized social and political trust are associated with a greater willingness to support a COVID-related tax and that generalized social trust in particular attenuates the negative effect of an experimentally manipulated, specified level of tax burden on policy support. These findings entail important implications for the public opinion and tax policies literatures, and also for policymakers.

Keywords: COVID-19; public health; generalized social trust; political trust; economic recovery; tax policy; willingness to pay

Introduction

In late December 2019, the Wuhan Municipal Health Commission in China began reporting on dozens of cases of pneumonia, later confirming the existence of a novel coronavirus, SARS-CoV-2, that causes the COVID-19 disease (World Health Organization 2020a). In a matter of months, the disease travelled to at least 177 countries, infecting millions and claiming hundreds of

thousands of lives, leading the World Health Organization to declare a pandemic by early March (Bryson Taylor 2020). In an attempt to flatten the exponential trajectory of infection, many governments shuttered social and economic activity, ordering most businesses to close, limiting travel, and requiring individuals to practice social distancing through self-isolation, quarantine, and lockdowns. Governments also responded by reallocating economic and military activity toward ensuring medical needs, while providing immediate financial assistance to businesses and households told to close and stay home. In different countries, including Canada – where our study is set – these strong government measures received wide public support (Ipsos 2020; Pickup, Stecula and van der Linden 2020).

While necessary to limit the spread of infection, such measures also contributed to what the International Monetary Fund described as the “worst economic downturn since the great depression” (Gopinath 2020), or what the World Bank described as twice as bad as the 2009 financial crisis (Kose and Sugawara 2020). What made this economic slowdown different, however, was the speed and magnitude with which economic activity fell. In a matter of weeks, 15 million workers applied for unemployment insurance benefits in the United States alone, with expectations that this country could see up to 20 million jobs lost as a result of a COVID-19-related recession (Mutikani 2020). Faced with unforeseen sharp economic decline in virtually every country, coupled with global unemployment estimates expected to hit levels unseen since the mid 20th century, many governments responded with an array of fiscal measures designed to soften the economic blow and to revive their national economies. The United Nations estimates that the COVID-19 outbreak will cost *at least* \$1 trillion (United Nations 2020).

In light of the substantive economic costs and government debts involved, balancing budget deficits is likely to be one of the enduring legacies of the post-COVID world (The Economist 2020). We can thus expect that improving public sector finances will become a priority for many governments in the foreseeable future. In seeking solutions to this problem, governments will face the question of whether or not, and how, to increase the financial burden on taxpayers to pay for the expansion of government expenditures in a variety of health and social initiatives designed to keep the economy afloat (OECD 2020). In this context, we examine the public's support for new taxes to finance COVID-19 related expenditures in public health and economic support. The Canadian experience with the COVID-19 outbreak is illustrative of a country that falls very much in-between Western countries that saw relatively few population-adjusted deaths (e.g. Germany and Portugal) and those experiencing a much higher death rate (e.g. the United States and the United Kingdom) (World Health Organization 2020b). Moreover, Canada is very much a typical case of a country that took quick action. Like many other advanced democracies – particularly those in Europe – the Canadian government responded to a massive increase in unemployment insurance claims following the first outbreak on its territory with a series of economic measures designed to prevent large-scale economic decline, including direct cash payments to help citizens that saw their income shrink temporarily or permanently, as well as wage subsidies for large and small businesses (Rothwell 2020). The ensuing budget shortfalls are substantial. Overall, these expenditures in health, economic and social programs are projected to increase the Canadian budget deficit by an order of magnitude, from \$24.9 billion in 2019-2020 to \$252.1 billion in 2020-2021 (Office of the Parliamentary Budget Officer 2020). Thus, like many countries around the world, Canada faces the challenge of paying for the unintended

economic consequences of government-imposed lockdowns as well as for reviving the economy in a post-COVID world.

Our analysis focusses on the links between generalized social trust and public opinion on the idea of imposing a new tax to pay for government measures taken in response to the COVID-19 pandemic. We argue that the pandemic context creates a large-n social dilemma, requiring citizens to weigh their own self-interests against broader societal interests. Particular to the context of our study, support for a new tax involves assuming individual costs for a positive externality provided by government programs intended to reduce the economic and health consequences of the pandemic. In such a context, generalized social trust likely plays an important role, as a large literature suggests that citizens are more likely to make sacrifices for the greater good (e.g. pay a new tax to help fund COVID-19 related initiatives) when they believe other citizens will also comply (i.e. when they trust others) (Sønderskov 2011; Uslaner 2002).

To preview our findings, we find limited willingness to support such a tax. However, while the public's willingness to accept a larger fiscal burden appears to be quite limited, we find that trust is associated with stronger public support for new taxes in these exceptional circumstances. In addition, we find that generalized social in particular attenuates the negative impact of cost-imposition on willingness to support a new COVID-19 related tax; more trustful respondents display higher support. These results suggest that governments' fiscal room for maneuver is quite modest, and that policymakers will need to build public trust and support for new taxes, or otherwise seek new ways of addressing public deficits in the coming years.

Tax policy preferences and the role of trust

Much scholarly attention has focused on the social, political and economic responses to the COVID-19 pandemic (e.g., Armstrong and Lucas 2020; Hale *et al.* 2020; Merkley *et al.* 2020). The attention is only just turning to the issue of how governments will pay for the costs associated with this response (Bansak, Betchel and Margalit 2020; Jacques 2020; Smith 2020). A straightforward way for governments to pay for the economic costs of the crisis would be to raise taxes. This might be difficult to put in practice, however, as a large literature suggests that the public is generally tax-averse (e.g., Kallbekken, Kroll, and Cherry 2010; 2011; McCaffery and Baron 2006; Sussman and Olivola 2011). This aversion can be explained in part by the fact that people want to avoid private financial losses, but scholars have suggested that cultural, political, and psychological factors (heuristic, bias, and framing effects) are also important for understanding the public's aversion to taxes (McCaffery and Baron 2006; Reimers 2009; Sussman and Olivola 2011).

