IDB WORKING PAPER SERIES Nº IDB-WP-1123

Voter Preferences, Electoral Promises, and the Composition of Public Spending

Philip Keefer
Carlos Scartascini
Razvan Vlaicu

Inter-American Development Bank
Department of Research and Chief Economist

June 2020

Voter Preferences, Electoral Promises, and the Composition of Public Spending

Philip Keefer
Carlos Scartascini
Razvan Vlaicu

Inter-American Development Bank

June 2020

Cataloging-in-Publication data provided by the
Inter-American Development Bank
Felipe Herrera Library

Keefer, Philip.
Voter preferences, electoral promises, and the composition of public spending / Philip Keefer, Carlos Scartascini, Razvan Vlaicu.
p. cm. — (IDB Working Paper Series ; 1123)
Includes bibliographic references.
1. Government spending policy-Latin America-Econometric models. 2. Voting-Latin America-Econometric models. 3. Public goods-Latin America-Econometric models. 4. Public investments-Latin America-Econometric models. I. Scartascini, Carlos G., 1971- II. Vlaicu, Razvan. III. Inter-American Development Bank. Department of Research and Chief Economist. IV. Title. V. Series.
IDB-WP-1123

http://www.iadb.org

Abstract[1]

This paper proposes and empirically tests a new demand-side explanation for distortions in public spending composition. Voters prefer spending with certain and immediate benefits when they have low trust in electoral promises and high discount rates. The paper incorporates these characteristics of voter choices into a probabilistic voting model with public spending tradeoffs. In equilibrium, candidates promising larger allocations to transfers and short-term public goods are more likely to win elections in settings with low trust and high impatience. An original survey of individual-level preferences for public spending in seven Latin American capital cities provides observational and experimental evidence consistent with the model-derived hypotheses. Respondents reporting low trust in politician promises are more likely to prefer transfers to public goods; respondents with high discount rates prefer short-term to long-term spending. These patterns also appear in country-level data on spending outcomes from the last two decades.

JEL classifications: D72, H20, H50, O10
Keywords: Spending composition, Voter preferences, Trust, Discounting, Transfers, Public goods, Public investment

[1] Contact Information: Keefer: Institutions for Development Department, Inter-American Development Bank, 1300 New York Ave NW, Washington, DC 20577, USA. Email: pkeefer@iadb.org. Scartascini: Research Department, Inter-American Development Bank, 1300 New York Ave NW, Washington, DC 20577, USA. Email: carlossc@iadb.org. Vlaicu: Research Department, Inter-American Development Bank, 1300 New York Ave NW, Washington, DC 20577, USA. Email: vlaicu@iadb.org. We thank João Ayres, Alejandro Izquierdo, Jorge Puig, Guillermo Vuletin, Diego Vera, and Elizabeth Zechmeister for comments, Georgina Pizzolitto for overseeing data collection, Kurt Birson, Adelaida Correa, and Sergio Perilla for research assistance. The findings and interpretations in this paper are those of the authors and do not necessarily reflect the views of the Inter-American Development Bank or the governments it represents.

1 Introduction

Government spending can support economic development by funding growth-promoting public goods such as high quality public education, or making investments in public safety infrastructure. In many developing countries, however, governments make systematically low budgetary allocations to these types of spending in favor of short-term spending priorities such as redistributive transfers. This is particularly so for investment or capital spending, which yield benefits years later. A recent study estimates that the bias against capital spending in developing economies was 8.5 percentage points, compared to 3.7 percentage points in advanced economies.[2] We present a new argument that traces variation in spending composition to voter mistrust in politicians and voter impatience. Lower-trust voters prefer a higher ratio of expenditures with more certain benefits, such as transfers, to expenditures with less certain benefits, such as spending on education or police. Higher-discounting voters prefer expenditure policies with more immediate returns to those with distant payoffs, such as investment. In the aggregate, candidates promising larger allocations to long-term public goods are less likely to win elections in settings with low trust and high impatience. Both individual- and country-level evidence from Latin America support these predictions.

Several other explanations could account for inefficient or regressive public spending policies in developing countries. An important body of literature has emphasized representation failures in newly democratic institutions, such as elite capture of government policies to avoid empowering the citizenry to challenge the dominance of the ruling class (Engerman and Sokoloff, 2000; Acemoglu and Robinson, 2006). Alternatively, underprovision reflects lack of state capacity in designing and implementing complex policies (Besley and Persson, 2009, 2011). Another set of arguments points to distortions of the electoral mechanism, either through political budget cycles, which appear more pronounced in developing countries (Shi and Svensson, 2006; Drazen and Eslava, 2010), or through effective disenfranchisement of low-income voters (Fujiwara, 2015), or electoral clientelism that allows politicians to divert public resources toward private rents (Keefer and Vlaicu, 2008; Robinson and Verdier, 2013).

This paper proposes an alternative mechanism to these well-known hypotheses, one centered on voter choices, i.e., the demand side of spending policies. We argue that developing

[2] See Figure 1.4 in Izquierdo, Pessino, and Vuletin (2018). The bias against capital spending is defined as the difference in the long-term (1980-2016) trends of capital and current spending as shares of total (primary) spending. The bias occurred despite substantial hikes in total spending as percent of GDP, which left enough room for increasing social expenditures without substantially cutting back the share of capital spending.

countries with democratic elections may experience fiscal misallocations because voters are uncertain about how politicians' electoral promises will improve their welfare. That is, voters have low trust that political candidates' public good spending programs will deliver the promised voter welfare. Given budgetary tradeoffs, this should decrease voter demand for public good spending relative to spending with more certain benefits, such as transfer payments. In addition, voters discount political candidates' current spending proposals whose benefits occur in the future. This would decrease voter demand for long-term public good spending. In both cases, voters prefer political candidates that promise to allocate spending toward programs with more certain and more immediate benefits, such as monetary transfers or public sector hiring.

To understand the policy implications of low trust and high discounting, we develop a probabilistic voting model with three types of spending: spending with immediate and certain benefits, such as direct monetary transfers to voters; short-term public goods (or public consumption), whose benefits are immediate but uncertain, such as general increases in current police or education expenditures; and long-term public goods (or public investment), whose benefits are both uncertain and occur in the future, as with the training of service providers and infrastructure investments. Given a fixed budget, low-trust voters prefer candidates who allocate more budgetary resources to transfers and high-discounting voters prefer candidates that spend less on investment projects. Aggregating across voters and examining country-level budget allocations, lower trust should be associated with a higher ratio of transfers to public goods and higher discounting with a higher ratio of short-term to long-term spending.

We present evidence supporting both the individual-level behavior and the aggregate spending outcomes predicted by the model. To document individual behavior we designed an original survey of voter preferences that we fielded in seven Latin American capitals through the Latin American Public Opinion Project (LAPOP) at Vanderbilt University, hereafter the IDB-LAPOP Survey. It elicits respondents' trust in politician promises and measures discount rates using the unfolding-brackets methodology in Falk et al. (2018). Spending preferences are based on a revealed preference design. Respondents are asked which of two policy alternatives they prefer in order to improve education or reduce crime. For example, respondents choose between a tax cut allowing more personal spending on security, and a tax increase to fund more police spending. We vary the policy pairings to capture the spending tradeoffs characterized in the model. For example, choosing between spending on hiring additional public employees (more certain and current benefits) and training existing employees (more uncertain and future benefits). Evidence on aggregate spending outcomes

comes from a panel of 18 Latin American countries over the last two decades. Here we look at the empirical relationship between spending ratios and aggregate measures of trust in political parties and of time discounting, using country and year fixed effects.

The individual-level data on spending preferences show that lower-trust respondents are more supportive of transfers at the expense of public goods, and higher-discount respondents are more supportive of short-term spending (transfers and public consumption) at the expense of long-term spending (public investment). These findings appear in both policy domains we studied, education and security. The country-level data on spending outcomes confirms the individual-level results. Country-years with lower aggregate trust in political parties and higher real interest rates tend to be those with higher ratios of transfers to public goods and current to capital spending.

Two survey experiments allow further tests of the model using randomized variation in how much electoral promises demand trust or patience from voters. Randomly selected respondents receive an informational treatment indicating that a policy that requires more voter trust delivers larger benefits than an alternative that demands less trust. Low-trust respondents are less sensitive to the information about the relative benefits of the two policies and are less likely to switch away from the policy with smaller benefits. The other experiment asks respondents to choose between two types of expenditures on government workers, hiring additional workers (immediate benefits) or training existing workers (delayed benefits). Respondents are randomly assigned to different time horizons (two vs. four years) for getting the delayed benefits of training. Extreme (very high or very low) discount rate respondents are less responsive to differences in time horizon and are less likely to switch from hiring to training when they learn that training benefits arrive sooner.[3]

The literature on the political economy determinants of public spending composition is well-established, but has focused largely on mature democracies and on the role of political institutions, such as forms of government, electoral rules, or party systems; see, e.g., Lizzeri and Persico (2001), Scartascini and Crain (2002), and Persson and Tabellini (2003). These studies have provided valuable insights into the supply side of spending policies, while keeping voter preferences fixed. Instead, we focus on variation on the demand side of spending policies and set aside issues related to electoral incentives under different institutional configurations.[4]

[3] Very high discount respondents almost always prefer the immediate benefits policy, thus the time horizon for the delayed benefits policy matters little to them. Very low discount respondents may prefer the delayed benefits policy, but care little whether it has a long or short time horizon.

[4] The macro dynamics of spending allocations have been studied by Ismihan and Ozkan (2011), who develop a theoretical model where greater political instability is associated with increased allocation of public

More recent studies of developing countries with weak institutions have highlighted the distortions that voters themselves can introduce into the policy process. Bursztyn (2016) provides experimental evidence from Brazil that poor voters prefer government programs that increase their incomes in the short run, such as cash transfers, over spending on public education that benefits them in the long run. We find similar income effects in our data, but show that even after controlling for income, respondent trust and discounting play an independent role in the formation of spending preferences. Keefer and Vlaicu (2017) study a model of vote buying with reneging on campaign promises where voters prefer candidates associated with high vote buying and low public good provision. We model voter trust in a similar way, but use it to explore a different policy distortion: preferences for post-electoral transfers over public goods, rather than pre-electoral transfers (vote buying) over public goods.[5]

The literature on trust has focused primarily on market interactions (Guiso et al., 2004; Dearon and Grier, 2011), political outcomes (Nunn, Qian, and Wen, 2018), or overall economic performance (Zak and Knack, 2001; Francois and Zabojnik, 2005) and much less on government policies. Two notable recent exceptions are Algan, Cahuc, and Sangnier (2016) and Camussi, Mancini, and Tomassino (2018). Both are concerned with how generalized trust and trust in government are related to government spending on social programs (education and health) or welfare programs in developed countries. They find that higher trust is generally associated with more social and welfare spending as a fraction of the budget, although the effect can be nonlinear. While we also provide aggregate-level evidence on spending outcomes, our individual-level evidence is based on preference elicitation in developing countries through hypothetical policy comparisons under budgetary tradeoffs; this allows us to manipulate the spending characteristics we are interested in, such as the certainty and timing of benefits.

In using randomized information shocks to study voter preferences our paper builds on recent work that has employed randomized survey experiments (Banerjee et al., 2011, in electoral choices, and Jensen, 2010, in education choices). Studying preferences for redistribution, Kuziemko et al. (2015) argue that low trust in government accounts for the

spending to government consumption instead of investment, and Ardanaz and Izquierdo (2017), who provide evidence from developing countries that governments adjust to economic cycles by increasing transfers in upswings and reducing public investment in downturns.

[5]Keefer (2007) provides country-level evidence that young democracies where political candidates cannot make credible promises to voters overprovide targeted transfers and underprovide public goods. Khemani (2015) provides evidence from the Philippines that politicians purchasing political support with targeted transfers are likely to trade it off against the provision of broader public services.

small impact of informational treatments about the extent of inequality in the United States on support for redistribution. We show that the effects of low trust extend to tradeoffs across expenditure types and provide experimental evidence that supports this conclusion. Burzstyn (2016) argues that lower-income voters in Brazil prefer candidates that prioritize cash transfers over education spending because they have a higher marginal utility of current consumption. Our mechanism works through voter mistrust and discounting of electoral promises.

The remainder of the paper is organized as follows. The next section describes the model and discusses its theoretical predictions. Section 3 introduces our original survey data on individual spending preferences as well as the panel data on spending outcomes, and outlines our empirical strategies. Section 4 presents the empirical results. The last section concludes and discusses directions for future research.

2 Model

Most theoretical work on the political economy determinants of public spending allocations is motivated by phenomena relevant to established democratic systems. To capture the imperfections in the policy environment of developing countries, standard models from political economics have to be adjusted. The model in this section builds on the standard probabilistic voting model of electoral competition by adjusting voter preferences to reflect voter uncertainty about how spending proposals translate into promised welfare gains.

2.1 Voter Preferences and Electoral Promises

Two parties $j = A, B$ compete to win an election by proposing allocations of an exogenous amount of tax revenue to different types of government spending. We characterize these as "transfers," spending with certain and immediate benefits; and two types of public goods: short-term public good spending ("public consumption") with uncertain but immediate benefits, and long-term public good spending ("public investment") with uncertain and future benefits. The amounts are denoted by (f_j, h_j, g_j), where f_j is party j's per-capita transfer made to all voters, h_j is public consumption spending, and g_j is public investment spending.

These designations are shorthand for broader spending categories that differ along two key dimensions: certainty of converting spending into promised voter welfare, and the time horizon of spending. Monetary transfers are a notable case of expenditure with certain

and immediate benefits, but voters are also more certain about the welfare consequences of increased spending on current programs, such as hiring additional teachers. In contrast, spending on new teaching aids, such as electronic tablets, would have more uncertain welfare consequences. Spending on teacher training would entail both uncertain benefits and benefits that occur in the future.

The electorate consists of a continuum of voters uniformly distributed in the unit interval $[0,1]$. The pre-tax income of voter i is denoted y_i, and $\bar{y} \equiv \int_0^1 y_i di$ denotes average pre-tax income. The government levies a uniform tax rate $\tau \in (0,1)$ on individual income. Let $z_{ij} \equiv (1-\tau)\, y_i + f_j$ denote voter i's disposable income under party j's platform. The exogenous amount of government tax revenue is thus $\tau \bar{y}$.

Voters have both partisan and policy preferences. Each individual voter, indexed by i, has a uniformly and independently-distributed idiosyncratic partisan bias, denoted $\sigma_i \overset{iid}{\sim} U\left[-\frac{1}{2}, \frac{1}{2}\right]$. Positive values of σ_i indicate an individual preference for party B; negative values indicate an individual preference for party A.[6] Voters' partisan preference may change due to a uniformly-distributed common electoral shock $\epsilon \sim U\left[-\frac{1}{2\psi}, \frac{1}{2\psi}\right]$ that is publicly observed by voters after parties announce their policy platforms and independent of the individual biases σ_i. Without loss of generality, positive values of the common election shock favor party B.[7]

The timing of the game is as follows. (i) Parties $j = A, B$ simultaneously announce electoral platforms (f_j, h_j, g_j), under uncertainty about voters' partisan biases σ_i and the election shock ϵ. (ii) The election takes place: voters observe their own partisan bias σ_i, the election shock ϵ and parties' policy platforms, and pick the party they prefer based on their policy and partisan preferences. (iii) The party with the most votes wins the election and implements its policies.

The policy-based component of voter utility has the following form:

$$W_{ij} = \left(z_{ij} - \frac{1}{2} z_{ij}^2\right) + \left(h_j - \frac{1-\gamma_i+\phi\gamma_i}{2} h_j^2\right) + \frac{1}{(1+\delta_i)^\theta}\left(g_j - \frac{1-\gamma_i+\phi\gamma_i}{2} g_j^2\right) \qquad (1)$$

for voter i given the policies presented by party j. The first term is the voter's utility from disposable income. The marginal utility of disposable income $1 - z_{ij}$ is decreasing in disposable

[6] Individual partisan bias may be rooted in pre-determined party attributes such as ethnicity, religion, or race. Alternatively, we could assume voter groups identified by, e.g., age, education, location, that differ in their partisan biases.

[7] A standard interpretation of the common electoral shock is last-minute information about the competing parties that is unrelated to their policy platforms.

income at a constant rate normalized to one.

