

# Building the Modern State in Developing Countries: Perceptions of Public Safety and (Un)Willingness to Pay Taxes in Mexico

Gustavo Flores-Macías  
Cornell University  
gaf44@cornell.edu

Mariano Sánchez-Talanquer  
Center for Research and Teaching in  
Economics (CIDE)  
m.sancheztalanquer@cide.edu

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## Abstract

What is the relationship between taxation and public safety? Contrary to studies suggesting that both personal victimization and heightened perceptions of insecurity increase pro-social attitudes and support for state intervention in the form of greater taxation, we argue that concern for crime decreases people's willingness to pay taxes to address public safety. Based on an original nationally representative survey conducted in Mexico, and relying on the contingent valuation method to assess the value of non-market goods, we estimate the amount citizens are willing to pay for reductions in crime. We also find that attitudes toward taxation respond to subjective, sociotropic assessments about public safety conditions, rather than the actual risk or occurrence of individual victimization. Our findings run counter to the conventional wisdom that demand for personal security enables greater extraction, a central proposition in classic accounts of state-building. By showing that the inclination to accept heavier taxation may be the weakest precisely among those who perceive the gravest need for security, the study adds precision to theories of fiscal exchange.

Keywords: taxes, public safety, crime, perceptions, victimization, Mexico, contingent valuation, willingness to pay, state capacity

## Bios

Gustavo Flores-Macías is Associate Professor of Government and Associate Vice Provost for International Affairs at Cornell University. He is the author of *After Neoliberalism? The Left and Economic Reforms in Latin America* (Oxford University Press 2012), which received the Latin American Studies Association's Tomassini Book Award, and the editor of *The Political Economy of Taxation in Latin America* (Cambridge University Press 2019).

Mariano Sánchez-Talanquer is Assistant Professor in the Department of Politics at the Centro de Investigación y Docencia Económicas (CIDE) in Mexico City, and an Academy Scholar at the Harvard Academy for International and Area Studies. His Ph.D. dissertation received the 2018 William Anderson Award to the best dissertation in the general field of federalism or intergovernmental relations, state and local politics from the American Political Science Association (APSA).

What is the relationship between taxation and the provision of law and order? The literature on state capacity has long regarded both as crucial and tightly linked features of strong states: in order to extract revenue from the population, rulers accommodated the demand for public safety, among other public goods.<sup>1</sup> Concerns over security were therefore at the core of popular consent to a stronger fiscal state.

However, the nature of this relationship has been typically examined at the macro-level and overlooked in contemporary contexts. While a link between protection and taxes might have emerged in the early state-building period, we know little about how it operates both at the individual or micro-level and in modern settings. Further, although the literature has often relied on both taxation and the rule of law as indicators of capacity,<sup>2</sup> they are commonly treated either in isolation or bulked together as co-varying dimensions of the same concept. The result has been a muddling of the two and a lack of nuance in our understanding of how one might affect the other.

In this article we advance our understanding of this relationship by examining the effect of victimization and concern for crime on individuals' willingness to shoulder a greater tax burden to address insecurity. We evaluate this relationship relying on original data from a nationally-representative survey fielded in Mexico, one of the countries in Latin America with the lowest fiscal extraction and experiencing the wave of citizen insecurity that has plagued many democracies in the region. Drawing on the contingent valuation (CV) method—a technique to assess the value of non-market goods such as public safety—we first estimate the size of the fiscal sacrifice citizens are willing to make for a 30% reduction in crime. We then investigate the sources of individual-level variation in willingness to pay taxes (WTP) in exchange for such improvement in security conditions.

We show that concern for crime *decreases* individuals' willingness to contribute taxes, rather than expanding the margin for state extraction. We also find that attitudes toward increased taxation respond to subjective assessments about public safety conditions in society at large, not to personal experiences or the actual risk of victimization where citizens live. We suggest that these results emerge because perceptions of public safety in the country as a whole are connected to evaluations of state performance and complicity with crime, which play a critical role in the formation of attitudes toward taxation.

The theoretical argument and evidence in this article suggest that influential models of preference formation in advanced democracies, as well as findings regarding the effects of victimization and fear of crime in other contexts, may not apply to developing countries. First, our findings run counter to the conclusion that individual risk exposure is a strong motivation for more statist attitudes, including support for increased tax revenues.<sup>3</sup> This logic has been prevalent in political-economic models and underlies recent arguments about the effects of individual concern with potential crime victimization on policy preferences in the developed world.<sup>4</sup>

Second, the results also contrast with approaches that suggest that exposure to crime and violence predisposes citizens to act more civically.<sup>5</sup> At least in the domain of taxation, an important dimension of civic behavior, we do not find evidence in this direction. Instead, the evidence is consistent with a fiscal-contract view of state-society relations<sup>6</sup> and with models of preference formation that emphasize sociotropic considerations—those focusing on society rather than the individual's immediate community—in a range of policy domains.<sup>7</sup>

The article makes three main contributions. First, it documents for the first time how the provision of public safety and taxation interact at the level of individual preferences. By showing that citizens' willingness to comply with the state's fiscal demands is a function of subjective

sociotropic concern for crime, our findings add precision to macro-level theories of fiscal exchange, which posit a link between public goods provision and tax compliance but without specifying whether citizens respond to personal experience or collective considerations. Our main finding also underscores that the link between demand for protection and extraction, central to classic accounts of state-building, is far from automatic. Indeed, it runs counter to the conventional wisdom that the sense of insecurity leads individuals to consent to the state's fiscal extraction—a central component of the state's ability to provide public goods in general and social welfare policies in particular. We instead show that inclination to accept heavier taxation may be the weakest precisely among those who perceive the gravest need for security. This result specifies the role of mass attitudes in perpetuating a vicious cycle of poor security provision and low taxation and calls for further investigating how and when governing elites may build support for the tax state where citizens perceive widespread insecurity.