A number of factors might be expected to affect the public's willingness to support a new COVID-19 related tax. In this study, we specifically focus on the role of generalized social trust (Sønderskov 2009; 2011; Uslaner 2002). This focus is rooted in the characteristics of the public health crisis itself, which suggest a large-scale collective action framework should be relevant for explaining differences in citizens' willingness to support a collective response to the COVID-19 pandemic. Indeed, the pandemic itself creates a social demand for collective action – and for the provision of public goods – that goes above and beyond the role of government in managing the crisis (Harring, Jagers and Löfgren 2020). In fact, limiting the spread of the virus depends crucially on the behaviours of fellow citizens, as well as on their willingness to make personal sacrifices

and contribute to the greater good. The importance of “working together” and collective sacrifice was commonly equated with successfully fighting the spread of the virus. These sacrifices can take various forms, including wearing masks, forgoing social interactions with friends and family, or, as in the case here, supporting policies to help finance government programs designed to mitigate the direct and indirect negative consequences of the public health crisis. In this sense, the pandemic may create for citizens a social dilemma, or a conflict between collective and self-interests (Kirchler 1997), in which generalized social trust is commonly thought to play an important role (Sønderskov 2011).

Theorizing the role of generalized social trust in facilitating cooperation and beneficial social outcomes can be traced back over two hundred years to the work of British empiricist David Hume, who long ago identified the importance of interpersonal trust for providing assurance as to the expected behaviour of others (Kramer 2010). More recently, research on collective action in large-n social dilemmas provides theoretical insights into the importance of generalized social trust for a broad range of outcomes (Balliet and Van Lange 2012; Sønderskov 2009; 2011; Uslaner 2002). Defined as a general belief that others are trustworthy and fair (Sønderskov 2009; 2011) or simply that “most people can be trusted,” (Uslaner 2002, 21), generalized social trust can be conceptualized as a general outlook on human nature that sees most people as trustworthy and well-intentioned (Uslaner 2012, 2). Generalized social trust thus refers to the expectations people have about the behaviours and preferences of unknown or generalized others (Sønderskov 2011; Uslaner 2002). As a default expectation, generalized social trust has been used to explain cooperation in social dilemmas characterized by a large number of actors in an anonymous setting and where the rational thing to do is to free ride on the actions of others (Scholz and

Lubell 1998). In such situations, generalized social trust is thought to facilitate cooperation through the “social exchange heuristic” (Sønderskov 2011). From this perspective, individuals are “conditional cooperators”; they cooperate with others when they believe that others will do so as well (Sønderskov 2009). To the extent that individuals believe that most people can be trusted to do their share (e.g. paying taxes or not abusing the system), it follows that generalized social trust should facilitate cooperation and a willingness to participate in broad-based collective action for the greater good.

Empirically, a large literature has documented the role of generalized social trust in explaining such beneficial collective outcomes as better economic and political performance, public good provision, the size of the welfare state and the overall quality of democracy (Bjørnskov and Svendsen 2013; Inglehart and Welzel 2005; Knack 2002; Knack and Keefer 1997; Putnam 1993). At the individual level, generalized social trust has been found to predict recycling behaviour (Harring, Jagers, and Nilsson 2019; Sønderskov 2011), immunization against the H1N1 pandemic (Rönnerstrand 2013), improved health outcomes (Kim and Kawachi 2007; Yip *et al.* 2007;) and a general willingness to adopt self-sacrifice behaviours for the common good (Marcias 2015). Specific to tax policy, other studies have found generalized social trust is associated with a greater willingness to pay for both more taxes to improve healthcare (Habibov, Cheung and Auchynnikava 2017) as well as for market-based solutions for solid waste management (Jones *et al.* 2010). Using an indicator of social trust specific to the belief that others pay their taxes, Scholz and Lubell (1998) also find that trust in fellow citizens is associated with significantly lower levels of noncompliance with tax policy in the United States. In light of this theory and these empirical

results, we expect generalized social trust to be associated with greater support for a COVID-19 related tax.

Of course, other forms of trust might also be relevant for explaining tax policy preferences among citizens, and these other forms of trust ought to be distinguished from generalized social trust (Uslaner 2002). Such other forms of trust include trust in specific people or groups (e.g. specific trust in friends, family or neighbours), and institutionalized trust (e.g. trust in government). Of these, the literature suggests that political trust in particular is relevant for explaining policy preferences (Hetherington 2005). Defined as “a global affective orientation toward government,” political trust ought to shape citizens’ tax policy preferences insofar as people should be more likely to contribute to government coffers when they believe the government is trustworthy and will not waste their money (Rudolph and Evans 2005, 661). Conversely, we might expect political distrust, or a lack of confidence in political institutions, to contribute to anti-tax sentiment (Rudolph 2009; Rothstein 2000). While there is empirical support in the literature documenting this kind of direct and unconditional relationship between political trust and tax policy preferences and behaviours (e.g. Hammar and Jagers 2006; Scholz and Lubell 1998), the literature also suggests that the relationship between political trust and government (tax/spending) policy is itself conditioned by other variables, and figures more prominently when individuals are asked to sacrifice material (Hetherington 2005) or ideological (Rudolph 2009) interests. For instance, Hetherington (2005) suggests that political trust should be most influential when a government program or policy requires an individual to sacrifice their own material interests with little expectation of a direct benefit for them personally. Following this logic, we might expect political trust to be somewhat less salient in the context of COVID-19.

After all, the governments' COVID-policies are intended to enhance public health and keep the economy afloat by assisting a large number of individuals and groups, with tangible benefits for society writ large. At the same time, following the logic that trust ought to figure more prominently when a policy requires a material sacrifice (e.g. a new tax on income), we might expect political trust to interact with the size of an individual's tax burden, with a larger tax burden leading to lower policy support.