For public good spending, h_j and g_j, voters have to trust electoral promises that the spending will produce welfare gains. The second term is the voter's utility from government spending on short-term public goods. The parameter $\gamma_i \in (0,1)$ measures voter i's beliefs that the government will choose a high-return project over a low-return project. A high-return project yields a voter benefit of $h_j - \phi h_j^2/2$, with project inefficiency $\phi \in (0,1)$; a low-return project yields a lower voter benefit of $h_j - h_j^2/2$, with project inefficiency $\phi = 1$. The parameter γ_i thus captures voter i's trust in parties' ability to turn their campaign promises into good policy outcomes.[8] It may reflect the quality of government expertise in selecting high-return projects, or party cohesion helping turn election platforms into actual legislation, or the ability of the government to resist capture by interest groups.[9]

The last term is the voter's utility from investment spending g_j in long-term public goods. This type of spending also suffers from decreasing marginal utility and uncertainty γ_i of realized benefits, and in addition its eventual delivery occurs in the future. This is captured through the individual discount rate $\delta_i > 0$ and the time horizon θ. Voters discount more heavily long-term policies that take longer to materialize, and they do so based on their individual tradeoff between current and future benefits, captured in the discount rate δ_i.

Because the tax rate τ and pre-tax income y_i are exogenous in this model, an increase in the transfer f_j leads to an increase in disposable income z_{ij}. Equivalently, this amounts to a reduction in the effective tax rate, which can be calculated as $\frac{y_i - z_{ij}}{y_i} = \tau - \frac{f_j}{y_i}$. In the survey described below we asked respondents several questions that offer a choice between (a) increased taxes to fund a new government service, e.g., education, security, and (b) reduced taxes that allow the voter to self-provide that service. In the model, this choice is reflected in a high effective tax vs. a low effective tax, or equivalently lower transfers vs. higher transfers.[10]

Voters' electoral choices are based on their policy and partisan preferences as follows. Voter i votes for party A when $W_{iA} - W_{iB} > \sigma_i + \epsilon$, namely when the additional policy utility provided to this voter by party A exceeds the voter's partisan bias in favor of party

[8] Expected voter benefits from spending h_j are therefore $\gamma_i \left(h_j - \phi h_j^2/2\right) + (1-\gamma_i)\left(h_j - h_j^2/2\right)$, which simplifies to $h_j - (1 - \gamma_i + \phi\gamma_i)\, h_j^2/2$. Robinson and Torvik (2005: 198) note that "developing countries seem to be plagued not simply by underinvestment, but by investment in the wrong things." We capture this idea by distinguishing between high-return and low-return projects.

[9] See Keefer and Vlaicu (2017) for a model that endogenizes voter trust based on party characteristics such as leadership preferences and the strength of its punishments for party members' noncompliance.

[10] Framing the question in terms of the fiscal consequences of a policy is also important to remind respondents that any policy change involves budgetary tradeoffs.

B. Party A's vote share is therefore the fraction of voters that will ultimately support it: $\zeta_A(\epsilon) \equiv \int_0^1 \mathbb{P}\{W_{iA} - W_{iB} > \sigma_i + \epsilon\} di$. The vote share is stochastic as it depends on the electoral shock ϵ, which neither party observes when announcing their policy platforms. Party B's vote share is $\zeta_B(\epsilon) = 1 - \zeta_A(\epsilon)$.[11]

Parties maximize the probability of winning the election, i.e., the probability of winning more than half the votes. Given the assumed payoffs and voter behavior, one can derive parties' winning probabilities as linear functions of the average welfare differential from the two parties' policy platforms:

$$\mathbb{P}\left\{\zeta_j(\epsilon) > \frac{1}{2}\right\} = \frac{1}{2} + \psi(W_j - W_{-j}) \tag{2}$$

where $W_j \equiv \int_0^1 W_{ij} di$ is the average voter utility from party j's policies. Note that a party's winning chances depend on the aggregate voter welfare it provides compared to its opponent.[12] The parties' policy promises have to satisfy the government budget constraint:

$$f_j + h_j + g_j \leq \tau \bar{y} \tag{3}$$

when party $j = A, B$ is in office. We assume government tax revenue to be exogenous in order to focus on explaining variation in the spending side of the government budget.

An equilibrium is a pair of party strategies $(f_j, h_j, g_j)_{j=A,B}$ that are mutual best responses. We focus on interior equilibria in pure strategies. A pure-strategy equilibrium exists because the objective functions are jointly continuous in both parties' strategies, and concave in a party's own strategy; see equation (2). Equilibrium uniqueness follows from the strict concavity of parties' objectives in own strategies. In what follows we characterize the equilibrium of this symmetric model and derive its comparative statics implications.

2.2 Theoretical Predictions

This section analyzes the factors affecting government spending composition. The goal is to derive empirically testable predictions about how public spending decisions are affected by

[11] As is standard in probabilistic voting models, we assume voters to be expressive, rather than strategic, and abstract from issues of voter turnout.

[12] The parameter ψ captures the extent to which the election is decided by policy considerations vs. partisan considerations. When the electoral shock ϵ has less variance, i.e., higher ψ, the winning probabilities in equation (2) are more sensitive to differences in the parties' policy platforms. We implicitly assume that the electoral shock density ψ is appropriately bounded above to ensure that winning probabilities remain in the unit interval.

the voter preference parameters namely voter trust γ_i and voter discounting δ_i. Some of these predictions are intuitive, such as lower-trust voters prefer more spending on transfers, and others less so, namely that lower-trust voters prefer more investment spending relative to consumption spending. Proofs of all formal propositions are in Section A1 of Appendix A.

We first characterize an individual voter's preferences for different types of spending. Afterward, we characterize the parties' choices in the electoral equilibrium. An individual voter i would choose the spending allocation (f_i, h_i, g_i), indexed for voter i, that maximizes individual voter utility W_{ii} in equation (1), with $j = i$, subject to the aggregate budget constraint $f_i + h_i + g_i \leq \tau\bar{y}$. Each individual voter's tradeoffs among the different types of spending are characterized by the equalization of the voter's marginal utilities from the different spending categories:

$$1 - [(1-\tau)\, y_i + f_i] = 1 - (1 - \gamma_i + \phi\gamma_i)\, h_i = \frac{1}{(1+\delta_i)^{\theta}} [1 - (1 - \gamma_i + \phi\gamma_i)\, g_i] \qquad (4)$$

together with the condition of a binding budget constraint $f_i + h_i + g_i = \tau\bar{y}$. Lower voter trust γ_i decreases the marginal utilities of consumption spending h_i and, to a lesser extent because of discounting, of investment spending g_i. Thus, the voter would prefer to reallocate spending away from consumption and investment spending toward transfers. High voter discounting δ_i reduces the marginal utility of investment spending. Thus, the voter would prefer to reallocate spending away from investment spending toward non-investment spending; the same logic applies for an increase in the time horizon θ. High voter income y_i reduces the marginal utility of transfer spending, without affecting the marginal utility of government consumption and investment spending, thus being associated with an increased preference for public good spending at the expense of transfer spending.[13]

The resulting changes in the preferred spending allocation due to these factors can be characterized as follows.

Proposition 1 *(i) Lower voter trust γ_i increases individual voter demand for transfers f_i and decreases demand for government consumption spending h_i. (ii) Higher voter discounting δ_i increases individual voter demand for transfers f_i and consumption spending h_i, and decreases demand for investment spending g_i.*

[13] In general, this may depend on the type of public good. Arguably, higher-income individuals value security more, and public education less, than lower-income individuals. We abstract from this type of heterogeneity.

In addition, voters with a lower pre-tax income y_i prefer higher transfers f_i and lower consumption and investment spending, h_i, g_i. That is a natural consequence of having a higher marginal utility of disposable income, all else equal.

Chart 1. Determinants of Individual Preferences for Public Spending

	Transf v. Publ Gds $\frac{f_i}{h_i+g_i}$	Short v. Long-Trm $\frac{f_i+h_i}{g_i}$	Cons. v. Invest $\frac{h_i}{g_i}$	Transf v. Cons $\frac{f_i}{h_i}$
Low Trust	pos	pos/neg	neg	pos
High Discount	pos	pos	pos	pos/neg

Changes in the components of public spending also have implications for changes in *relative* magnitudes between the different components. Here we are particularly interested in the ratios of transfer to public good spending and short-term to long-term spending. When voter trust is lower, the voter prefers to substitute away from public consumption spending toward transfer spending, whose relative marginal utility is higher.[2] When voter discounting is higher, or the time horizon for investment is longer, the voter prefers to substitute away from investment spending, toward transfers and consumption spending, whose relative marginal utilities are higher.

Proposition 2 *(i) Lower voter trust γ_i increases the individual preference for transfers relative to total public good spending $\frac{f_i}{h_i+g_i}$ and transfers to consumption spending $\frac{f_i}{h_i}$, and decreases the ratio of consumption to investment spending $\frac{h_i}{g_i}$. (ii) Higher voter discounting δ_i increases the individual preference for transfers relative to total public good spending $\frac{f_i}{h_i+g_i}$, short-term to long-term spending $\frac{f_i+h_i}{g_i}$, and consumption to investment spending $\frac{h_i}{g_i}$.*

Notice that in part (i) the ratio of short-term to long-term spending $\frac{f_i+h_i}{g_i}$ can either increase or decrease with γ_i depending on whether investment spending g_i rises or falls

[1]Contact Information: Keefer: Institutions for Development Department, Inter-American Development Bank, 1300 New York Ave NW, Washington, DC 20577, USA. Email: pkeefer@iadb.org. Scartascini: Research Department, Inter-American Development Bank, 1300 New York Ave NW, Washington, DC 20577, USA. Email: carlossc@iadb.org. Vlaicu: Research Department, Inter-American Development Bank, 1300 New York Ave NW, Washington, DC 20577, USA. Email: vlaicu@iadb.org. We thank Joao Ayres, Alejandro Izquierdo, Jorge Puig, Guillermo Vuletin, Diego Vera, and Elizabeth Zechmeister for comments, Georgina Pizzolitto for overseeing data collection, Kurt Birson, Adelaida Correa, and Sergio Perilla for research assistance. The findings and interpretations in this paper are those of the authors and do not necessarily reflect the views of the Inter-American Development Bank or the governments it represents.

[2]Note that it is public consumption, and not public investment, spending that bears the brunt of the adjustment to a low-trust environment. This is because the marginal utility of public investment is less sensitive to a decline in trust due to discounting.

with trust. Similarly, in part (ii), the ratio of transfers to public consumption spending $\frac{f_i}{h_i}$ can either increase or decrease since both components of spending are more preferred. In addition, higher pre-tax income should reduce the relative preferences $\frac{f_i}{h_i+g_i}$, $\frac{f_i+h_i}{g_i}$, and $\frac{f_i}{h_i}$. The comparative statics with respect to trust and discounting are summarized in Chart 1.[3]

Before studying the electoral equilibrium, it is instructive to characterize spending composition as chosen by a benevolent social planner. This sets a benchmark of socially optimal policy against which to compare the outcomes of electoral competition.

A social planner chooses spending levels (f_{sp}, h_{sp}, g_{sp}) that maximize aggregate voter welfare without facing the electoral constraints of low trust and high discounting, i.e., for the social planner, $\gamma_{sp} = 1$ and $\delta_{sp} = 0$. The social planner's problem is:

$$\max_{f,h,g} \left\{ \int_0^1 \left(z_i - \frac{1}{2} z_i^2 \right) di + \left(h - \frac{\phi}{2} h^2 \right) + \left(g - \frac{\phi}{2} g^2 \right) \right\} \tag{5}$$

subject to the budget constraint $f + h + g \leq \tau \bar{y}$, where $z_i \equiv (1-\tau) y_i + f$. The solution of this problem requires the equalization of the marginal aggregate welfare of the different spending categories:

$$1 - [(1-\tau)\bar{y} + f_{sp}] = 1 - \phi h_{sp} = 1 - \phi g_{sp} \tag{6}$$

and by the strict monotonicity of the voters' policy utilities, the government budget constraint is binding $f_{sp} + h_{sp} + g_{sp} = \tau \bar{y}$. Note that spending inefficiency ϕ reduces aggregate welfare through less efficient public good spending. Thus, higher government spending inefficiency optimally requires government revenues to be reallocated toward transfers at the expense of public goods.[4]

Turning to the electoral equilibrium, each party $j = A, B$ solves a constrained optimization problem, namely maximizing its winning probability subject to the government budget constraint, given its opponent $-j$'s strategy.

$$\max_{(f_j, h_j, g_j)} \left\{ \frac{1}{2} + \psi \left(W_j - W_{-j} \right) + \lambda \left(\tau \bar{y} - f_j - h_j - g_j \right) \right\} \tag{7}$$

where, as before, $W_j \equiv \int_0^1 W_{ij} di$ is average voter utility from party j's policies, and λ

[3] As the proofs in Appendix A show, the comparative statics in Propositions 1 and 2 can be derived under more general conditions, namely that the utilities of each spending component, f_i, h_i, g_i, are strictly increasing and strictly concave in that type of spending, and the utilities of public good spending, h_i, g_i, are strictly decreasing in trust γ_i. The only exception is the comparative static for $\frac{h_i}{g_i}$ with respect to γ_i.

[4] A case where this is particularly relevant is countries that have experienced windfalls of revenues from natural resources.

is the standard Lagrangian multiplier. For simplicity, we assume homogenous preference parameters in the electorate: $\gamma_i = \gamma$ and $\delta_i = \delta$ for all $i \in [0,1]$. The comparative statics and the data for this part will be at the aggregate level. A solution to this optimal allocation problem requires that the electoral returns of the different policies be equalized:

$$1 - [(1-\tau)\,\bar{y} + f_j] = 1 - (1 - \gamma + \phi\gamma)\,h_j = \frac{1}{(1+\delta)^{\theta}}\,[1 - (1 - \gamma + \phi\gamma)\,g_j] \tag{8}$$

for $j = A, B$ and by the strict monotonicity of parties' utilities, the government budget constraint is binding $f_j + h_j + g_j = \tau\bar{y}$. Note that the equilibrium condition for electoral competition corresponds to the spending preferences of the voter with average income $y_i = \bar{y}$; compare equation (8) to equation (4). Equation (8) can also be compared to the social planner's allocation characterized in equation (6). Compared to the social planner solution, in the electoral equilibrium the parties' electoral returns to an extra unit of public consumption and investment spending are diminished by voter trust γ and voter discounting δ. This observation leads to the following result.

Proposition 3 *There exists a unique electoral equilibrium and it is symmetric. In the electoral equilibrium, spending strategies* $(f_j, h_j, g_j)_{j=A,B}$ *have equal marginal electoral returns for each party. Parties' transfer spending is higher than in the social planner's allocation,* $f_j > f_{sp}$*, public consumption spending exceeds investment spending* $h_j > g_j$*, and investment spending is lower than the social planner's allocation,* $g_j < g_{sp}$*.*

Low voter trust $\gamma < 1$ and high voter discounting $\delta > 0$ imply that voter marginal utilities of public consumption and investment spending are lower than in the social optimum. Voters thus support candidates that provide higher transfers f_j and lower investment relative to what a benevolent social planner would provide. Government spending will then be reallocated toward transfers and away from public goods. Also, because of discounting, parties' marginal electoral returns from public investment spending g_j is lower than for public consumption spending h_j, causing larger allocations of public funds for short-term spending.

Government spending composition will vary with the extent of these policy preference distortions. The following result summarizes the main effects for spending levels. Below we will look at spending ratios as well.

Proposition 4 *(i) A decrease in voter trust* γ *leads to an increase in transfers* f_j*, and a decrease in public consumption spending* h_j*. (ii) An increase in voter discounting* δ *leads*

to an increase in transfers and consumption spending f_j, h_j, and a decrease in investment spending g_j.

When voter trust γ deteriorates, the marginal electoral return of public good spending decreases and voters reduce their support for candidates promising high public good spending. Government revenues are then reallocated away from public goods and toward transfers. When voter discounting δ increases, the marginal electoral return of long-term spending decreases and voters reduce their support for candidates promising high long-term spending. Government revenues are reallocated away from long-term spending and toward short-term spending.

An increase in average voter income $\bar{y}$ increases public consumption and investment spending, h_j, g_j, but may either increase or decrease transfers f_j. When average income $\bar{y}$ increases, this has two opposite-sign effects on transfers: on the one hand, higher tax revenues increase parties' incentives to provide more of all types of spending, including transfers; on the other hand, higher average income reduces the marginal utility of transfers, which gives parties an incentive to reallocate spending away from transfers.

Another way to look at spending composition is through spending ratios: transfer to public good spending and short-term to long-term spending. The expressions for these key ratios depend on the exogenous parameters γ and δ, and on average income $\bar{y}$. Based on Proposition 4, we note that in the first ratio, transfers to public goods, the numerator increases when voter trust γ is lower, as the share of transfer spending $f_j/\tau\bar{y}$ in the government budget goes up. Also, in both ratios, transfers to public goods and short-term to long-term spending, the denominator decreases when voter discounting δ is higher, as the share of investment spending $g_j/\tau\bar{y}$ in the government budget goes down. The results of this analysis are stated in the following proposition.