In addition to such trust-based considerations, a number of other literatures are relevant for examining public support for new taxes. The literature on climate change attitudes and policy preferences, for instance, suggests that the likelihood of supporting a policy or action intended to contribute to the public good depends on the level of associated private costs. As a consequence, policies and actions imposing a larger individual burden are likely to receive less support (Hammar and Jagers 2006; Lubell, Zhran and Vedlitz 2007). Support for tax policies in particular have been found to be influenced by earmarking, or "hypothecation," which highlights the potential role of targeted revenue allocation in increasing support for things like national insurance contributions (e.g., unemployment insurance) road tolls (Wilkinson 1994) and environmental taxes (Bachus, Ootegem and Verhofstadt 2019; Kallbekken and Aasen 2010; Lachapelle, Borick and Rabe 2012). A number of other individual-level factors have further been identified as important for explaining citizens' tax policy preferences. For instance, political ideology has been found to be associated with tax policy, with those on the ideological right generally more likely to oppose taxes (or support tax cuts) likely as a result of their distaste for government intervention in the economy (Lupia, *et al.* 2007). Meanwhile, other studies suggest that ideology may condition the role of other factors (like trust) in shaping tax policy preferences

(Rudolph 2009). The ‘willingness to pay’-literature in environmental economics has further demonstrated that people’s stated willingness to pay in contingent valuation studies is strongly conditioned by income (Jacobsen and Hanley 2009; Kotchen, Turk and Leiserowitz 2017).

In summary, and applied to the current pandemic, the literature provides several key insights. Broadly, the spread of the COVID-19 disease has had substantial impacts on society – in terms of, for instance, public health and economic consequences. Individuals were asked to cooperate, limit their freedom and make personal sacrifices in order to help governments and public health agencies slow the spread of the virus. This, we argue, focussed people’s attention on the actions of strangers, and made the influence of generalized social trust in explaining cooperation more salient. In addition, many countries – including Canada – went through the worst economic decline since the Second World War, requiring major investments in social and economic programs. All these measures imposed broadly diffused costs on citizens, for clearly defined, society-wide benefits. This too, we argue, should enhance the salience of generalized social trust. The COVID-19 pandemic thus provides an interesting case in which to examine the role of trust in explaining citizens’ willingness to support a new tax. Indeed, we know that generalized social trust in particular has the potential to increase cooperation and self-sacrifice behaviours, while political trust is likely to play a role as well. The extant literature also finds that, at the level of tax design, specified policy costs and the transparent and targeted use of revenue can influence public support for a new tax, at least in the case of environmental policy, which raises the question of whether or not this finding travels to other policy domains, such as public health. Finally, in light of past research on tax policy preferences and citizens’ willingness to pay, we are

also interested in examining the role of ideology and income in explaining the public's willingness to support a new COVID-19 related tax.

In this paper, we build on the theory of generalized social trust and contribute to the literature on social, economic, and political responses to COVID-19 by answering three interrelated questions. How supportive are members of the public to new taxes in a pandemic context? Is the public more supportive when taxes are framed as addressing public health (i.e., limit the spread of infection) as opposed to public finance (i.e., revive the economy) objectives? And, to what extent does generalized social trust affect the public's willingness to pay higher taxes to finance governments' response to the public health crisis created by the pandemic?

Data and methods

To answer these questions, we analyze data from a Census-balanced, nationally representative (based on age, sex, region, education and language) sample of 1,006 Canadian adults drawn from the Léger 360 online platform. This web-based panel consists of over 400,000 Canadian residents, sixty per cent of which were recruited using random-digit dialing. Of 6,265 panel participants who were invited by Léger to complete our survey, we secured 1,006 complete questionnaires, for a completion rate of 16 percent. The survey was self-administered by respondents online, between April 15th and April 21st 2020.

Our embedded population-based survey experiment manipulated two factors to examine their impact on support for a new tax to finance government spending related to COVID-19 policy measures. First, to assess the impact of earmarking, we randomly assigned respondents to receive a vignette highlighting either the economic importance of the new tax or its importance

for public health. More specifically, respondents were exposed either to a question framed around a new tax “...to revive Canada’s economy” or “...to help fight the spread of COVID-19 (coronavirus).” Second, we treated respondents with a cost specification, in which we indicated how much the tax would cost them personally, expressed as a percentage of their income. The specified tax levels included “1%,” “2%,” “5%,” and “10%,” with a fifth condition in which no private cost was specified. Our experimental procedure thus followed a 2 x 5 factorial design.²

The dependent variable in our analysis is support for a tax policy, which we measured by means of the question: “If the federal government were to propose imposing a new tax to fund massive spending to [revive Canada’s economy / fight the spread of COVID-19 (coronavirus)] to what extent would you agree or disagree with supporting this policy [if the tax represented 1% / 2% / 5% / 10% of your current income]?” Response options of strongly support and somewhat support were combined into a binary measure of support (1 = support, 0 = oppose). We treated “not sure” responses as missing (N=53).

Prior to the measurement of the dependent variable, we measured generalized social trust by asking: “Generally speaking, would you say... (1) that most people can be trusted, (2) that when you deal with others, you can never be too careful, (3) I prefer not to answer.” We thus measured general trust for the social environment as opposed to a specific or behavioural component (Sønderskov 2009; 2011). While this measure has been debated in the literature (Ermisch *et al.* 2009; Glaeser *et al.* 2000), Uslaner (2012) argues in favor of the classic, dichotomous version of

² We performed several tests that confirm that the random assignment of the treatments resulted in groups that are comparable in terms of their socio-demographic characteristics. These tests are reported in Appendix 2.

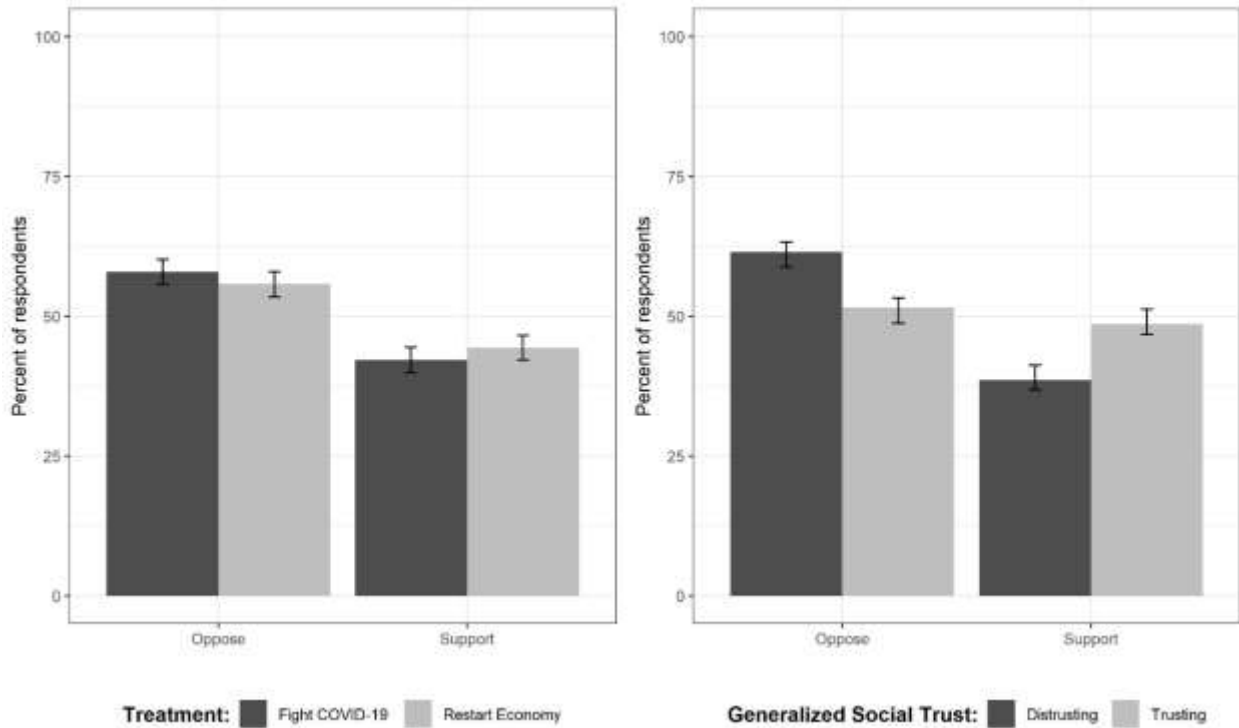
the “most people can be trusted” measure, which is used here. This question is a direct measure of generalized social trust, or the belief that “most people can be trusted.” It has a long pedigree and is widely used in survey research, including the General Social Survey, World Values Survey, and the Canadian Election Study (Fournier *et al.* 2015; Inglehart *et al.* 2014, Smith *et al.* 2019). Notably, it has been shown to capture two central elements of trust: a belief-based component and an element of trustworthiness (Ermisch *et al.* 2009; Sapienza *et al.* 2013). In addition, it has been found to correlate with “large-N” dilemmas and social sacrifice (Marcias 2015; Sønderskov 2011) and is widely used in the literature (Habibov, Cheung and Auchynnikava 2017; Lubell, Zahran and Vedlitz 2007; Reeskens 2013; Rönnerstrand 2013; Uslaner 2002).

Our analytical strategy is to estimate a series of logistic regression models using the experimental treatments as predictors and including generalized social trust as a covariate. Following Mutz (2011) we prefer to keep our models as simple as possible. However, we also include a few theoretically-relevant covariates in more fully specified models in order to reduce variance in the dependent variable and improve the estimates of our experimental treatment effects. These covariates include political trust, which we measure with an additive index based on the question “What is your level of trust in the following institutions” using two items; “The Government of Canada” and “The Prime Minister of Canada.” A reliability analysis confirms these items together form a reliable index (cronbach’s alpha = 0.907). We also include ideology as a control in some of the models, given its prominence in the politics of taxation. The ideology variable was measured using a standard left-right scale ranging from 0 (left) to 10 (right). Finally, gross family household income was also included in light of the literature. It is measured on a seven-point categorical scale ranging from a low of \$19,999 or less to a high of \$150,000 or more.

Results

We begin by analyzing descriptive statistics for our dependent variable across treatments (Figure 1). The left panel of Figure 1 shows the proportion of respondents who support and oppose a new tax across respondents receiving the “...help fight the spread of COVID-19” as opposed to the “...revive Canada’s economy” treatments. Although we observe slightly more support for and less opposition to paying a new tax to finance the country’s economic recovery relative to public health, these differences are not statistically different. This absence of a significant difference is illustrated in Figure 1 using 84 percent confidence intervals, allowing for a visual assessment of significance that would correspond to a difference-in-means test at the 95 percent level (Macgregor-Fors & Payton 2013; Payton, Greenstone and Schenker 2003).

Figure 1. Opposition and support to a new tax, by frame (economic or COVID-19) and generalized social trust



Note: Percentages by group and 84% confidence intervals are displayed.

The right panel of Figure 1 presents the distribution of support and opposition for trusting and distrusting respondents.³ Here, we combine respondents receiving the two different tax justification frames (i.e. “Fight COVID-19” and “Restart the economy”) and see that trusting respondents (49 percent) are generally more likely than distrusting ones (39 percent) to support a new COVID-19 tax, while distrusting respondents (61 percent) are more likely to oppose such a measure relative to trusting ones (51 percent). Thus, while we observe no difference in support

³ Mean levels of support and of generalized social trust found in the sample are included in Table A1 of the Appendix.

for a tax framed as responding to public health objectives as opposed to economic ones in a pandemic context, we do find that individuals with a high level of generalised social trust are generally more supportive of a COVID-19 related tax.

Turning to our analyses, we examine our experimental data by estimating a series of logistic regression models. Doing so allows us to account for the simultaneous effects of the two levels of treatment (i.e., the economic versus health frame and the different tax levels). All of the models estimated in Table 1 include income and ideology as covariates, which are of theoretical relevance for our dependent variable, and are included here in an effort to improve the precision of our causal estimates (Mutz 2011). We include models without covariates in the appendix (Table A1), which confirms our results in the absence of these controls.