Proposition 5 *(i) A decrease in voter trust γ leads to an increase in the ratio of transfers to public goods, $\frac{f_j}{h_j+g_j}$. (ii) An increase in voter discounting δ leads to an increase in the ratios of transfers to public goods and of short-term to long-term spending, $\frac{f_j}{h_j+g_j}, \frac{f_j+h_j}{g_j}$.*

The effect of average income $\bar{y}$ on the two spending ratios depends on the parameters. This is because average income affects the incentives of parties to provide transfers f_j in both positive and negative directions, as discussed above.

3 Empirical Strategy

The theoretical model presented above yields predictions about differences in spending preferences among voters, and differences in spending outcomes among countries. We document these associations using both individual and aggregate level data. Individual-level preferences for public spending come from an original survey we designed and fielded in seven Latin American capital cities. Country-level spending outcomes come from existing annual data for a panel of 18 Latin American countries during the period 1995-2018. Below we provide additional details about sample selection, the construction of the key variables, and empirical models used.

3.1 Sample Selection

The micro evidence comes from an original survey of individual-level preferences for public spending. We developed a survey instrument in collaboration with the Latin American Public Opinion Project (LAPOP) at Vanderbilt University to elicit spending policy preferences and individual characteristics of citizens from seven Latin American countries: Chile, Colombia, Honduras, Mexico, Panama, Peru, and Uruguay. Below we refer to this survey as the IDB-LAPOP Survey. The survey was fielded between August-October 2017 in the capital cities of the seven countries. The sample consists of 6,040 respondents of voting age interviewed in households located in the metropolitan area of each country's capital city. In each country, the sample was determined through a multi-stage stratified probabilistic design to achieve representativeness of the voting population of each capital city's metropolitan area. The target geographic area is first stratified by metropolitan region, e.g., northern areas, western areas, followed by sub-stratification by electoral district, and then by block. Households were then selected from within blocks to obtain an age and gender distribution corresponding to the sampling frame. A single individual from each household responded to the interviewer's questions. The questions evaluated respondent preferences with respect to funding for education, public safety, aid to the poor, and red tape. The survey also measured personal characteristics such as trust, risk aversion, and patience.[5]

The target sample size was 900 interviews for each country. Table 1 reports the final sample size achieved in each country. The target sample size was attained and sometimes

[5] The language used in the interviews was Spanish. Data collection was done through hand-held electronic devices for all the countries surveyed and for all interviews. The survey was pre-tested in July-August 2017 to refine question wording and instrument flow.

exceeded in all countries, except in Mexico, where only 569 interviews were collected.[6] As Table 1 indicates, each capital city can be divided into areas and further subdivided into neighborhoods; we rely on variation within these geographic subdivisions to estimate differences in spending preferences.

The macro evidence on actual government spending allocations comes from existing data on public opinion and fiscal outcomes. In assembling a panel of countries, the main constraint was finding the largest group of countries for which a long enough time series of citizen trust in political institutions was available. The longest such survey of public opinion is Latinobarometro, which asked a consistent set of questions about trust in democratic institutions since the survey began in 1995. Latinobarometro surveyed the same 18 countries throughout the various waves of their survey; these countries are listed in Table 2. Note that the seven countries in our IDB-LAPOP survey are a subset of this larger Latinobarometro country sample. In each country Latinobarometro interviews nationally representative samples of voting-age citizens. Historical data on public spending are available for most of the world's countries, including Latin America, from the IMF's World Economic Outlook (WEO), and we match these data to the Latinobarometro panel. The time series of spending outcomes vary in length from country to country, but for most of our Latin American sample the data begin in the 1990s or earlier. Overall, the country and year selections allows for a maximal sample size of 432 country-years.

3.2 Variable Construction and Empirical Specifications

Here we present the main variables used in the empirical analysis and explain how they relate to the theory model's constructs. A full list of variable definitions is available in Section B2 of Appendix B. We also propose empirical specifications that provide statistical tests for the theoretical predictions.

3.2.1 Individual-Level Data

The key preference variables are individual-level measures of trust and discounting, corresponding to the parameters γ_i and δ_i in the model. Trust in our analysis refers to voter confidence that spending will translate into promised welfare gains. We measure trust in elec-

[6] The reason was a magnitude 7.1 earthquake that struck the capital city on September 19, 2017, and caused significant damage to the southern portion of *Distrito Federal* and outlying towns. This caused the team to suspend fieldwork in Mexico as the new conditions on the ground made it infeasible to implement the original sampling design.

toral promises through answers to the following survey question: "Thinking about politicians in general, do you consider it very, somewhat, not very, or not at all, common that they keep their promises?" The four answer options, contained in the body of the question, yield a discrete variable with four categories. Based on these, we define a numeric variable named $Mistrust_{ic}$, for individual i in city c, that takes four equidistant values in the unit interval [0,1], with 1 indicating the highest level of mistrust in politician promises. As shown in Table 3 of summary statistics, on average across the seven-city sample, mistrust in politician promises is high, namely 0.707.

To measure discount rates, we implement a version of the unfolding brackets method, which Falk et al. (2018) tested in the lab and adapted into a survey module.[7] Each respondent is presented with a sequence of binary choices as follows. First, each respondent has to choose between receiving (the local currency equivalents of) 100 dollars today or 154 dollars in 12 months. If the respondent prefers the immediate payment, then in the next question the delayed payment is increased to 185 dollars. If the respondent prefers the delayed payment, then in the next question the delayed payment is decreased to 125 dollars. The choices are adjusted up or down, in the same fashion based on earlier responses, until a total of five sequential choices have been made. That produces a choice tree with 32 different terminal branches, with delayed payouts ranging from 103 to 215 dollars and arranged in increasing order of impatience. We define a variable $Impatience_{ic} = 1 - \frac{1}{1+r_{ic}}$, based on the interest rate r_{ic} implicit in the choices between monetary payoffs. This results in a continuous measure with mean 0.435, a rather high level of impatience.[8]

The questions eliciting spending preferences targeted two policy areas that most respondents consider top priorities for their governments, namely education and security. Out of a list of 38 problems facing their countries, education and security were in the top three most frequently selected issues. For both of these policy areas, we designed questions to capture the two key tradeoffs highlighted by the model: transfers versus public goods, and short-term versus long-term spending. We also included questions that measure the more narrow tradeoffs between transfers and public consumption, and consumption versus investment spending; see Chart 1 in the theory section above. In almost every case, the questions follow a common structure: the respondent is presented with two policies, A and B, as alternative solutions to a certain policy challenge. Then, the respondent is asked which policy

[7] We use a similar strategy to develop a measure of risk aversion, discussed in the next section, for use in the falsification analysis reported in Appendx B.

[8] Nonresponse was a relatively more severe problem when measuring impatience than measuring mistrust. Part of the reason was the more complex structure of the question.

option they prefer, A, B, or no preference between A and B.[9]

Individual preferences for transfers versus public good spending (f vs $h+g$) were elicited by offering a choice between the following policy alternatives. For education: "lowering taxes so families have more money to spend on their own education, and raising taxes on all products that people buy so the government can invest more in education." For security: "lowering taxes so families have more money to spend on their own security, and raising taxes on all products that people buy so the government can invest more in police and the judicial system." Lower taxes increase disposable income and, as discussed in the model section, are equivalent to an income transfer, with predictable welfare benefits; thus they represent an increase in f. The alternative policy is higher taxes for education or security spending; the language of the question is generic, allowing for both short-term h and long-term g spending in these areas.

We define two dummy variables $Transf\_v\_Educ_{ic}$ and $Transf\_v\_Secur_{ic}$ that take the value one for respondents that prefer more disposable income to government-provided public goods, or are indifferent, and take the value zero for those that strictly prefer government provision. The summary statistics in Table 3 show that 75.7 percent of respondents prefer transfers to public education provision and 60.6 percent prefer transfers to public security provision.

Individual preferences for short-term versus long-term spending ($f+h$ vs g) are measured through questions that offer a choice between a policy with more immediate payoffs, more government spending on hiring additional staff, versus policies with future payoffs, such as training government workers.[10] Hiring and training differ unambiguously in the timing of benefits: compared to hiring additional employees, training current employees will yield benefits after the training is completed. To emphasize this, a prior question primed respondents to think that training takes at least two years. Hence, respondents with higher discount rates should unambiguously prefer hiring. Hiring and training also differ in the predictability of benefits. Voters should be familiar with current teacher and police performance and can infer that, to some extent, hiring more would provide more of the same benefits. Thus, hiring can be thought as a convex combination of f and h; training has both future and less certain

[9] In each case, there is also the possibility of responding "I don't know." In the few cases in which no answer is recorded, that appears in the data with a "No response" code.

[10] For the area of security, the question was: "Now suppose that the government is evaluating two options to fight crime. Option A is to increase the number of police, hiring police who are the same as the current police, with the same characteristics and the same salaries. Option B would be to maintain the same number of police, but increase their training and salaries, and replacing those with poor performance. The two cost the same, but the government can only do one of them. Which option would you prefer?"

benefits and thus should behave like g.[11]

A related question sheds light on the same tradeoff in the context of education, though less directly. As a last question in the education module, we ask respondents whether they believe teacher training improves student learning.[12] Since respondents have just been asked to choose between lower taxes and education spending, they are primed to think of the efficacy of teacher training in terms of support for funding teacher training relative to other education inputs. Assuming that those who more strongly believe that teacher training benefits students also tend to prefer spending on teacher training versus other education spending, this question is a reasonable proxy for preferences for long-term public good spending g relative to short-term education expenditures, $f + h$.

We define two dummy variables $Short\_v\_Long\_Educ_{ic}$ and $Short\_v\_Long\_Secur_{ic}$ that take the value one for respondents who prefer hiring to training government workers, or are indifferent, and take the value zero for those who strictly prefer training. The summary statistics in Table 3 show that 22.6 percent of respondents prefer short-term to long-term spending (hiring over training) in education and 45.2 percent prefer short-term to long-term spending on security.[13]

For additional validation, we also included two questions that capture the tradeoffs between public consumption versus investment spending (h vs g), and transfers versus public consumption (f vs h). The first tradeoff is framed in the context of education. The respondent is given a choice between two policies: "the government purchases tablets that the students would receive immediately," or the government improves teacher training which "would take two to four years until the teachers are better trained." The key difference between these two alternatives is the time horizon of educational benefits, immediately versus several years; respondents' assessment of the welfare impact should be uncertain in both cases as it depends on how politicians implement these new policies.[14] The dummy

[11] The alternatives may, however, also be viewed as providing different inputs into the production of a public service: one seeks to boost the quantity of the input, the other its quality. We have no data on respondent opinions on whether quantity or quality has a larger impact on service delivery, independent of trust and discounting issues. Although we are not aware of any theory that suggests such unobserved opinions would be correlated with trust and discounting, we cannot exclude this possibility.

[12] The question was: "To what extent do you believe that if government gave teachers more training, this would have an important effect on the educational performance of children?"

[13] The order in which the policy options are presented in the survey does not necessarily correspond to the way we code the responses into dummy variables, namely indicating preference for transfers, respectively short term policies. This alleviates the possibility that respondents may have a tendency to consistently pick the first (or the last) option presented. Even so, as long as this tendency is not correlated with mistrust and impatience, any bias would affect levels and not marginal effects.

[14] Respondents may differ in expectations about the relative efficacy of tablets and teachers for student

$Tablet\_v\_Teacher_{ic}$ takes the value one if the respondent prefers tablets or is indifferent, and the value zero if the respondent strictly prefers teacher training. The mean of this variable shows that 35.5 percent prefer the tablet option.

The second tradeoff is framed in the context of crime reduction policies. Respondents choose between subsidies to citizens for private security and spending for police resources.[15] Both options emphasize specific, short-term steps to reduce crime. The difference is that subsidies have a clear monetary payoff, hence designated as f, whereas increasing police resources, by being less explicit about the use of those resources, introduces uncertainty about the actual benefits of the spending policy, designated as h. The dummy $Subsidy\_v\_Police_{ic}$ takes the value one if the respondent prefers subsidies for privately contracting security or is indifferent, and the value zero if the respondent strictly prefers resources given to police. A fraction of 46.2 percent of respondents prefer receiving the subsidy to allocating more money to the police.

The relationships between the six spending preference variables described above, and voter mistrust and impatience, are presented graphically in Figure 1 in Appendix A. Each graph plots the raw mean of each variable conditional on increasing levels of mistrust and impatience. The patterns are broadly consistent with the model predictions from Chart 1 above. The average preference for transfers over public goods is increasing in both mistrust and impatience, and does so almost monotonically. The average preference for short over long-term spending increases in impatience, but not in mistrust, again in line with the model predictions. Finally, in the third panel, the average preference for consumption over investment spending (the darker lines referring to education policies) decreases in mistrust and increases in impatience, while the average preference for transfers over public consumption spending (the lighter lines referring to security policies) appears to increase in mistrust at the upper end, but does not change visibly with impatience.

Below we explore these patterns in regression models that control for potential confounders, such as age and education, and estimate differences based on variation within more narrow geographic units, such as city neighborhoods. Specifically, we estimate linear

learning. While we view it as implausible that unobserved opinions about relative efficacy are correlated with individual discount rates, we cannot exclude this possibility.

[15] The question was: "Imagine that the government has two options of dealing with security. Option A assigns more resources to the police so that they can do a better job fighting crime throughout the city. Option B gives subsidies to citizens and neighbors so that they can fight crime by contracting guards and putting up security cameras on their blocks. The government cannot do both things. Which option do you prefer?"

probability models of the following form:

$$y_{ic} = \beta_0 + \beta_1 Mistrust_{ic} + \beta_2 Impatience_{ic} + \boldsymbol{\lambda}'\mathbf{x}_{ic} + \mu_{c_s} + u_{ic} \tag{9}$$

where y_{ic} is a spending preference dummy variable, for individual i in city c, $\mathbf{x}_{ic}$ is a vector of individual-level covariates, μ_{c_s} are fixed effect indicating geographic subdivisions of a city, and u_{ic} is the error term. The main parameters of interest are β_1, β_2 which measure the change in the probability of supporting a given type of spending that is associated with an increase in individual mistrust and impatience, respectively. Note that while we do not have randomized variation in these two key preference factors, the strategy we use to elicit spending preferences through hypothetical policy comparisons alleviates one important type of endogeneity, namely the potential for reverse causation, or simultaneity bias, to affect the results. That would be a concern when using observational data on actual policies, whose observed quality can influence the level of trust or impatience of the electorate.

The specification in equation (9) provides direct tests for the model's predictions. We supplement this approach with a more indirect strategy. Namely, we experimentally shift the preference parameters ϕ and θ of the model, which control the intensity with which individual trust γ_i and discounting δ_i affect spending preferences.

In the first experiment, tied to education policies, respondents are randomized with equal probability to receive the following informational message before being asked to pick one of two policy choices, buying electronic tablets for students and improving teacher training: "Studies indicate that having better teachers is key to improving student learning, but no studies indicate that the use of tablets does." We interpret this treatment as a shock to the inefficiency parameter ϕ. The treatment thus should reduce the level of individual support for the policy whose inefficiency has been increased relative to the policy whose inefficiency parameter has remained unchanged. In addition, the average treatment effect in individual support for the affected policy depends on the level of individual trust γ_i. It should be lower for individuals with lower levels of trust, because the change in the marginal utility of current spending $\frac{\partial W_{ii}}{\partial h_i} = 1 - (1 - \gamma_i + \phi\gamma_i)\, h_i$, namely $\frac{\partial^2 W_{ii}}{\partial h_i \partial \phi} = -\gamma_i h_i$, is decreasing in trust. In other words, lower-trust individuals should be less likely to switch their preference away from the inefficient policy.

The second experiment is related to security policies. The choice is between two policies for crime reduction: contracting more police, and improving the quality of police through training. We have seen this choice before as one between short-term and long-term spending,

since training takes time. Before making a policy choice, respondents are randomized with equal probability, and independently of the first experiment, to receive one of the following two messages: "Contracting more police reduces crime by 10% immediately, while improving the quality of police reduces crime by 20%, but it does so in two years." or "Contracting more police reduces crime by 10% immediately, while improving the quality of police reduces crime by 20%, but it does so in four years." We interpret the first treatment as reducing the time horizon for obtaining policy results from training, in other words a shock to the parameter θ. This should reduce the level of individual support for the short-term policy of hiring police, as the long-term policy of training police becomes more attractive. The magnitude of the average treatment effect for individual support is proportional to:

$$\Delta W_{ii} = \frac{1}{(1+\delta_i)^2} - \frac{1}{(1+\delta_i)^4} \tag{10}$$

which shows that it depends on the individual level of discounting. Denoting by $\eta_i = 1 - 1/(1+\delta_i)$ individual i's level of impatience, which is always in the unit interval $[0,1]$, one can rewrite the change in individual utility induced by the time horizon shock as $\Delta W_{ii} = (1-\eta_i)^2 - (1-\eta_i)^4$. One can see that $\frac{\partial}{\partial d_i}\Delta W_{ii} = 2(1-\eta_i)\left[2(1-\eta_i)^2 - 1\right]$, showing a nonlinear dependence of the treatment effect on η_i. Figure 2 in Appendix A plots the utility differential as a function of impatience η_i, within the range of variation of our data. We note that the effect of the time horizon treatment is smaller for extreme discounts than it is for mid-range discounts.

For both the education experiment and the security experiment, we test for the hypothesized heterogeneity in the average treatment effects with simple specifications of the type:

$$y_{ic} = \beta_0 + \beta_1 \mathit{Treatm}_{ic} \times z_{ic} + \beta_2 \mathit{Treatm}_{ic} \times (1 - z_{ic}) + \beta_3 z_{ic} + \boldsymbol{\lambda}' \mathbf{x}_{ic} + \mu_{c_s} + v_{ic} \tag{11}$$

where y_{ic} is a spending preference dummy variable, for individual i in city c, Treatm_{ic} is a dummy variable indicating receipt of the treatment, and z_{ic} is a dummy variable for the first category (low trust, for the education experiment; extreme discount, for the security experiment). Then heterogeneity can be detected with a test of equality of the interaction coefficients, β_1 and β_2. As before, $\mathbf{x}_{ic}$ is a vector of individual-level covariates, μ_{c_s} are fixed effects for geographic subdivisions of a city, and v_{ic} is the error term.

The set of covariates included in the individual-level analysis are income, education, age, and gender. Each is potentially correlated with attitudes toward politicians, impatience

in obtaining economic benefits, and preferences for public spending. Of these covariates, income has several weaknesses: a high non-response rate (15.8 percent, or 954 observations) significantly reduces sample size and may introduce non-response bias, top-coding distorts the observed empirical income distribution, and the discrete scale based on income brackets potentially hides useful variation. To address these issues, we developed a Proxy Means Testing (PMT) model of household income based on variables in our data that record asset ownership for a set of 15 assets. We estimate the parameters of one PMT model for each country using the official 2017 harmonized household surveys from the countries in our sample after selecting from the national sample subsamples corresponding to our city geography. Then, we use the country-specific parameters to predict income for the respondents in our sample.[16] The correlation between the self-reported survey income and the estimated PMT income is 0.551 ($N = 5,065$). Figure 3 in Appendix A plots the empirical distributions of the survey measure of income together with the estimated measure of income. The distributions are standardized within each country. We note that the distribution of PMT income appears to better resemble a typical right-skewed income distribution. Therefore, we use it as a robustness check in all our empirical specifications.[17]

3.2.2 Country-Level Data

In the context of democratic elections, voter preferences should ultimately translate into policy outcomes through the mechanism of electoral competition, along the lines of the theory model above. It is thus important to examine if the results on spending preferences from the individual-level analysis are reflected in actual spending outcomes. As spending outcomes are measured at the country level, we need to change the unit of analysis from the individual to the country. Instead we have to rely on time variation in spending outcomes within countries. The strategy will be to use country and year fixed effects to estimate empirical relationships between country-level average measures of trust and patience, on the one hand, and spending outcomes, on the other hand.

To maintain comparability with the individual-level analysis, we attempt to find the closest country-level counterparts to the individual-level variables. The Latinobarometro

[16] Along with the asset dummies we also include a continuous variables, namely education of the head of household. Of the 15 assets in our data, 13 were also measured in the national household surveys. The PMT models are etimated using stepwise regression with threshold parameter 0.15 and are presented in Table B2 of Appendix B.

[17] A downside of the estimated income measure is that it is highly correlated with education (correlation 0.568), reducing the precision of its coefficient when both education and income are included as covariates.

survey has included a question about trust in various political institutions beginning in 1995: "How much confidence do you have in the following institutions?" Among the institutions included are the congress, the government, the president, and political parties. Recall that the measure of trust in politicians in the IDB-LAPOP Survey is specific about trust being about the expectation that politicians will do what they promise; the reference is thus to politicians in general, not only current public officials. We thus select trust in political parties as the measure of trust most similar to the IDB-LAPOP measure. After normalizing its discrete four-category scale to the unit interval, we average it at the country level for every year in the panel. As the Latinobarometro samples are nationally representative for citizens over 18 years old, the country-level means should be accurate estimates for trust in parties in the entire voting population. The resulting variable is $Mistrust_{kt}$, for country k in year t. Its summary statistics are presented in Table 9. The sample mean is 0.739, which comes close to the 0.707 mean in the individual-level data from Table 3.

Regarding a country-level measure of patience, to our knowledge there are no consistent time series of discount rates estimated from nationally representative samples. Instead, we use the real interest rate as a proxy variable.[18] This is defined as the nominal interest rate adjusted by the GDP deflator. It is available from the World Bank's World Development Indicators (WDI) since 1990 for most Latin American countries. While this is a market-based measure, it is likely correlated with average subjective patience, as it measures the current-value premium charged for delaying a sure payment for a year.

Government spending data that are comparable across countries are available for broad categories of spending from the IMF's World Economic Outlook. We supplement these data for the earlier years when many values are missing with data from Kaminsky, Reinhart, and Vegh (2004). The variables we use refer to the general government, as the spending categories of the central government do not always reflect social programs like public pension funds and other publicly provided insurance. We construct the ratio of transfers to public good spending $Transf\_v\_Publ\_Gds_{kt}$ by subtracting expenditure on goods and services from current spending and dividing the result by the sum of current and capital spending. In all cases we remove interest payments from the aggregates, and we adjust all spending variables using the GDP deflator. Current spending includes social benefits, compensation of employees, and purchases of goods and services. Capital spending is defined as public gross fixed capital formation. We construct the ratio of short-term to long-term spending

[18] The standard consumption-based asset pricing model predicts that in the steady state, the discount factor of the representative agent equals the inverse of one plus the interest rate, see, e.g., Lucas (1978).

$Short\_v\_Long\_Trm_{kt}$ by dividing total current spending by the sum of current and capital spending. The summary statistics for the spending ratios are in Table 9. We notice there is significant within-country variation in the two spending ratios over the 24-year period from 1995-2018; the within standard deviations are around 5 percentage points.

The empirical specification will be

$$y_{kt} = \beta_0 + \beta_1 Mistrust_{kt} + \beta_2 Real\_Int\_Rate_{kt} + \boldsymbol{\lambda}'\mathbf{x}_{kt} + \mu_k + \tau_t + u_{kt} \tag{12}$$

where y_{kt} is a spending ratio in country k in year t, $\mathbf{x}_{kt}$ is a vector of country- and time-varying covariates, μ_k are country fixed effects, τ_t are year fixed effects, and u_{kt} is the error term. The parameters of interest are β_1, β_2, which measure the change in a spending ratio that is associated with an increase in average mistrust and average impatience, respectively. Among the set of covariates, we include GDP per capita, log population, the unemployment rate from the WDI, and a dummy for a general election year, from the Database of Political Institutions (DPI), extended to include the year 2018. Figure 4 in Appendix A plots time series of across-countries averages of the two spending ratios alongside time series for mistrust in parties and the real interest rate. Overall one can observe some co-movement between the series, which will be explored further in the next section using the empirical specification presented above.

4 Empirical Results

This section presents evidence for the theory model's predictions about how individual characteristics such as trust and patience affect voter spending preferences; see Proposition 2 and Chart 1 above. Much of the discussion will be focused on the individual-level results based on the original IDB-LAPOP Survey we conducted in seven Latin American capital cities. The country-level results, based on within-country variation in spending outcomes over the last two decades, provide further validation for the plausibility of the theoretical mechanisms; see Proposition 5 above.

4.1 Individual-Level Results

In the previous section we described two empirical strategies for analyzing the individual-level data on spending preferences. We begin with the direct approach of estimating empirical

relationships between spending choices and preference characteristics, according to equation (9). Later we present results from the survey experiments that provide an indirect approach to testing the comparative statics of the theory model; see equation (11).

Transfers vs. Public Goods. Consider the determinants of preferences for transfers over public goods. Table 4 presents regression coefficient estimates that characterize the dependence of preferences for transfers on an individual's mistrust of politicians and impatience in obtaining economic benefits. The estimates refer to public goods in two policy domains: education, in the left half of the table, and security, in the right half of the table. We first note that the coefficient patterns are similar for the two policy domains, namely that higher mistrust and higher impatience are both associated with more support for transfers. Columns (1) and (5) start with a simple specification that controls for area fixed effects only, and report robust standard errors. Columns (2) and (6) control for neighborhood fixed effects and cluster the standard errors at the neighborhood level. The next pair of columns introduce individual covariates, namely income, education, age, and gender. Finally, columns (4) and (8) replace the survey-based measure of income with the estimated income measure using a Proxy Means Testing (PMT) model. The coefficients on *Mistrust* and *Impatience* are stable across specifications and precisely estimated. Their magnitudes are somewhat larger for the transfers-security tradeoff. In addition, lower-income respondents are more supportive of transfers at the expense of government-provided education and security, in line with the theory model's argument that lower-income individuals have a higher marginal utility of disposable income, so a higher marginal utility of transfers.[19]

Short vs. Long-Term Spending. Regression coefficients in Table 5 show relationships between voter mistrust and impatience and the relative preference for short-term spending in the same two policy domains, education and security. The structure of the table is analogous to the previous table on transfers versus public goods. In this case, the theoretical prediction is that *Impatience* should affect individual demand for short-term spending. By reducing the marginal utility of investment spending, impatience induces a reallocation away from investment and toward transfers and public consumption. *Mistrust* has ambiguous effects on the short vs. long term tradeoff.

The coefficient estimates in the left part of the table show that support for short-term spending to hire more teachers versus train existing teachers increases by about 8 percentage

[19] The finding that low-income voters demand less public education spending relative to transfers resonates with the results of Bursztyn (2016) from Brazil, who attributes them in part to short-term bias in the preferences of poor voters. Here we control for respondents' level of discounting.

points with impatience. On the right side of the table, support for short-term spending to hire more police versus train existing police increases by about 10 percentage points with *Impatience*. The coefficients for *Mistrust* are small, negative, and not statistically different from zero. Higher income and more education, on the other hand, are associated with lower support for short-term spending.[20]

Other Preferences. In Table 6 we explore related preference tradeoffs, namely public consumption versus investment spending, on the left side, and transfers versus public consumption, on the right side. When faced with a choice between having the government buy tablets for school children, and investing in teacher training, to improve the quality of education, respondents with higher levels of *Mistrust* are less supportive of tablets, as predicted by the theory model, as the marginal utility of public consumption is more sensitive to trust than the marginal utility of public investment which is discounted. Respondents with higher *Impatience* are more supportive of tablets, as they discount the utility of investing in teacher training more heavily. In this policy choice, income differences play an ambiguous role, as income does not directly affect the marginal utilities of either policy. On the right side of the table, we study the choice between receiving a subsidy and providing more resources to police. Here respondents that report higher *Mistrust* in politician promises are more supportive of the transfers option. *Impatience* should not affect this comparison as both policies are short-term.[21]

Our interpretations of the empirical results depend on the assumption that the particular mistrust and impatience variables used correspond to the parameters of the theoretical model. To provide support for this correspondence, we report results of falsification tests in Tables B3-B5 of Appendix B to compare to Tables 4-6. The tests replace the key explanatory variables *Mistrust* and *Impatience* with related but distinct variables that should have a weaker association with our measures of spending preferences. We substitute for *Mistrust* in political candidates' promises a more general measure of mistrust, *Interpers*, based on the following standard interpersonal trust question: "In general, would you say that the majority of people are trustworthy?" This measure should display a weaker association with spending preferences, as it includes mistrust in politicians but also in other individuals. For *Impatience* we substitute risk aversion, *Risk Avers*, as a related determinant of preferences.

[20] The more educated are generally more likely to believe in the efficacy of training.

[21] Higher income respondents are less supportive of transfers, in column (7), although when using estimated PMT income in column (8) the coefficient while negative, is not statistically different from zero. However, the coefficient on Education, a variable highly collinear with PMT income (correlation 0.568), points in the expected direction.

We develop a risk aversion measure using a survey module similar to the one we use to measure patience, where binary choices are offered sequentially between a lottery and a sure payment, yielding 32 levels of risk aversion. The falsification tests show that the substitute variables always have smaller coefficient estimates than the original variables.[22]

Randomized Treatments. We now discuss the evidence coming from the randomization of preference parameters that control the intensity with which trust and patience affect spending preferences. In the theory model these are denoted by ϕ (policy inefficiency) and θ (time horizon). In the education experiment, we generated randomized variation in the inefficiency of a current spending policy by providing an informational message to treated respondents that the effectiveness of technology in the classroom has not been backed by evidence, whereas the effectiveness of well-trained teachers has. Table 7 shows that the average treatment effect is a -3.3 percentage point decrease in support for spending on technology in the classroom, versus spending on teacher training. In columns (3)-(4) we find that the treatment effect is more pronounced for high-trust respondents. High-trust respondents should be more sensitive to shocks to ϕ because they have more certainty that the government will deliver on its promises; hence, they are more likely to adjust their preferences away from the less effective policy. Low-trust respondents have a lower utility gain from switching because they attach a lower value to both policies. At the bottom of the table we present p-values for an F-test of coefficient equality of the two interaction terms. The test rejects equality especially in the last two columns where we introduce covariates. Among the other coefficients, we note the one for *L Trust*, which indicates that untreated low-trust respondents are less supportive of spending on technology, in line with the theory model and the result from Table 6 on the h vs. g tradeoff.

In the security experiment we generated randomized variation in the time horizon of policy benefits in the context of a choice between current spending on hiring additional police and investment spending on training existing police. For the treatment group, indicated by the dummy *Treatm*, the policy benefits of police training are realized in two years. For the control group the policy benefits of police training are realized in four years. Thus, we would expect the treatment, by reducing the time horizon for the investment option, to cause a shift away from the current spending on hiring and towards investment spending on training. The first two columns of Table 8 indeed show a negative average treatment effect of -6.1 percentage points. Columns (3)-(4) estimate the treatment effect separately

[22] The sample correlation between *Mistrust* and *Interpers* is 0.156, and the sample correlation between *Impatience* and *Risk Avers* is 0.161.

for respondents with extreme discount factors (very high or very low), and respondents with moderate discount factors. As we argued above, the treatment effect should be more pronounced for the middle group because the difference in discounted utilities is maximized at a moderate level of impatience; see Figure 2. The estimates show that the treatment effect is about twice larger for moderate discount respondents. At the bottom of the table, the p-values for the F-test of coefficient equality of the two interaction terms reject equality at conventional significance levels in models (5)-(6) that include covariates.

4.2 Country-Level Results

The theory model predicts that voter preferences translate into spending outcomes through the mechanism of electoral competition. The candidates who get elected to choose the actual spending policies reflect the spending biases of the electorate. Proposition 5 derived testable hypotheses about the relationship between aggregate trust and aggregate discounting, on the one hand, and government spending ratios: transfers versus public goods and short-term versus long-term spending. Here we examine these hypotheses empirically using the panel of 18 Latin American countries that we constructed for the period 1995-2018.

The results are reported in Table 10; see also Figure 4 for a time series plot of the raw data on the key pairs of variables. All specifications include country and year fixed effects and report robust standard errors. This strategy controls for time-invariant differences among countries, such as culture and institutions, as well as common time shocks, such as international commodity price movements. The first three columns show that country-years with higher aggregate mistrust in political parties have on average higher ratios of transfers to public goods. Also, country-years with higher real interest rates, a proxy for aggregate impatience, have on average higher ratios of transfers to public goods. We also note that wealthier and larger countries tend to spend less on transfers relative to public goods compared to poorer and smaller countries. Years of economic slowdown when the unemployment rate rises tend to be years when the share of transfers in the budget increases.