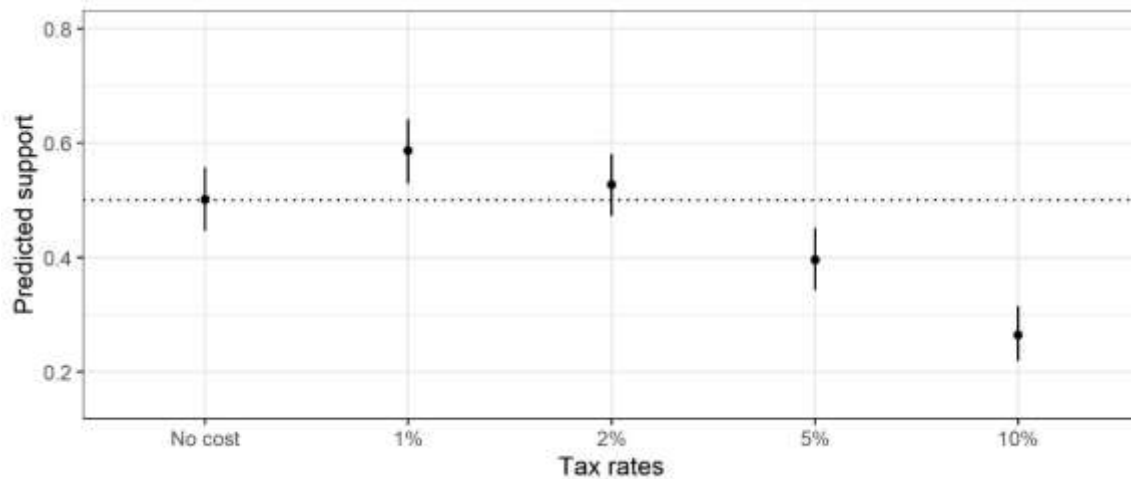
Table 1. Logistic regression results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Health frame	-0.028 (0.142)	-0.033 (0.146)	-0.003 (0.317)	-0.032 (0.146)	-0.067 (0.151)	-0.065 (0.151)	-0.079 (0.153)
Tax rate: 1%		0.343 (0.228)	0.313 (0.325)	0.377 (0.230)	0.383 (0.236)	0.405* (0.237)	-0.107 (0.324)
Tax rate: 2%		0.102 (0.222)	0.148 (0.311)	0.099 (0.223)	0.131 (0.229)	0.127 (0.229)	-0.015 (0.333)
Tax rate: 5%		-0.429* (0.227)	-0.560* (0.318)	-0.435* (0.228)	-0.384 (0.235)	-0.392* (0.236)	-0.788** (0.350)
Tax rate: 10%		-1.032*** (0.237)	-0.821** (0.327)	-1.008*** (0.238)	-0.984*** (0.244)	-0.968*** (0.244)	-1.504*** (0.354)
Generalized trust				0.350** (0.148)		0.258* (0.153)	-0.344 (0.327)
Political trust					0.341*** (0.051)	0.335*** (0.051)	0.337*** (0.052)
Health frame * Tax rate: 1%			0.057 (0.457)				
Health frame * Tax rate: 2%			-0.094 (0.444)				
Health frame * Tax rate: 5%			0.269 (0.455)				
Health frame * Tax rate: 10%			-0.439 (0.478)				

Generalized trust * Tax rate: 1%							1.105** (0.483)
Generalized trust * Tax rate: 2%							0.281 (0.460)
Generalized trust * Tax rate: 5%							0.750 (0.474)
Generalized trust * Tax rate: 10%							1.055** (0.492)
Income	0.036 (0.040)	0.037 (0.041)	0.038 (0.041)	0.025 (0.041)	0.037 (0.042)	0.028 (0.043)	0.026 (0.043)
Ideology	-0.337** (0.154)	-0.388** (0.158)	-0.397** (0.159)	-0.369** (0.159)	-0.142 (0.166)	-0.132 (0.166)	-0.130 (0.167)
Constant	-0.091 (0.224)	0.134 (0.272)	0.124 (0.310)	-0.008 (0.279)	-1.182*** (0.341)	-1.264*** (0.346)	-0.945** (0.381)
Observations	807	807	807	807	803	803	803
Log Likelihood	-552.994	-531.470	-530.322	-528.671	-504.481	-503.070	-498.997
Akaike Inf. Crit.	1,113.988	1,078.940	1,084.644	1,075.342	1,026.961	1,026.140	1,025.994
Note:							*p<0.1, ** p<0.05, *** p<0.01

Substantively, the models in Table 1 confirm the absence of an effect of the two frames (i.e. linking the new tax to public health vs. economic objectives) while clearly showing an effect related to costs. To visualize the role of the tax levels, we plot the predicted probability of supporting a new tax, conditional upon cost specification, in Figure 2. These estimates are derived from Model 2 in Table 1. Again, we plot 84 percent confidence intervals to allow for a quick visual assessment of significance that corresponds to a difference-in-means test at a 95 percent level of confidence (Macgregor-Fors & Payton 2013; Payton, Greenstone and Schenker 2003). The dotted line indicates 50 percent support for the tax, allowing readers to directly assess when a majority is supportive of the new tax.

Figure 2. Predicted level of support by specified policy cost



Notes: Estimations from Model 2 of Table 1. 84% confidence intervals are displayed.

As shown in Figure 2, we find that the probability of support increases by eight percentage points (to over 50 percent) when a modest cost of “1% of your current income” is specified relative to the no cost specification. This result is consistent with research on carbon taxes, which finds that survey respondents become less “tax averse” when a modest personal cost is explicitly attached to a new tax proposal, as opposed to one in which no cost is specified (Amdur, Rabe and Borick 2014; Fitzpatrick *et al.* 2018; Lachapelle, Borick and Rabe 2012). However, support declines sharply as higher policy costs are specified. Indeed, predicted support falls below a majority at the “2%,” “5%” and “10%” treatments, respectively. For the group exposed to a cost treatment of “10% of your current income,” the probability of support falls to just 27 percent, which represents a 23 percentage point drop in comparison to the no cost specification.