The last three columns of Table 10 show that in the models explaining variation in short versus long-term spending, aggregate mistrust and impatience also have positive coefficients. Higher GDP per capita is associated with lower short-term spending relative to long-term spending, and years with high unemployment tend to be years with high ratios of short-term to long-term spending.[23] We perform a falsification exercise that mirrors the one we carried

[23] Ardanaz and Izquierdo (2017) find that this kind of adjustment in developing countries is driven by a

out for the individual-level data. We replace party mistrust with interpersonal mistrust, and the real interest rate with the interest rate spread, as a proxy for risk aversion. The results are in Tables B6-B7 of Appendix B. We observe that the substitute variables have less or no explanatory power compared to the original variables.

5 Conclusion

Conventional explanations for inefficiently low levels of public good, and particularly investment, spending in developing countries largely rely on supply-side arguments where government actors or institutions fail to supply the types of spending that most voters want. In this paper we provide a demand-side mechanism that complements these existing hypotheses. We argue that voters rationally internalize the uncertainty of electoral promises when expressing their spending preferences at the ballot box. Unreliable electoral promises lower the returns that low-trust voters expect from public good spending. In addition, high discounting of spending whose benefits occur in the future reduces the demad for long-term spending. Therefore voters prefer political candidates who promise lower levels of public goods and long-term spending, and instead promise more certain and immediate forms of spending such as monetary transfers.

To test these arguments we designed an original survey of spending preferences that uses a revealed preference design in the context of budgetary tradeoffs. Our key explanatory variables are trust in politician promises and discounting of economic benefits. We find that lower-trust respondents are more supportive of transfers than public goods, and higher-discount respondents are more supportive of short-term spending than investment spending. These findings appear in two different high-salience policy domains in Latin America, education and security. We also study responses to a randomized informational message about the relative efficiency of two policies, and find that low-trust respondents are less willing to switch their choices from the inefficient policy to the relatively more efficient one. When we experimentally shorten the time horizon for returns on investment spending, we find that extreme-discount respondents are less likely to change their choice from a short-term policy to a long-term policy. We supplement the micro evidence with country-level data on spending outcomes, which confirms the individual-level patterns. Country-years with lower aggregate trust in political parties and higher real interest rates tend to be those with high ratios of transfers to public goods and current to capital spending.

cutback in capital spending.

Our approach to explaining spending preferences and outcomes could be extended to the revenue side of the government budget, including public borrowing and debt, which also have first order implications for long-term development. From a policy perspective, an important avenue for future research is understanding the determinants of low trust in electoral promises and the factors that could mitigate it. Our survey data suggests that some of these determinants operate at the individual voter level, while others may be more systemic. Perhaps the first type reflects lack of accurate information and could warrant behavioral interventions. The systemic component seems more complex. It may be rooted in social norms shaped by historical experiences (Nunn and Wantchekon, 2011). Alternatively, it may be endogenous to government performance: Low trust gives political candidates electoral incentives to adopt inefficient policies, or leads to self-selection into politics of candidates who prefer inefficient policies,[24] and low government performance in turn reinforces voters' low trust. Understanding why elections perpetuate this feedback loop, and what reforms are necessary to undo it, remain important research questions.

[24] See Keefer, Scartascini, and Vlaicu (2020) for an application of this point to the issue of populism in policymaking.

Appendix A

A1. Mathematical Proofs

Proof of Proposition 1. Individual-level spending preferences are characterized by the necessary and sufficient conditions in equation (4) and the binding budget constraint $f_i + h_i + g_i = \tau \bar{y}$, for each voter $i \in [0,1]$. (i) First consider a decrease in voter i's trust γ_i. This reduces voter i's marginal utilities from consumption and investment spending. The following will show that the new equilibrium should be characterized by lower marginal utilities from all of the three types of spending. Suppose a reduction in trust leads to a reduction in voter i's demand for transfer spending f_i. Then, the marginal utility of transfers $1-[(1-\tau)\, y_i + f_i]$ increases, and with it the marginal utilities of consumption and investment spending, respectively. Since $(1-\gamma_i+\phi\gamma_i)$ is now higher, it follows that both h_i and g_i have to be lower. Since transfers f_i are also lower, that violates the binding budget constraint condition. This contradiction implies that in the new equilibrium f_i has to be higher. By the binding budget constraint condition, it follows that $(h_i + g_i)$ has to be lower. Suppose h_i remains at least as high when γ_i is lower. Then g_i has to be lower. Differentiating the second equilibrium condition in equation (4) with respect to γ_i, we have $(1-\phi)\left[h_i - \frac{1}{(1+\delta_i)^\theta} g_i\right] = (1-\gamma_i+\phi\gamma_i)\left[\frac{\partial}{\partial \gamma_i} h_i - \frac{1}{(1+\delta_i)^\theta}\frac{\partial}{\partial \gamma_i} g_i\right]$, which is negative since $\frac{\partial}{\partial \gamma_i} h_i \leq 0 < \frac{\partial}{\partial \gamma_i} g_i$ and $\phi < 1$. However, the same second equilibrium condition can be rearranged into $1 - \frac{1}{(1+\delta_i)^\theta} = (1-\gamma_i+\phi\gamma_i)\left[h_i - \frac{1}{(1+\delta_i)^\theta} g_i\right]$, which implies that $h_i - \frac{1}{(1+\delta_i)^\theta} g_i > 0$. This contradiction leads to the conclusion that h_i is lower when γ_i is lower. (ii) Differentiating the first equilibrium condition in equation (4) with respect to δ_i we have that $\frac{\partial}{\partial \delta_i} f_i = (1-\gamma_i+\phi\gamma_i)\frac{\partial}{\partial \delta_i} h_i$, which means that f_i and h_i change in the same direction when the discount rate δ_i changes. Suppose that when the discount rate δ_i increases, f_i and h_i both decrease. From the equilibrium condition $1-(1-\gamma_i+\phi\gamma_i)\, h_i = \frac{1}{(1+\delta_i)^\theta}\left[1-(1-\gamma_i+\phi\gamma_i)\, g_i\right]$ an increase in δ_i and a decrease in h_i imply a decrease in g_i. However, from the binding budget constraint condition it has to be that g_i increases when f_i,h_i decrease. The contradiction implies that when the discount rate δ_i increases, f_i and h_i both increase. By the binding budget constraint condition, g_i has to decrease.

A similar strategy of proof delivers comparative statics with respect to voter income y_i. Differentiating the second equilibrium condition in equation (4) with respect to y_i gives $\frac{\partial}{\partial y_i} h_i = \frac{1}{(1+\delta_i)^\theta}\frac{\partial}{\partial y_i} g_i$, which shows that h_i and g_i move in the same direction as y_i goes up. Suppose that both h_i and g_i decrease. By the binding budget constraint condition, f_i has to

increase. This implies that voter i's marginal utility of transfers $1-[(1-\tau)\,y_i+f_i]$ decreases. Then, so do the marginal utilities of consumption and investment spending, contradicting the assumption that h_i and g_i decrease. The implication is then that both h_i and g_i increase when y_i increases. The binding budget then implies that f_i decreases when y_i increases. ■

Proof of Proposition 2. From part (i) of Proposition 1, f_i is higher when trust γ_i is lower, while h_i and g_i are both lower. It follows that when trust is lower, the ratios $\frac{f_i}{h_i+g_i}$ and $\frac{f_i}{h_i}$ are higher. From the equilibrium equations in (4), h_i and g_i can be expressed in terms of f_i as follows: $h_i = \frac{(1-\tau)y_i+f_i}{1-\gamma_i+\phi\gamma_i}$ and $g_i = \frac{(1+\delta_i)^\theta[(1-\tau)y_i+f_i-1]+1}{1-\gamma_i+\phi\gamma_i}$. These expressions imply that $\frac{h_i}{g_i} = \frac{(1-\tau)y_i+f_i}{(1+\delta_i)^\theta[(1-\tau)y_i+f_i-1]+1}$. Differentiating with respect to trust, it follows that $sgn\left[\frac{\partial}{\partial\gamma_i}\left(\frac{h_i}{g_i}\right)\right] = sgn\left\{\left(\frac{\partial}{\partial\gamma_i}f_i\right)\left[1-(1+\delta_i)^\theta\right]\right\} > 0$, since $\frac{\partial}{\partial\gamma_i}f_i < 0$ and $(1+\delta_i)^\theta > 1$. Therefore the ratio $\frac{h_i}{g_i}$ is lower when trust is lower. From part (ii) of Proposition 1, f_i and h_i are increasing in discounting δ_i, while g_i is decreasing in discounting. Given that the budget constraint is binding, $f_i + h_i + g_i = \tau\bar{y}$, the fact that f_i is increasing implies that $h_i + g_i$ is decreasing. Therefore. $\frac{f_i}{h_i+g_i}, \frac{f_i+h_i}{g_i}$, and $\frac{h_i}{g_i}$ are all higher when discounting δ_i is higher. The same conclusions follow from an increase in the time horizon θ. ■

Proof of Proposition 3. We first derive parties' winning probabilities as a function of voters' utilities. From the perspective of the parties, the probability that voter i votes for party A is $\mathbb{P}\{\sigma_i < W_{iA} - W_{iB} - \epsilon\} = \frac{1}{2} + (W_{iA} - W_{iB}) - \epsilon$ as the cdf of σ_i is $F_{\sigma_i}(x) = \frac{1}{2} + x$. Because the population of voters is large and partisan biases are iid, by the law of large numbers party A's vote share in the population equals the average probability of support across voters.

$$\zeta_A(\epsilon) = \frac{1}{2} + \int_0^1 (W_{iA} - W_{iB})\, di - \epsilon \tag{13}$$

and $\zeta_B(\epsilon) = 1 - \zeta_A(\epsilon)$. The winning probability of party A is the probability that its vote share exceeds a half:

$$\begin{aligned} \mathbb{P}\left\{\zeta_A(\epsilon) > \frac{1}{2}\right\} &= \mathbb{P}\left\{\epsilon < \int_0^1 (W_{iA} - W_{iB})\, di\right\} \\ &= \frac{1}{2} + \psi(W_A - W_B) \end{aligned} \tag{14}$$

as the cdf of ϵ is $F_\epsilon(x) = \frac{1}{2} + \psi x$. Also, $\mathbb{P}\left\{\zeta_B(\epsilon) > \frac{1}{2}\right\} = \frac{1}{2} + \psi(W_B - W_A)$, where for $j = A, B$ we denote $W_j \equiv \int_0^1 W_{ij} di$ the aggregate policy utility provided by party j's policies.

An equilibrium exists because the objective functions are jointly continuous in both parties' strategies, and concave in a party's own strategy. Equilibrium uniqueness follows

from the strict concavity of parties' objectives in own strategies; see equation (2). In a pure-strategy equilibrium parties adopt symmetric strategies and thus each party has one-half winning probability $\mathbb{P}\left\{\zeta_A(\epsilon) > \frac{1}{2}\right\} = \mathbb{P}\left\{\zeta_B(\epsilon) > \frac{1}{2}\right\} = \frac{1}{2}$. The necessary and sufficient equilibrium conditions are in equation (8) in the main text.

Solving first for the social planner allocation using equation (6) and budget balance, we have $f_{sp} = \left(\tau - \frac{2}{2+\phi}\right)\bar{y}$ and $h_{sp} = g_{sp} = \frac{1}{2+\phi}\bar{y}$. The electoral equilibrium variables solve the necessary and sufficient equilibrium conditions in equation (8) together with the binding budget constraint. To show that $f_j > f_{sp}$ we start by noticing that $f_{sp} = f_j|_{\gamma=1,\delta=0}$. Thus, showing that f_j is strictly decreasing in γ and strictly increasing in δ is sufficient to prove the claimed inequality $f_j > f_{sp}$. Suppose an increase in trust γ leads to an increase in party j's transfer spending f_j. Then, the marginal utility of transfers $1-[(1-\tau)\bar{y} + f_j]$ decreases, and with it the marginal utilities of consumption and investment spending, respectively. Since $(1-\gamma+\phi\gamma)$ is now lower, it follows that both h_j and g_j have to be higher. Since transfers f_j are also higher, that violates the binding budget constraint. This contradiction implies that in a higher-trust equilibrium f_j has to be lower. Differentiating the first equilibrium condition in equation (8) with respect to δ, we have that $\frac{\partial}{\partial\delta}f_j = (1-\gamma+\phi\gamma)\frac{\partial}{\partial\delta}h_j$, which means that f_j and h_j change in the same direction when the discount rate δ changes. Suppose that when the discount rate δ increases, f_j and h_j both decrease. From the equilibrium condition $1-(1-\gamma+\phi\gamma)h_j = \frac{1}{(1+\delta)^\theta}\left[1-(1-\gamma+\phi\gamma)g_j\right]$ an increase in δ and a decrease in h_j imply a decrease in g_j. As the budget constraint binds, it has to be that g_j increases when f_j and h_j both decrease. The contradiction implies that when the discount rate δ increases, f_j and h_j both increase. To show that $h_j > g_j$, notice that from the second equilibrium conditions in equation (8) we have $1-(1-\gamma+\phi\gamma)h_j = \frac{1}{(1+\delta)^\theta}\left[1-(1-\gamma+\phi\gamma)g_j\right] < 1-(1-\gamma+\phi\gamma)g_j$ because $\delta > 0$. To show that $g_j < g_{sp}$, suppose to the contrary that $g_j \geq g_{sp}$. Then, since $h_j > g_j$, it follows that $h_j+g_j > 2g_j \geq 2g_{sp} = h_{sp}+g_{sp}$, which because the budget constraint is binding implies that $f_j \leq f_{sp}$. This contradicts the established inequality $f_{sp} < f_j$. Therefore, it has to be that $g_j < g_{sp}$. ■

Proof of Proposition 4. Party spending promises are characterized by the necessary and sufficient conditions in equation (8) and the binding budget constraint $f_j + h_j + g_j = \tau\bar{y}$, for $j = A, B$. (i) First consider a decrease in voter trust γ. This reduces marginal welfare from consumption and investment spending. Suppose a reduction in trust leads to a reduction in party j promises of transfer spending f_j. Then, the marginal utility of transfers $1-[(1-\tau)\bar{y} + f_j]$ increases, and with it the marginal utilities of consumption and investment