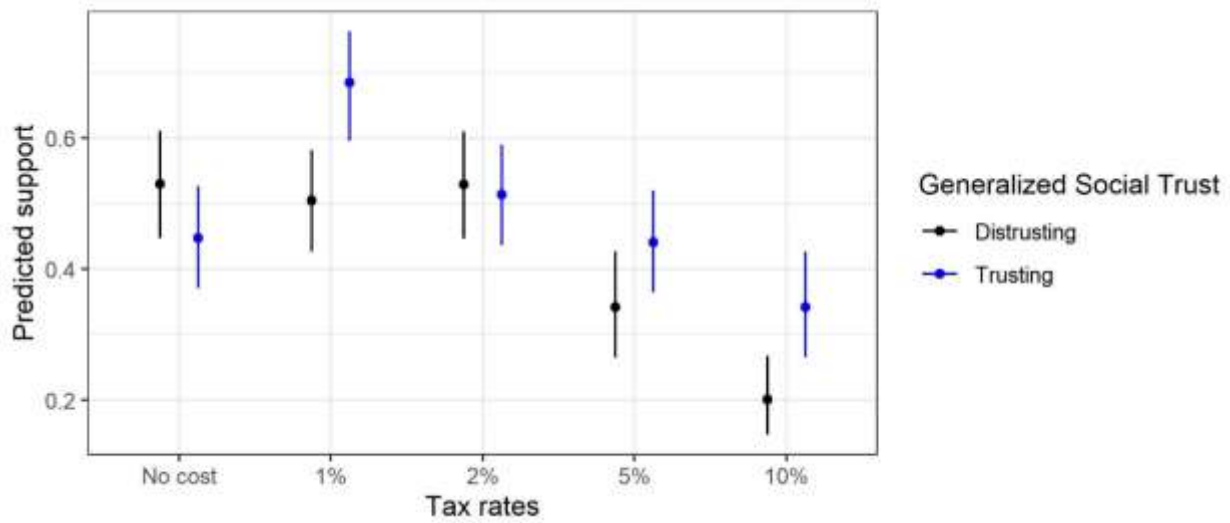
We also tested whether the effect of cost specification is conditioned by policy framing, by including in the estimation a cost × frame product term. This tests the idea that respondents may be more willing to accept a higher tax burden for public health as opposed to economic objectives

(or vice versa). The results turned up null (Model 3, Table 1). Broadly, these results suggest that the public has a limited appetite for new taxes in the context of the current public health pandemic, and are no more willing to support paying new taxes to limit the spread of COVID-19 than they are to revive the economy. That said, the findings suggest that a new tax might be politically more viable at explicitly modest levels (e.g. at 1% of income).

We now consider the role of trust in more detail. To do so, we evaluate the main effect of generalized social trust and political trust in Models 4 and 5 before including them both in Model 6 (Table 1). Both forms of trust have positively signed and statistically significant coefficients, indicating that both trust in others as well as trust in government are important predictors of support for a COVID-19 related tax. That both forms of trust remain significant when they are included in the same model (see Model 6 of Table 1) confirms the extant literature, which suggests that generalized social trust and political trust are qualitatively distinct phenomena (Uslaner 2002; 2003).

Finally, Model 7 examines the extent to which generalized social trust conditions the relationship between specified policy costs and policy support. Since generalized social trust increases self-sacrifice and cooperation (Sønderskov 2009; 2011), it is plausible to think that support among respondents who trust their social environment will be less affected by increasing tax levels. To examine this possibility, we add an interaction term between the experimentally manipulated tax burden and generalized social trust to the logistic regression models. Figure 3 presents the results of this interaction visually, while the full results can be assessed in Model 7 of Table 1.

Figure 3. Predicted level of support by cost and generalized social trust



Notes: Estimations form Model 5 of Table A3. 84% confidence intervals are displayed.

Figure 3 plots the predicted levels of tax policy support at different levels of experimentally manipulated tax rates conditional upon generalized social trust. We observe a different slope, with statistically different levels of policy support between trusting and distrusting respondents at modest and high tax levels. In particular, we find that generalized social trust moderates the effect of cost specification (see Figure 2 for the specific effect of cost) such that the specification of a modest tax burden increases support for a new COVID-19 related tax among trusting but not among distrusting individuals, relative to the control condition where no cost is specified. This moderation is substantial, with trusting respondents being more willing to support a 1 percent tax burden than individuals who are distrusting by 18 percentage points. While trusting individuals drop out of majority support at higher levels of specified policy cost, trusting individuals are nevertheless more likely than distrusting respondents to support tax levels representing “5%” and “10%” of total income by 10 and 14 percentage points, respectively. In

fact, the largest proportional difference between trusting and distrusting respondents is found at the “10%” cost specification, where the predicted level of support increases 70 percent from a low of 20 percent among distrusting individuals to 34 percent among those who are trusting. However, we find no statistically significant differences in predicted levels of support between trusting and distrusting individuals at tax burdens of 2% and 5%. In sum, we find significantly more support for a new COVID-19 tax among trusting individuals, but also that people who generally trust their social environment are significantly less opposed to higher rates of taxation associated with a new tax in the context of the COVID-19 pandemic for tax burdens at the low (1%) and higher (10%) of the range tested here. In the Appendix, we follow the same logic and interact political trust with tax levels. The results of these tests are less conclusive, as shown in both Table A4 (insignificant coefficients on the interaction terms) as well as in the plot of marginal effects (Figure A4 in the Appendix). In exploratory fashion, we also ran a model to assess whether the effect of cost specification (tax burden) is conditioned by ideology. This too yielded insignificant results (not shown here). All of this suggests that in the pandemic context, generalized social trust is of particular importance for explaining citizens’ preferences for paying a COVID-19 related tax.

Conclusion

How supportive are members of the public to new taxes in a pandemic context? Is the public more supportive when taxes are framed as addressing public health (i.e., limit the spread of infection) as opposed to public finance (i.e., revive the economy) objectives? And, to what extent does generalized social trust affect the public’s willingness to pay higher taxes to finance public

goods in a pandemic context? The unprecedented economic and social measures taken by governments in response to the COVID-19 health pandemic provide an opportunity to answer these questions via a study of citizens' willingness to support large-N collective action in a pandemic context. Despite broad public support in Canada for drastic government measures to limit the spread of infection and strengthen the economy (Bricker 2020; Dassonneville *et al.* 2020), we find limited public support for a new tax to pay for the costs of these ostensibly popular measures. Moreover, we find that citizens are no more willing to support a tax to finance massive spending in health than they are to support a tax designed to revive the economy. Consistent with self-interest accounts of opinion formation, we find that public support falls dramatically when a higher individual tax burden is specified. Overall, our analysis suggests that (even) in a pandemic context, citizens' willingness to pay a new tax remains limited.

We do show that individuals who trust fellow citizens are more likely to support new COVID-19-related taxes. This is especially true when the individual tax burden is explicitly identified as being modest. However, we also find that opposition to a more burdensome tax is significantly lower among trusting individuals, relative to distrusting ones. While political trust is also independently related to citizen preferences for a new COVID-19-related tax, we do not find that political trust conditions the effect of experimentally related tax burdens in the same way.

These findings are important for a number of reasons. First, the public health pandemic caused by the proliferation of the novel coronavirus provides an opportunity to examine the public's willingness to support new taxes in the midst of a crisis where governments and their actions receive broad support, and where the need for broad-based cooperation among citizens is

particularly salient. Our results show that the public's aversion to taxes extends to these crisis situations. Policymakers ought to be aware of this important constraint. Second, the next few years will be difficult financially for governments and taxpayers. Governments will continue to borrow and spend on programs aimed at limiting the health and economic consequences of the pandemic, and will thus need to find ways to reduce the associated increase in public debt. In this context, our findings suggest that policymakers might be more successful if they can be transparent and limit the private costs involved, for policies designed to benefit society writ large. Finally, we show the importance of both generalized social and political trust in the willingness to support a new tax. Generalized social trust, an attitude that is known to bolster cooperation and self-sacrifice, is associated with increased support for pandemic-related new taxes. The same is true for political trust, although we note that the results for generalized social trust are particularly relevant for looking at the effect of trust conditional upon specified tax burdens at modest (1%) and more substantive (10%) levels.

This suggests that support for policies that impose costs on citizens in the context of the current COVID-19 pandemic would benefit from a context in which the crisis or its management favours the emergence of generalized social trust within the population. As a result, policymakers and communications should be careful to not assign too much blame on the population as the crisis evolves, as this might diminish social trust. In turn, individuals may be less willing to contribute to new tax and spending measures if they perceive their fellow citizens are not doing their part. Governments should thus seek to maintain and enhance the public's trust in its management of this crisis, by cooperating themselves, acknowledging the efforts made by citizens, and by encouraging social solidarity. The saliency of cooperation in government actions, policies, and

media coverage might also help foster enhanced trust among citizens, creating conditions that are conducive to further collective action.

For governments around the world, the task of balancing the budget in the aftermath of the COVID-19 public health pandemic will be a legacy for years to come (Economist 2020). While our study focuses on the Canadian case, we think the results are likely to generalize to other established democracies. Indeed, Canada fell squarely in the middle of the pack in terms of infection and death rates per million inhabitants, due in part to aggressive government measures intended to limit the spread of infection taken relatively early. Despite its relative success, and notwithstanding public support for these measures, the public appetite for paying for the costs associated with COVID-19 policy measures (many of which were adopted in other countries) is quite limited. This is paradoxical, and invites further research into the crucial topic of popular support for collective action associated with COVID-19 policy measures.

Appendix

Appendix 1. Descriptive statistics

Table A1. Descriptive statistics

	Mean	Std. Dev.	Minimum	Maximum	Number of obs.
Support	0.43	0.50	0	1	953
Generalized trust	0.47	0.50	0	1	953
Political Trust	3.22	1.65	0	6	996
Ideology	5.12	2.26	0	10	909
Income	4.14	1.78	1	7	915

Appendix 2. Balance tests

Table A2.1. Distribution of respondents across our 2 x 5 factorial design

Treatment	No cost	1%	2%	5%	10%
Restart Economy	95 (101)	96 (101)	93 (100)	96 (100)	96 (101)
Fight COVID-19	97 (101)	95 (100)	97 (100)	91 (101)	97 (101)

Notes: Number of observations used in the analysis (net of missing) reported here. Total distribution of respondents (including those declared as missing for the purpose of the analysis) in parentheses.

We test for balance across experimental groups using logistic and OLS regression models. The results of these tests are listed in Table A2.2. We firstly regress our “frame” treatment (i.e. random assignment to either the “Restart economy” or the “Fight COVID-19” frames) on trust (the only covariate used in our models) as well as a number of socio-demographic characteristics, including gender, language, and age. Results provide no evidence of imbalance. Next, we regress our “cost” treatment indicator (i.e. random assignment to one of the cost frames ranging from none to “10%”) on the same predictors as in the previous model. Again, all coefficients on these predictors are insignificant, indicating no evidence of imbalance.

Table A2.2. Predicting assignment to treatment

	Frame treatment		Cost treatment	
	<i>Logistic</i>		<i>OLS</i>	
	(1)	(2)	(3)	(4)
Trust	-0.048 (0.126)	-0.046 (0.128)	-0.072 (0.090)	-0.074 (0.091)
Female		0.209 (0.127)		0.028 (0.090)
Language		-0.039 (0.049)		-0.013 (0.034)
Age		0.012 (0.036)		0.006 (0.026)
Constant	0.022 (0.086)	-0.038 (0.218)	2.033*** (0.061)	2.025*** (0.154)
Observations	1,006	1,006	1,006	1,006
R ²			0.001	0.001
Adjusted R ²			-0.0004	-0.003
Log Likelihood	-697.234	-695.501		
Akaike Inf. Crit.	1,398.468	1,401.001		