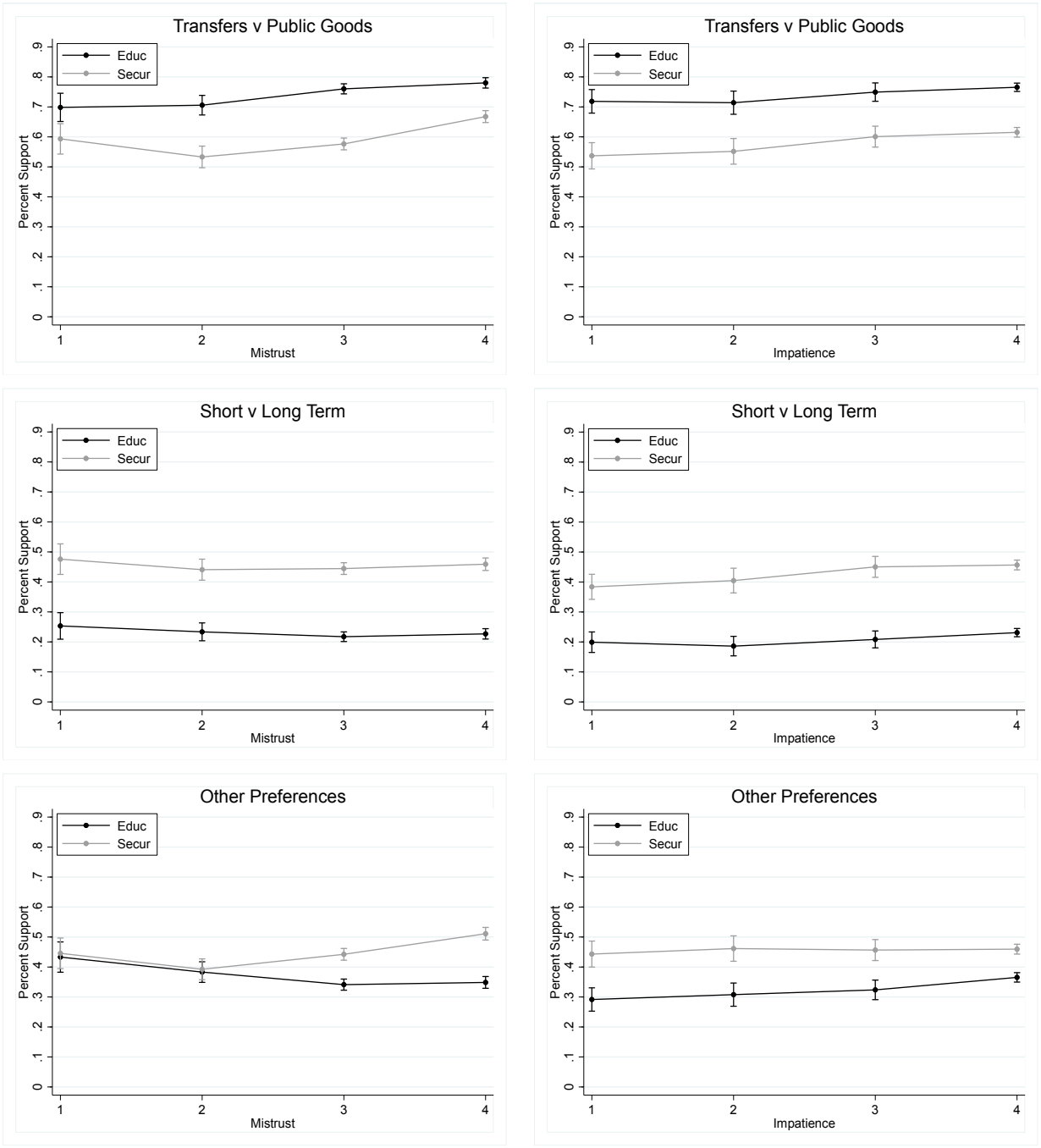
spending, respectively. Since $(1-\gamma+\phi\gamma)$ is now higher, it follows that both h_j and g_j have to decrease. Since transfers f_j also decreased, that violates the binding budget constraint condition. This contradiction implies that in the new electoral equilibrium f_j has to be higher. By the binding budget constraint condition, it then follows that public good spending promises (h_j+g_j) have to be lower. Suppose h_j remains at least as high when γ is lower. Then g_j has to be lower. Differentiating the second equilibrium condition in equation (8) with respect to γ, we have $(1-\phi)\left[h_j-\frac{1}{(1+\delta)^\theta}g_j\right]=(1-\gamma+\phi\gamma)\left[\frac{\partial}{\partial\gamma}h_j-\frac{1}{(1+\delta)^\theta}\frac{\partial}{\partial\gamma}g_j\right]$,which is negative since $\frac{\partial}{\partial\gamma}h_j\leq 0<\frac{\partial}{\partial\gamma}g_j$ and $\phi<1$. However, the same second equilibrium condition can be rearranged into $1-\frac{1}{(1+\delta)^\theta}=(1-\gamma+\phi\gamma)\left[h_j-\frac{1}{(1+\delta)^\theta}g_j\right]$, which implies that $h_j-\frac{1}{(1+\delta)^\theta}g_j>0$. This contradiction leads to the conclusion that consumption spending h_j is lower when trust γ is lower. (ii) Differentiating the first equilibrium condition in equation (8) with respect to δ we have that $\frac{\partial}{\partial\delta}f_j=(1-\gamma+\phi\gamma)\frac{\partial}{\partial\delta}h_j$, which shows that f_j and h_j change in the same direction when the discount rate δ changes. Suppose that when the discount rate δ increases, f_j and h_j both decrease. From the equilibrium condition $1-(1-\gamma+\phi\gamma)h_j=\frac{1}{(1+\delta_i)^\theta}\left[1-(1-\gamma+\phi\gamma)g_j\right]$ an increase in δ and a decrease in h_j imply a decrease in g_j. As the budget constraint binds, it has to be that g_j increases when f_j and h_j both decrease. The contradiction implies that when the discount rate δ increases, f_j and h_j both increase; therefore g_j has to decrease.

One can also derive comparative statics with respect to aggregate voter income $\bar{y}$. Differentiating the second equilibrium condition in equation (8) with respect to $\bar{y}$ gives $\frac{\partial}{\partial\bar{y}}h_j=\frac{1}{(1+\delta)^\theta}\frac{\partial}{\partial\bar{y}}g_j$, which shows that h_j and g_j move in the same direction as $\bar{y}$ changes. Suppose that h_j and g_j both decrease when $\bar{y}$ increases. Then, by the binding budget constraint condition, f_j has to increase. This implies that the marginal welfare of transfers, $1-[(1-\tau)\bar{y}+f_j]$ decreases. Then, so do the marginal utilities of consumption and investment spending with respect to $\bar{y}$. But that contradicts the presumption that h_j and g_j decrease. The implication is then that both h_j and g_j increase when $\bar{y}$ increases. As far as transfer promises f_i, these may either decrease or increase when $\bar{y}$ increases, as the budget constraint is relaxed. ■

Proof of Proposition 5. The comparative statics for the spending ratios with respect to voter trust γ and voter discounting δ follow directly from the comparative statics for spending levels from Proposition 4, which showed that lower trust γ is associated with higher equilibrium transfers f_j and lower public good spending h_j+g_j, thus the ratio $\frac{f_j}{h_j+g_j}$ is higher, while higher discounting is associated with higher transfers f_j and consumption spending h_j and lower investment spending g_j, thus the ratios $\frac{f_j}{h_j+g_j}$, $\frac{f_j+h_j}{g_j}$ are higher. ■

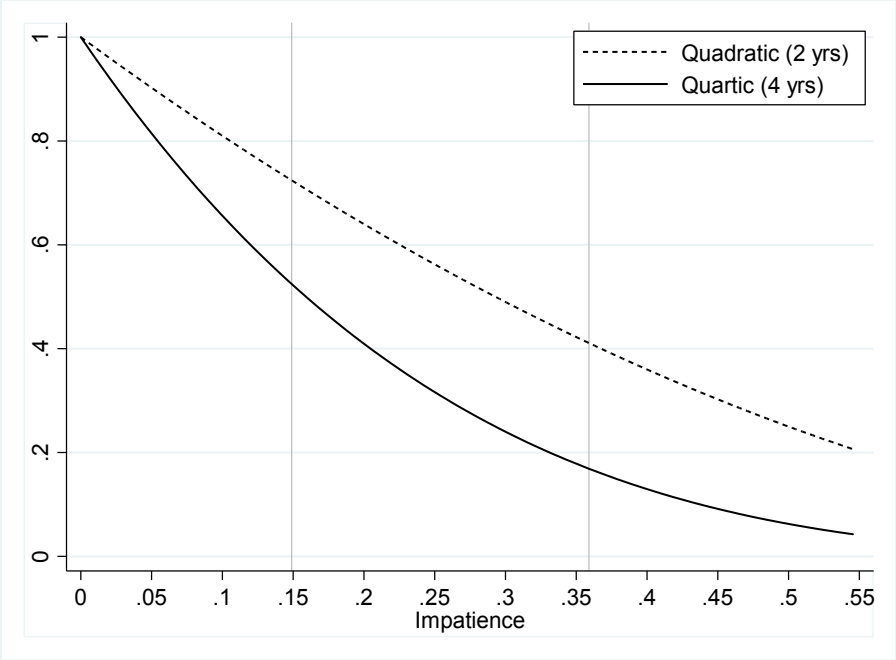
A2. Figures

Figure 1. Spending Preferences



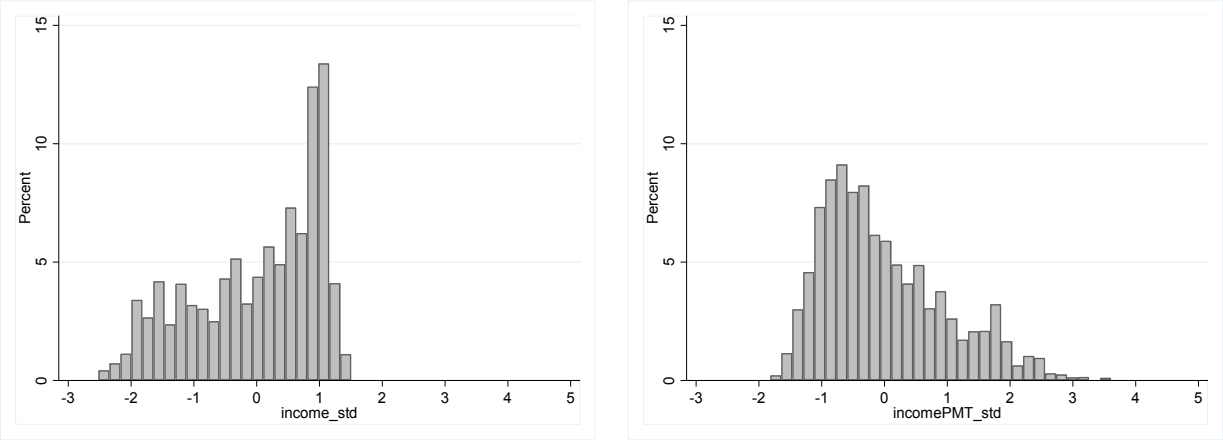
Note: Data are from the 2017 IDB-LAPOP Survey. Figures plot mean support for different types of spending in education and security, conditional discrete levels of mistrust and impatience. The corresponding regression results are in Tables 4, 5, and 6, respectively. Ranges around conditional means are 95 percent confidence intervals. Discrete categories for mistrust reflect the original survey coding. Discrete categories for impatience are: 1 (0-.15), 2 (.15-.30), 3 (.30-.45), 4 (.45-.55).

Figure 2. Discounted Utilities



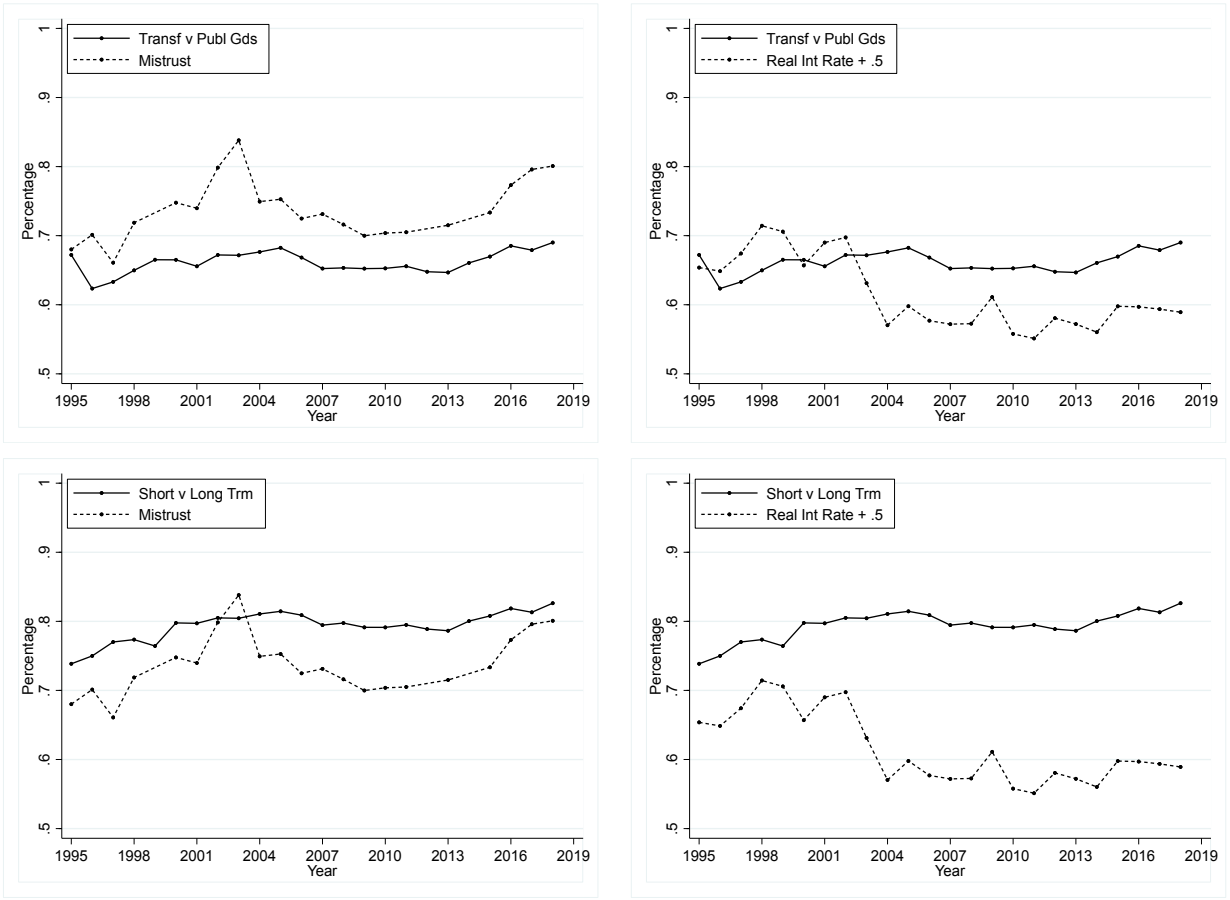
Note: The lower cutoff corresponds to a survey measure of discounting between 5-6, or an average future payout of 117.5 (interest rate 17.5 percent). The upper cutoff corresponds to a survey measure of discounting between 16-17, or an average future payout of 156 (interest rate 56 percent). Impatience is defined as 1-1/(1+r).

Figure 3. Income Reported and Income Estimated



Note: Figures plot the histograms of income reported in the IDB-LAPOP survey, on the left, and income estimated using Proxy Means Testing models for each country, on the right. Both income measures are standardized within each country. Sample sizes are 5,106 and 5,960, respectively.

Figure 4. Spending Outcomes



Note: Data are from the IMF WEO and Latinobarometro. Figures plot time series for the ratios of transfers to public goods and short term to long term spending, paired with time series for mistrust in parties and real interest rate as a proxy for impatience. The real interest rate series is shifted upward by 50 percentage points for easier visualization.

A3. Tables

Table 1. Individual-Level Sample

	Country	Areas	Nghbhoods	Individuals
Santiago	CHL	5	34	903
Bogota	COL	3	19	938
Tegucigalpa	HND	5	76	904
Mexico City	MEX	5	29	569
Panama	PAN	2	22	900
Lima	PER	5	35	925
Montevideo	URY	3	21	901
Total	7	28	236	6,040

Note: Table reports sample frequencies for the seven cities in the sample. Each city is divided into several areas, and these are further subdivided into neiborhoods. Tabulation based on the full sample collected for the 2017 IDB-LAPOP Survey.

Table 2. Country-Level Sample

Countries						Years	Country-Years
ARG	BOL	BRA	CHL	COL	CRI		
DOM	ECU	GTM	HND	MEX	NIC	1995-2018	432
PAN	PER	PRY	SLV	URY	VEN		

Note: Table reports the countries and years used to assemble the spending outcomes data. The panel is unbalanced due to missing observations on the included variables.

Table 3. Summary Statistics: Individual-Level Data

	Obs	Mean	Std Dev	Min	Max
Transf v Educ	5,847	0.757	0.429	0	1
Transf v Secur	5,735	0.606	0.489	0	1
Short v Long Educ	6,004	0.226	0.418	0	1
Short v Long Secur	5,913	0.452	0.498	0	1
Tablet v Teacher	5,967	0.355	0.479	0	1
Subsidy v Police	5,843	0.462	0.499	0	1
Tech v Teach	5,989	0.195	0.396	0	1
Hire v Train	5,919	0.627	0.484	0	1
Mistrust	5,994	0.707	0.289	0	1
Impatience	5,536	0.435	0.158	0.029	0.544
Interpers	5,984	0.575	0.494	0	1
Risk Avers	5,475	0.877	0.219	0	1
Educ Treatm	6,040	0.494	0.500	0	1
Secur Treatm	6,040	0.504	0.500	0	1
L Trust	5,994	0.806	0.396	0	1
H Trust	5,994	0.194	0.396	0	1
E Disc	5,536	0.840	0.366	0	1
M Disc	5,536	0.160	0.366	0	1
Income Survey	5,106	0.656	0.306	0	1
Income PMT	5,960	0.365	0.202	0.030	1
Education	5,997	11.212	4.089	0	24
Age	6,038	40.141	16.702	18	93
Male	6,040	0.502	0.500	0	1

Note: The unit of observation is an individual respondent. Statistics computed for the full sample of seven cities included in the IDB-LAPOP Survey. Sample size differs across variables due to incomplete or invalid responses to the respective survey question. See Section B4 of Appendix B for variable definitions and measurement.