Note: *p<0.1; **p<0.05; ***p<0.01

Appendix 3. Full results

Table A3. Regression results, constrained models without covariates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Health frame	-0.089 (0.131)	-0.096 (0.134)	0.043 (0.289)	-0.089 (0.135)	-0.115 (0.140)	-0.107 (0.140)	-0.111 (0.141)
Tax rate: 1%		0.304 (0.205)	0.314 (0.290)	0.339 (0.207)	0.366* (0.214)	0.389* (0.215)	-0.020 (0.291)
Tax rate: 2%		0.063 (0.205)	0.256 (0.292)	0.059 (0.206)	0.088 (0.213)	0.085 (0.214)	-0.115 (0.304)
Tax rate: 5%		-0.387* (0.209)	-0.405 (0.294)	-0.398* (0.210)	-0.382* (0.217)	-0.393* (0.218)	-0.716** (0.319)
Tax rate: 10%		-1.023*** (0.221)	-0.833*** (0.306)	-0.991*** (0.222)	-0.985*** (0.229)	-0.964*** (0.229)	-1.365*** (0.321)
Health frame * Tax rate: 1%			-0.020 (0.410)				
Health frame * Tax rate: 2%			-0.380 (0.410)				
Health frame * Tax rate: 5%			0.044 (0.417)				
Health frame * Tax rate: 10%			-0.391 (0.442)				
Generalized trust				0.401*** (0.135)		0.286** (0.141)	-0.239 (0.301)
Political trust					0.369*** (0.046)	0.361*** (0.047)	0.361*** (0.047)
Generalized trust * Tax rate 1%							0.880** (0.435)
Generalized trust * Tax rate 2%							0.400 (0.428)
Generalized trust * Tax rate 5%							0.632 (0.438)
Generalized trust * Tax rate 10%							0.819* (0.459)
Constant	-0.228** (0.092)	-0.035 (0.160)	-0.105 (0.205)	-0.240 (0.175)	-1.271*** (0.229)	-1.390*** (0.238)	-1.126*** (0.272)
Observations	953	953	953	953	947	947	947
Log Likelihood	-651.579	-628.467	-627.454	-624.059	-589.239	-587.180	-584.504
Akaike Inf. Crit.	1,307.158	1,268.935	1,274.909	1,262.118	1,192.478	1,190.360	1,193.009

Note:

*p<0.1, **p<0.05, ***p<0.01

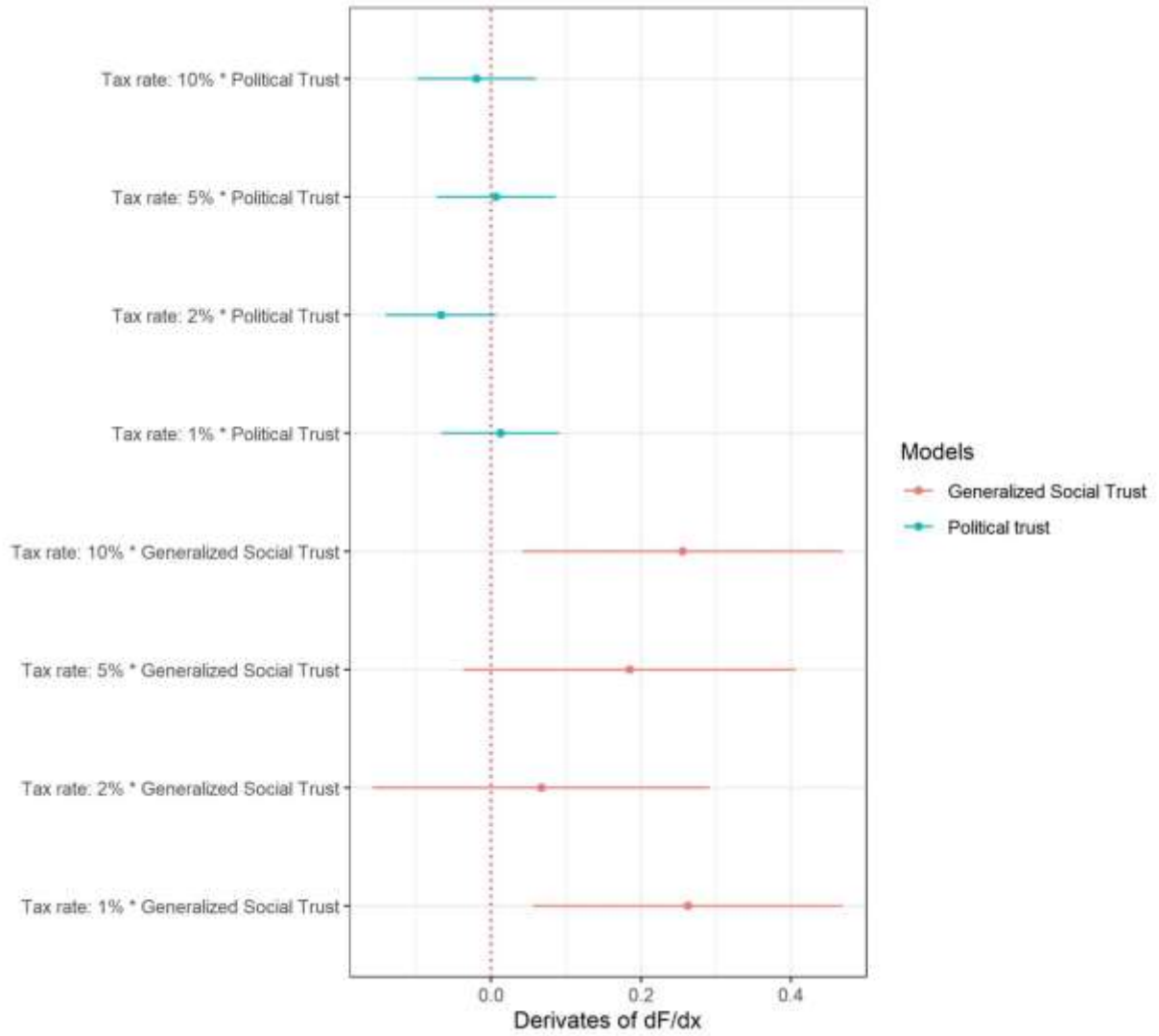
Appendix 4. Political trust as a moderator

Table A4. Regression results, political trust as a moderator

	(1)
Health frame	-0.073 (0.152)
Tax rate: 1%	0.263 (0.594)
Tax rate: 2%	1.045* (0.564)
Tax rate: 5%	-0.472 (0.619)
Tax rate: 10%	-0.687 (0.622)
Generalized trust	0.282* (0.154)
Political trust	0.410*** (0.114)
Tax rate: 1% * Political trust	0.049 (0.163)
Tax rate: 2% * Political trust	-0.272* (0.152)
Tax rate: 5% * Political trust	0.026 (0.164)
Tax rate: 10%* Political trust	-0.080 (0.164)
Income	0.027 (0.043)
Ideology	0.022 (0.034)
Constant	-1.728*** (0.518)
Observations	803
Log Likelihood	-500.237
Akaike Inf. Crit.	1,028.474

Note: *p<0.1, **p<0.05, ***p<0.01

Figure A4. Comparing marginal effect of political and generalized social trust conditional on specified policy cost (interaction)



Notes: 95% confidence intervals are displayed.

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