Table 4. Spending Preferences: Transfers v. Public Goods

Dep Var:	*Transf v Educ*				*Transf v Secur*			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mistrust	.086***	.085***	.077***	.083***	.119***	.122***	.131***	.123***
	(.021)	(.023)	(.025)	(.023)	(.023)	(.026)	(.028)	(.027)
Impatience	.094**	.115***	.102**	.098**	.152***	.145***	.195***	.138***
	(.038)	(.041)	(.044)	(.040)	(.043)	(.044)	(.049)	(.043)
Income	–	–	−.049**	−.156***	–	–	−.067**	−.073*
			(.021)	(.039)			(.028)	(.042)
Education	–	–	−.000	.003	–	–	−.003	−.002
			(.002)	(.002)			(.002)	(.002)
Age	–	–	.001**	.001**	–	–	.000	.000
			(.000)	(.000)			(.000)	(.000)
Male	–	–	−.029**	−.028**	–	–	−.022	−.037***
			(.013)	(.012)			(.015)	(.014)
Fixed Effects	area	nghbhood	nghbhood	nghbhood	area	nghbhood	nghbhood	nghbhood
Clusters	–	236	235	236	–	236	235	236
Obs	5,344	5,344	4,563	5,248	5,246	5,246	4,499	5,151

Note: Data are from the 2017 IDB-LAPOP Survey. Table reports least squares coefficient estimates for models corresponding to equation (9) in the main text, given the dependent variable indicated in the table header. The dependent variables are dummy variables indicating a preference for government spending on transfers over public goods. Robust standard errors in parentheses, clustered at the neighborhood level where clusters are indicated. Columns (3),(7) use reported income; columns (4),(8) use estimated PMT income. * p <0.10, ** p <0.05, *** p <0.01.

Table 5. Spending Preferences: Short v. Long-Term Spending

Dep Var:	*Short v Long Educ*				*Short v Long Secur*			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mistrust	−.028	−.023	−.025	−.029	−.019	−.021	−.007	−.012
	(.020)	(.019)	(.021)	(.020)	(.023)	(.025)	(.027)	(.025)
Impatience	.088**	.085**	.074*	.074**	.118***	.099**	.095**	.100**
	(.035)	(.037)	(.040)	(.037)	(.042)	(.042)	(.045)	(.043)
Income	–	–	−.062***	−.056	–	–	−.111***	−.101**
			(.023)	(.038)			(.023)	(.042)
Education	–	–	−.007***	−.007***	–	–	−.009***	−.009***
			(.002)	(.002)			(.002)	(.002)
Age	–	–	−.000	.000	–	–	−.003***	−.002***
			(.000)	(.000)			(.000)	(.000)
Male	–	–	.009	.009	–	–	.054***	.047***
			(.013)	(.012)			(.015)	(.014)
Fixed Effects	area	nghbhood	nghbhood	nghbhood	area	nghbhood	nghbhood	nghbhood
Clusters	–	236	235	236	–	236	235	236
Obs	5,487	5,487	4,685	5,389	5,410	5,410	4,637	5,313

Note: Data are from the 2017 IDB-LAPOP Survey. Table reports least squares coefficient estimates for models corresponding to equation (9) in the main text, given the dependent variable indicated in the table header. The dependent variables are dummy variables indicating a preference for government spending on short-term over long-term projects. Robust standard errors in parentheses, clustered at the neighborhood level where clusters are indicated. Columns (3),(7) use reported income; columns (4),(8) use estimated PMT income. * p <0.10, ** p <0.05, *** p <0.01.

Table 6. Other Spending Preferences

Dep Var:	*Tablet v Teacher*				*Subsidy v Police*			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mistrust	−.093***	−.088***	−.085***	−.090***	.083***	.079***	.083***	.085***
	(.023)	(.024)	(.026)	(.024)	(.023)	(.028)	(.029)	(.028)
Impatience	.155***	.141***	.114**	.123**	.030	.024	.021	.035
	(.041)	(.048)	(.051)	(.049)	(.042)	(.040)	(.045)	(.040)
Income	–	–	−.059**	.009	–	–	−.080***	−.027
			(.030)	(.042)			(.029)	(.048)
Education	–	–	−.014***	−.015***	–	–	−.003	−.004*
			(.002)	(.002)			(.002)	(.002)
Age	–	–	−.001**	−.001**	–	–	−.002***	−.002***
			(.000)	(.000)			(.000)	(.000)
Male	–	–	−.011	−.015	–	–	−.038**	−.045***
			(.014)	(.012)			(.015)	(.014)
Fixed Effects	area	nghbhood	nghbhood	nghbhood	area	nghbhood	nghbhood	nghbhood
Clusters	–	236	235	236	–	236	235	236
Obs	5,457	5,457	4,662	5,362	5,350	5,350	4,581	5,255

Note: Data are from the 2017 IDB-LAPOP Survey. Table reports least squares coefficient estimates for models corresponding to equation (9) in the main text, given the dependent variable indicated in the table header. The dependent variables are dummy variables indicating a preference for government spending on purchasing tablets over training teachers (columns 1-4), and government subsidy for security over more resources for police (columns 5-8). Robust standard errors in parentheses, clustered at the neighborhood level where clusters are indicated. Columns (3),(7) use reported income; columns (4),(8) use estimated PMT income. * p <0.10, ** p <0.05, *** p <0.01.

Table 7. Education Experiment

	Dep Var: *Tech v Teach*					
	(1)	(2)	(3)	(4)	(5)	(6)
Treatm	−.033***	−.033***	−	−	−	−
	(.010)	(.010)				
Treatm × *L Trust*	−	−	−.022**	−.018	−.018	−.011
			(.011)	(.012)	(.013)	(.013)
Treatm × *H Trust*	−	−	−.076***	−.070**	−.091***	−.081***
			(.025)	(.027)	(.029)	(.027)
L Trust	−	−	−.086***	−.082***	−.085***	−.090***
			(.020)	(.020)	(.022)	(.021)
Impatience	−	−	−	−	−.026	−.009
					(.039)	(.037)
Income	−	−	−	−	−.066**	−.015
					(.027)	(.033)
Education	−	−	−	−	−.010***	−.011***
					(.002)	(.002)
Age	−	−	−	−	−.001***	−.001**
					(.000)	(.000)
Male	−	−	−	−	.064***	.051***
					(.012)	(.011)
Fixed Effects	city	area	area	nghbhood	nghbhood	nghbhood
Clusters	−	−	−	236	235	236
Equal Test (p-val)	−	−	.053	.064	.016	.016
Obs	5,989	5,989	5,945	5,945	4,664	5,366

Note: Data are from the 2017 IDB-LAPOP Survey. The treatment *Treatm* is a randomized informational message about the relative ineffectiveness of technology in education, compared to teaching. The dependent variable is a dummy variable indicating a preference for government spending on teaching technology over teacher training. Robust standard errors in parentheses, clustered at the neighborhood level where clusters are indicated. Column (5) uses reported income; column (6) uses estimated PMT income. * p <0.10, ** p <0.05, *** p <0.01.

Table 8. Security Experiment

	Dep Var: *Hire v Train*					
	(1)	(2)	(3)	(4)	(5)	(6)
Treatm	−.061***	−.061***	−	−	−	−
	(.012)	(.012)				
Treatm × *E Disc*	−	−	−.064***	−.065***	−.060***	−.065***
			(.014)	(.013)	(.015)	(.014)
Treatm × *M Disc*	−	−	−.114***	−.125***	−.135***	−.132***
			(.033)	(.031)	(.034)	(.031)
E Disc	−	−	.061**	.043**	.001	.017
			(.025)	(.022)	(.023)	(.021)
Mistrust	−	−	−	−	.017	.000
					(.025)	(.023)
Income	−	−	−	−	−.097***	−.174***
					(.027)	(.043)
Education	−	−	−	−	−.014***	−.013***
					(.002)	(.002)
Age	−	−	−	−	.000	.001
					(.000)	(.000)
Male	−	−	−	−	−.061***	−.061***
					(.014)	(.013)
Fixed Effects	city	area	area	nghbhood	nghbhood	nghbhood
Clusters	−	−	−	236	235	236
Equal Test (p-val)	−	−	.160	.072	.036	.045
Obs	5,919	5,919	5,449	5,449	4,643	5,326

Note: Data are from the 2017 IDB-LAPOP Survey. The treatment *Treatm* is a randomized contextual message indicating a two-year time horizon of achieving a given crime reduction with police training; the control group has a four-year time horizon. The dependent variable is a dummy variable indicating a preference for government spending on hiring more police over training the existing police. Robust standard errors in parentheses, clustered at the neighborhood level where clusters are indicated. Column (5) uses reported income; column (6) uses estimated PMT income. * p <0.10, ** p <0.05, *** p <0.01.

Table 9. Summary Statistics: Country-Level Data

	Obs	Mean	SD bw	SD wn	Min	Max
Transf v Publ Gds	337	0.663	0.087	0.053	0.326	0.868
Short v Long Trm	427	0.794	0.069	0.053	0.474	0.964
Mistrust	361	0.739	0.037	0.065	0.521	0.919
Real Int Rate	371	0.116	0.104	0.094	-0.353	0.939
Interpers	353	0.812	0.048	0.057	0.559	0.976
Interest Spread	371	0.120	0.088	0.065	0.014	0.634
GDP per Cap	432	10.802	4.567	2.149	2.913	22.874
Log Population	432	16.465	1.153	0.101	14.823	19.160
Unemployment	432	0.066	0.029	0.019	0.020	0.205
Election Year	432	0.229	0.036	0.419	0	1

Note: The unit of observation is a country-year. Statistics computed for the sample of eighteen countries included in the Latinobarometro surveys since 1995. Sample size differs across variables due to unavailable data in some years. See Section B4 of Appendix B for variable definitions and measurement.

Table 10. Spending Outcomes

Dep Var:	*Transf v Publ Gds*			*Short v Long Trm*		
	(1)	(2)	(3)	(4)	(5)	(6)
Mistrust	.166*	.203***	.178**	.157**	.170**	.159**
	(.085)	(.077)	(.090)	(.069)	(.067)	(.080)
Real Int Rate	.071**	.080**	.078**	.106***	.081**	.079**
	(.032)	(.039)	(.038)	(.031)	(.038)	(.038)
GDP per Cap	–	−.018***	−.017***	–	−.014***	−.013***
		(.003)	(.003)		(.003)	(.003)
Log Population	–	−.306**	−.339**	–	−.058	−.102
		(.132)	(.136)		(.129)	(.135)
Unemployment	–	–	.287*	–	–	.359**
			(.169)			(.168)
Election Year	–	–	.007	–	–	.010
			(.006)			(.006)
Country FE	15	15	15	16	16	16
Year FE	21	21	21	21	21	21
Adj R-sq	.750	.795	.797	.623	.664	.670
Obs	258	258	258	309	309	309

Note: Table presents least squares estimates of regression models with country and year fixed effects. Sample period is 1995-2018. Robust standard errors in parentheses. * p <0.10, ** p <0.05, *** p <0.01.

References

Acemoglu, D., and J.A. Robinson. 2006. *Economic Origins of Dictatorship and Democracy.* Cambridge, United Kingdom: Cambridge University Press.

Algan, Y., P. Cahuc, and M. Sangnier. 2016. "Trust and the Welfare State: The Twin Peaks Curve." *Economic Journal* 126(593): 861-883.

Ardanaz, M., and A. Izquierdo. 2017. "Current Expenditure Upswings in Good Times and Capital Expenditure Downswings in Bad Times? New Evidence from Developing Countries." Working Paper IDB-WP-838. Washington, DC, United States: Inter-American Development Bank.

Banerjee, A.V. et al. 2011. "Do Informed Voters Make Better Choices? Experimental Evidence from Urban India." Working paper. Cambridge, United States: Massachusetts Institute of Technology.

Besley, T., and T. Persson. 2009. "The Origins of State Capacity: Property Rights, Taxation, and Policy." *American Economic Review* 99(4): 1218–44.

Besley, T. and T. Persson. 2011. *Pillars of Prosperity: The Political Economics of Development Clusters*, Princeton, NJ: Princeton University Press.

Bursztyn, L. 2016. "Poverty and the Political Economy of Public Education Spending: Evidence from Brazil." *Journal of the European Economic Association* 14(5): 1101–1128.

Camussi, S., A.L. Mancini, and P. Tommasino. 2018. "Does Trust Influence Social Expenditures? Evidence from Local Governments." *Kyklos* 71(1): 59-85.

Dearmon, J., and R. Grier. 2011. "Trust and the Accumulation of Physical and Human Capital." *European Journal of Political Economy* 27(3): 507-519.

Drazen, A., and M. Eslava. 2010. "Electoral Manipulation Via Voter-Friendly Spending: Theory and Evidence." *Journal of Development Economics* 92(1): 39-52.

Engerman, S.L., and K.L. Sokoloff. 2000. "History Lessons Institutions, Factor Endowments, and Paths of Development in the New World." *Journal of Economic Perspectives* 14: 217–232.

Falk, A. et al. 2018. "Global Evidence on Economic Preferences." *Quarterly Journal of Economics* 133(4): 1645–1692.

Francois, P., and J. Zabojnik. 2005. "Trust, Social Capital, and Economic Development." *Journal of the European Economic Association* 3(1): 51-94.

Fujiwara, T. 2015. "Voting Technology, Political Responsiveness, and Infant Health: Evidence from Brazil." *Econometrica* 83: 423-464.

Guiso, L., P. Sapienza and L. Zingales. 2004. "The Role Of Social Capital in Financial Development." *American Economic Review* 94(3): 526-556.

Ismahan, M., and F.G. Ozkan. 2011. "The Political Economy of Public Spending Decisions and Macroeconomic Performance." *International Journal of Economic Perspectives* 5(2): 163–174.

Izquierdo, A., C. Pessino, and G. Vuletin, editors. 2018. *Better Spending for Better Lives*. Development in the Americas report. Washington, DC, United States: Inter-American Development Bank.

Jensen, R. 2010. "The (Perceived) Returns to Education and the Demand for Schooling." *Quarterly Journal of Economics* 125(2): 515-548.

Kaminsky, G., C. Reinhart, and C. Vegh. 2005. "When It Rains, It Pours: Procyclical Capital Flows and Macroeconomic Policies." In: M. Gertler and K. Rogoff, editors. *NBER Macroeconomics Annual 2004*. Volume 19. Cambridge, United States: MIT Press.

Keefer, P. 2007. "Clientelism, Credibility, and the Policy Choices of Young Democracies." *American Journal of Political Science* 51: 804-821.

Keefer, P., and R. Vlaicu. 2008. "Democracy, Credibility, and Clientelism." *Journal of Law, Economics, & Organization* 24(2): 371–406.

Keefer, P., and R. Vlaicu. 2017. "Vote Buying and Campaign Promises," *Journal of Comparative Economics* 45(4): 773-792.

Keefer, P., C. Scartascini, and R. Vlaicu. 2020. "Trust, Populism, and the Quality of Government." In: A. Bågenholm et al., editors. *Oxford Handbook of Quality of Government*, forthcoming.

Khemani, S. 2015. "Buying Votes versus Supplying Public Services: Political Incentives to Under-Invest in Pro-Poor Policies." *Journal of Development Economics* 117(C): 84-93.

Kuziemko, I. et al. 2015. "How Elastic Are Preferences for Redistribution? Evidence from Randomized Survey Experiments." *American Economic Review* 105(4): 1478-1508.

Lizzeri, A., and N. Persico. 2001. "The Provision of Public Goods under Alternative Electoral Incentives." *American Economic Review* 91(1): 225–39.

Lucas, R.E. 1978. "Asset Prices in an Exchange Economy." *Econometrica* 46(6): 1429-45.

Nunn, N.. and L. Wantchekon. 2011. "The Slave Trade and the Origins of Mistrust in Africa." *American Economic Review* 101(7): 3221-3252.

Nunn, N., N. Qian, and J. Wen. 2018. "Distrust and Political Turnover." NBER Working Paper 24187. Cambridge, United States: National Bureau of Economic Research.

Persson, T., and G. Tabellini. 2003. *The Economic Effects of Constitutions.* Cambridge,

United States: MIT Press.

Robinson, J.A., and R. Torvik. 2005. "White Elephants," *Journal of Public Economics* 89(2-3): 197-210.

Robinson, J.A., and T. Verdier. 2013. "The Political Economy of Clientelism." *Scandinavian Journal of Economics* 115: 260-291.

Scartascini, C., and W.M. Crain. 2002. "The Size and Composition of Government Spending in Multi-Party Systems." Working paper 02-23. Fairfax, United States: George Mason University.

Shi, M., and J. Svensson. 2006. "Political Budget Cycles: Do They Differ Across Countries and Why?" *Journal of Public Economics* 90(8–9): 1367-1389.

Zak, P.J., and S. Knack. 2001. "Trust and Growth." *Economic Journal* 111(470): 295-321.

Appendix B (For Online Publication)

B1. Tables

Table B1: Summary Statistics: PMT Variables

	Obs	Mean	Std Dev	Min	Max
Car	6,022	0.333	0.471	0	1
Motorbike	6,020	0.129	0.335	0	1
Fridge	6,022	0.927	0.260	0	1
Microwave	6,019	0.631	0.483	0	1
Dishwasher	6,016	0.156	0.363	0	1
Dryer	6,022	0.187	0.390	0	1
Washer	6,017	0.771	0.420	0	1
Computer	6,016	0.611	0.488	0	1
Internet	6,018	0.637	0.481	0	1
TV	6,018	0.972	0.164	0	1
Cable	6,015	0.719	0.449	0	1
Telephone	6,018	0.519	0.500	0	1
Cellphone	6,021	0.905	0.294	0	1
Bathroom	6,023	0.903	0.296	0	1
Tap Water	6,031	0.970	0.171	0	1
Educ Head	6,040	11.044	4.368	0	24

Note: The sample consists of 6,040 individuals from seven countries included in the IDB-LAPOP Survey. Sample size differs across variables due to incomplete or invalid responses to the respective survey question.

Table B2: Proxy Means Testing (PMT) Income Estimation

Dep Var:	*Log Total Income*						
	CHL	COL	HND	MEX	PAN	PER	URY
Car	.516***	.566***	.384***	.342***	–	.323***	.409***
	(.015)	(.039)	(.069)	(.026)		(.027)	(.009)
Motorbike	–	–	.159**	–	–	.115**	.079***
			(.068)			(.049)	(.011)
Fridge	–	.181***	.166**	.184***	.213**	.285***	.234***
		(.039)	(.083)	(.042)	(.099)	(.030)	(.045)
Microwave	–	.181***		.088***		.066***	.136***
		(.034)		(.026)		(.023)	(.010)
Dishwasher	–	–	–	–	–	–	.346***
							(.019)
Dryer	–	–	–	–	–	–	.185***
							(.013)
Washer	–	.178***	–	.155***	–	.136***	.127***
		(.036)		(.030)		(.024)	(.013)
Computer	.210***	.137***	.243***	.275***	.254***	.220***	.071***
	(.017)	(.035)	(.067)	(.030)	(.051)	(.025)	(.012)
Internet	.159***	.144***	–	.152***	.140**	.270***	.132***
	(.024)	(.037)		(.036)	(.067)	(.027)	(.013)
TV	–	–	–	–	–	.507***	.129***
						(.065)	(.027)
Cable	.277***	.079**	.224**	.158***	.232***	.164***	.217***
	(.017)	(.034)	(.092)	(.026)	(.046)	(.023)	(.009)
Telephone	.130***	.168***	.285***	.082**	.345***	.049*	.162***
	(.015)	(.034)	(.064)	(.031)	(.050)	(.026)	(.011)
Cellphone	.235***	.301***	.385*	.349***	.291***	.534***	.069***
	(.063)	(.109)	(.224)	(.036)	(.086)	(.049)	(.018)

(continued on the next page)

(continued from the previous page)

Bathroom	–	.192***	–	–	.109*	.099**	.342***
		(.044)			(.064)	(.042)	(.024)
Tap Water	.195***	.473***	.499**	.075**	.182**	−.063	–
	(.053)	(.057)	(.231)	(.032)	(.071)	(.040)	
Educ Head	.059***	.036***	.035***	.026***	.047***	.030***	.050***
	(.002)	(.003)	(.007)	(.003)	(.006)	(.003)	(.001)
Adj R-sq	.419	.448	.328	.429	.242	.433	.506
Obs	9,799	2,382	752	3,118	1,624	5,391	22,717

Note: Robust standard errors in parentheses. Each column reports the coefficient estimates of a step-wise regression of household-level log total income on several household assets. The p-value threshold for a variable's inclusion in the second step was 0.15. All models include a constant, not reported. Data comes from national household surveys of each country, reported at the individual level. Data sources for each column are as follows: CHL - CASEN 2017, COL - GEIH 2017, HND - EPHPM 2017, MEX - ENIGH 2016, PAN - EHPM 2017, PER - ENAHO 2017, URY - ECH 2017. * p <.10, ** p <.05, *** p<.01.

Table B3: Falsification Tests: Transfers v Public Goods

Dep Var: *Transf v Educ*							
	(1)		(2)		(3)		(4)
Mistrust	.083***	*Interpers*	.018	*Mistrust*	.088***	*Interpers*	.023*
	(.023)		(.012)		(.023)		(.012)
Impatience	.098**	*Impatience*	.104**	*Risk Avers*	.006	*Risk Avers*	.016
	(.040)		(.040)		(.027)		(.027)
Obs	5,248		5,249		5,192		5,189
Dep Var: *Transf v Secur*							
	(1)		(2)		(3)		(4)
Mistrust	.123***	*Interpers*	.038***	*Mistrust*	.127***	*Interpers*	.039***
	(.027)		(.014)		(.027)		(.014)
Impatience	.138***	*Impatience*	.142***	*Risk Avers*	.041	*Risk Avers*	.051
	(.043)		(.045)		(.033)		(.034)
Obs	5,151		5,149		5,097		5,091

Note: Column (1) in both panels reiterate the preferred specifications from columns (4) and (8) of Table 4 in the main text. Columns (2)-(4) replace the main explanatory variables *Mistrust* and *Impatience* with the related variables *Interpers* and *Risk Avers*, as indicated, but keeps the rest of the model specification intact. * p <.10, ** p <.05, *** p<.01.

Table B4: Falsification Tests: Short v Long Term Spending

Dep Var: *Sh v Lg Educ*								
	(1)		(2)		(3)		(4)	
Mistrust	−.029	*Interpers*	.021*	*Mistrust*	−.033*	*Interpers*	.019*	
	(.020)		(.011)		(.019)		(.011)	
Impatience	.074**	*Impatience*	.068*	*Risk Avers*	−.006	*Risk Avers*	−.006	
	(.037)		(.037)		(.029)		(.029)	
Obs	5,389		5,383		5,326		5,316	
Dep Var: *Sh v Lg Secur*								
	(1)		(2)		(3)		(4)	
Mistrust	−.012	*Interpers*	.015	*Mistrust*	−.011	*Interpers*	.013	
	(.025)		(.014)		(.025)		(.014)	
Impatience	.100**	*Impatience*	.103**	*Risk Avers*	−.002	*Risk Avers*	.003	
	(.043)		(.043)		(.032)		(.033)	
Obs	5,313		5,307		5,254		5,244	

Note: Column (1) in both panels reiterate the preferred specifications from columns (4) and (8) of Table 5 in the main text. Columns (2)-(4) replace the main explanatory variables *Mistrust* and *Impatience* with the related variables *Interpers* and *Risk Avers*, as indicated, but keeps the rest of the model specification intact. * p <.10, ** p <.05, *** p<.01.

Table B5: Falsification Tests: Other Spending Preferences

Dep Var: *Tablet v Teacher*								
	(1)		(2)		(3)		(4)	
Mistrust	−.090***	*Interpers*	−.025*	*Mistrust*	−.085***	*Interpers*	−.030**	
	(.024)		(.014)		(.024)		(.014)	
Impatience	.123**	*Impatience*	.119**	*Risk Avers*	−.053	*Risk Avers*	−.063*	
	(.049)		(.048)		(.033)		(.034)	
Obs	5,362		5,356		5,297		5,287	
Dep Var: *Subsidy v Police*								
	(1)		(2)		(3)		(4)	
Mistrust	.085***	*Interpers*	.019	*Mistrust*	.084***	*Interpers*	.023*	
	(.028)		(.013)		(.029)		(.013)	
Impatience	.035	*Impatience*	.037	*Risk Avers*	.027	*Risk Avers*	.034	
	(.040)		(.040)		(.027)		(.027)	
Obs	5,255		5,250		5,187		5,178	

Note: Column (1) in both panels reiterate the preferred specifications from columns (4) and (8) of Table 6 in the main text. Columns (2)-(4) replace the main explanatory variables *Mistrust* and *Impatience* with the related variables *Interpers* and *Risk Avers*, as indicated, but keeps the rest of the model specification intact. * p <.10, ** p <.05, *** p<.01.

Table B6: Falsification Tests: Spending Outcomes

Dep Var: *Transf v Publ Gds*							
	(1)		(2)		(3)		(4)
Mistrust	.178**	*Interpers*	.004	*Mistrust*	.193**	*Interpers*	−.002
	(.090)		(.055)		(.088)		(.055)
Real Int Rate	.078**	*Real Int Rate*	.087**	*Interest Spread*	−.041	*Interest Spread*	−.039
	(.038)		(.040)		(.071)		(.071)
Obs	258		256		258		256

Note: Column (1) copies the preferred specifications from column (3) of Table 10 in the main text. Columns (2)-(4) replace the main explanatory variables *Mistrust* and *Real Int Rate* with the related variables *Interpers* and *Interest Spread*, as indicated, but keeps the rest of the model specification unchanged. * p <.10, ** p <.05, *** p<.01.

Table B7: Falsification Tests: Spending Outcomes

Dep Var: *Short v Long Trm*							
	(1)		(2)		(3)		(4)
Mistrust	.159**	*Interpers*	.068	*Mistrust*	.165**	*Interpers*	.068
	(.080)		(0.055)		(.081)		(.055)
Real Int Rate	.079**	*Real Int Rate*	.087**	*Interest Spread*	−.015	*Interest Spread*	.012
	(.038)		(.038)		(.052)		(.054)
Obs	309		302		309		302

Note: Column (1) copies the preferred specifications from column (6) of Table 10 in the main text. Columns (2)-(4) replace the main explanatory variables *Mistrust* and *Real Int Rate* with the related variables *Interpers* and *Interest Spread*, as indicated, but keeps the rest of the model specification unchanged. * p <.10, ** p <.05, *** p<.01.

B2. Variable Definitions and Sources

Individual-Level

Transf v Educ: Dummy variable that indicates the respondent's preference for lower taxes so families can have more disposable income to spend on education versus higher taxes so the government can invest more in education. *Scale*: 0,1. *Source*: IDB-LAPOP Survey, Question I_F9.

Transf v Secur: Dummy variable that indicates the respondent's preference for lower taxes so families can have more disposable income to spend on their own security versus higher taxes so the government can invest in police and the judicial system. *Scale*: 0,1. *Source*: IDB-LAPOP Survey, Question I_G7.

Short v Long Educ: Dummy variable proxying for the respondent's preference for government spending on education solutions other than teacher training. *Scale*: 0,1. *Source*: IDB-LAPOP Survey, Question I_F10.

Short v Long Secur: Dummy variable that indicates the respondent's preference for government spending on police hiring versus spending on police training. *Scale*: 0,1. *Source*: IDB-LAPOP Survey, Question I_G2A.

Tablet vs Teacher: Dummy variable that indicates the respondent's preference for government spending on buying tablets for students instead of teacher training that takes three years. *Scale*: 0,1. *Source*: IDB-LAPOP Survey, Question I_F6.

Subsidy v Police: Dummy variable that indicates the respondent's preference for subsidies to citizens to contract private security over government spending to increase police resources. *Scale*: 0,1. *Source*: IDB-LAPOP Survey, Question I_G1.

Tech v Teach: Dummy variable that indicates the respondent's preference for government spending on tablets and computers over government spending on teacher training. *Scale*: 0,1. *Source*: IDB-LAPOP Survey, Questions I_F4A and I_F4B.

Hire vs. Train: Dummy variable that indicates the respondent's preference for government spending on police hiring versus spending on police training. *Scale*: 0,1. *Source*: IDB-LAPOP Survey, Questions I_G2BA and I_G2BB.

Mistrust: Four-category variable measuring the respondent's disagreement with the proposition that politicians do what they promise, normalized to the unit interval. *Scale*: discrete [0,1]. IDB-LAPOP Survey, Question I_A3_1.

Impatience: Defined as $1 - 1/(1 + r_i)$, where the interest rate r_i is individual i's personal measure of the tradeoff between an immediate payment of 100 units against a delayed

payment of $100(1 + r_i)$. Based on a sequence of questions using the staircase methodology proposed by Falk et al. (2018) that yield 32 categories of patience. *Scale*: continuous [0,1]. *Source*: Authors' calculations based on IDB-LAPOP Survey, Questions I_D2_1-I_D2-31.

Interpers: Dummy variable measuring the respondent's disagreement with the proposition that the majority of people are trustworthy. *Scale*: 0,1. IDB-LAPOP Survey, Question I_A3_1.

Risk Aversion: Defined as the respondent's personal measure of the tradeoff between a fifty-fifty lottery betwen 300 units and zero units, against a sure payment of x_i units, which is determined through a sequence of questions using the staircase methodology proposed by Falk et al. (2018) that yield 32 categories of risk aversion. Normalized to the unit interval. *Scale*: continuous [0,1]. *Source*: IDB-LAPOP Survey, Questions I_E1-I_E31.

Educ Treatm: Dummy variable indicating that the respondent received the informational message in the education experiment. *Scale*: 0,1. *Source*: IDB-LAPOP Survey, Questions I_F4A and I_F4B.

Secur Treatm: Dummy variable indicating that the respondent received the short time horizon treatment in the security experiment. *Scale*: 0,1. *Source*: IDB-LAPOP Survey, Questions I_G2BA and I_G2BB.

L Trust: Dummy variable indicating that the respondent answered "not very common" or "not at all common" to the question how common is it that politicians do what they promise. *Scale*: 0,1. IDB-LAPOP Survey, Question I_A3_1.

H Trust: Dummy variable indicating that the respondent answered "very common" or "somewhat common" to the question how common is it that politicians do what they promise. *Scale*: 0,1. IDB-LAPOP Survey, Question I_A3_1.

E Disc: Dummy variable indicating that the respondent has a discount rate lower than 17.5 percent or higher than 56 percent. *Scale*: 0,1. *Source*: IDB-LAPOP Survey, Questions I_D2_1-I_D2-31.

M Disc: Dummy variable indicating that the respondent has a discount rate between 17.5 percent and 56 percent. *Scale*: 0,1. *Source*: IDB-LAPOP Survey, Questions I_D2_1-I_D2-31.

Income Survey: Income bracket for the respondent's household income, top-coded. *Scale*: 1, 2,..., 16. *Source*: IDB-LAPOP Survey, Question I_O4.

Income PMT: Estimated household income based on a Proxy Means Testing (PMT) Model, normalized to the unit interval. *Scale*: continuous [0,1]. *Source*: Authors' calculations based on IDB-LAPOP Survey and national househod surveys. See Tables A1-A2 for

details.

Education: Integer variable recording the reported years of education. *Scale*: 0, 1,..., 24. *Source*: IDB-LAPOP Survey, Question ED2.

Age: Integer recording age reported by the individual in the survey. *Scale*: 18, 19,... *Source*: IDB-LAPOP Survey, Question Q2.

Male: Indicator variable that takes the value one if the individual reports being a male, zero otherwise. *Scale*: 0,1. *Source*: IDB-LAPOP Survey, Question Q1.

Country-Level

Transf v Publ Gds: Fractional variable measuring the percentage of general government current expense other than goods and services and interest payments, divided by the sum of current and capital spending excluding interest payments. *Scale*: continuous [0,1]. *Sources*: Kaminsky, Reinhart, and Vegh (2004) and IMF-WEO 2019.

Short v Long Trm: Fractional variable measuring the percentage of general government total current expense excluding interest payments, divided by the sum of current and capital spending excluding interest payments. *Scale*: continuous [0,1]. *Sources*: Kaminsky, Reinhart, and Vegh (2004) and IMF-WEO 2019.

Mistrust: Average respondent trust in political parties, by country. Responses were normalized to unit interval. Higher values mean lower levels of trust. *Scale*: continuous [0,1]. *Source*: Latinobarometro 1995-2018.

Real Interest Rate: Average yearly lending interest rate adjusted by the GDP deflator. *Scale*: continuous. *Source*: World Bank-WDI 2019.

Interpers: Average respondent mistrust in other people, by country. Responses were normalized to unit interval. The original individual-level measure is a dummy variable. *Scale*: continuous [0,1]. *Source*: Latinobarometro 1995-2018.

Interest Spread: Average yearly difference between the lending interest rate and the deposit interest rate. *Scale*: continuous. *Source*: World Bank-WDI 2019.

GDP per Capita: Gross domestic product converted to international dollars using purchasing power parity rates, in ten thousand 2011 dollars. *Scale*: positive continuous. *Source*: World Bank-WDI 2019.

Log Population: Logarithm of the midyear estimate of the total de facto population. *Scale*: positive continuous. *Source*: World Bank-WDI 2019.

Unemployment: Percent of total labor force unemployed, modeled ILO estimate. *Scale*:

continuous [0,1]. *Source*: World Bank-WDI 2019.

Election Year: Indicator variable that takes the value one in a general election year. *Scale*: 0,1. *Sources*: IDB - Database of Political Institutions 2017, extended to 2018 using online sources.