Second, the findings shed light on the formation of mass attitudes in crime-ridden democracies run by weak states, which are common in less-developed parts of the world. In contrast to what scholars working in advanced democracies have found, more concern for insecurity can make individuals less likely to support government-led intervention that entails higher taxation. Understanding when citizens consent to taxation and how they form opinions about policy in contexts of violence and insecurity is important for devising strategies to increase the capacities of states, including those necessary to provide social welfare policies. Our results suggest that citizens' evaluations of state performance and integrity are an important variable that must be incorporated in models of the formation of policy preferences.

Third, to our knowledge, this paper is the first to estimate willingness to pay for improvements in public safety in the developing world using the double-bounded contingent valuation model.<sup>8</sup> There is little research conducted in the developing world on WTP taxes for

public goods, and even less following best practices related to CV methods.<sup>9</sup> Yet understanding variation in citizens' willingness to bear a heavier tax burden in order to improve public safety is a pressing question in crime-ridden regions like Latin America. The findings both constitute a first step in identifying the terms of trade in the taxpayer-government relationship, and provide a potential blueprint for policymakers to increase fiscal extraction and, in turn, improve the provision of public goods.

In the following pages we first discuss competing theoretical approaches about the potential effects of crime and insecurity on willingness to shoulder a heavier tax burden, and present our argument that concern for nationwide insecurity is likely to *decrease* WTP. Second, we introduce the CV method along with the survey data and brief background on the Mexican case. Third, we estimate WTP taxes for public safety. In the fourth section we test the consequences of exposure to crime and subjective crime concerns on willingness to pay taxes, and in the fifth we discuss the results. We conclude by discussing implications for theory and policy.

### **Effects of insecurity on tax attitudes**

We evaluate two competing views about the effects of insecurity on citizens' willingness to accept higher taxation in exchange for improved public safety. Given that the relationship between order and taxation in mass opinion has received little attention, our research offers an opportunity to extend existing theoretical frameworks about the origins of political attitudes and adjudicate between their competing implications.

We begin by discussing prevailing theoretical approaches that would expect personal victimization and feelings of insecurity to increase support for state taxation to improve the provision of security. We then present our own argument for why, in contrast with these

expectations, concern for crime erodes consent to additional taxation, and why these attitudes are likely to respond to sociotropic considerations about public safety conditions for society at large.

### *Crime as a catalyst for fiscal engagement*

Two strands of research expect willingness to pay taxes for reducing insecurity to increase with crime. The first has examined how individual exposure to different types of risk shapes policy attitudes in advanced democracies and, in turn, the demands citizens make from the state.<sup>10</sup> According to this line of research, feelings of vulnerability lead people to look to the state to provide protection and buffer risk. Worries about insecurity have been found to increase support for government action and tax-funded social welfare even after controlling for traditional determinants of policy preferences like partisanship or ideological predispositions. As Hacker, Rehm, and Schlesinger suggest, “insecurity systematically and substantially affects citizens’ attitudes toward government’s role [...] with worries and shocks creating greater support for government policies that buffer the relevant economic risk.”<sup>11</sup> Mass public attitudes and demands for social protection, in turn, affect the content and generosity of policies implemented by the state.<sup>12</sup>

Although most of this literature has focused on understanding the effects of economic shocks and labor market risk on citizens’ social policy and redistribution preferences, its underlying logic has been increasingly applied to risk associated with crime. As authors working in this theoretical framework recognize, “insecurity is a reflection of multiple, intersecting risks,” and thus an “important step is to broaden the range of economic risks examined.”<sup>13</sup> Indeed, fear of crime resembles the kind of risks that have been found to increase support for state action in important ways.<sup>14</sup> In addition to physical and psychological consequences, crime can produce serious economic dislocations, thus potentially triggering similar attitudes favoring state

involvement to ameliorate risk. Consistent with this approach to the effects of risk exposure on political attitudes, Rueda and Stegmueller find that the greater the perceived risk of becoming victims of crime, the higher the support for government redistribution among the wealthy in Western Europe.<sup>15</sup> The rationale is that although redistribution involves heavier taxation, it is a means to mitigate the risk of crime.

Classic accounts of state-building also draw a connection between demand for personal security and consent to the tax state. Reviewing the literature on the rise of modern states, Hoffman writes that “if we look at particular examples of how significant permanent taxation was established, they do usually involve warfare and the public good of security”, as “suppressing the brigandage required peacetime taxation.”<sup>16</sup> Again, it is the sense of widespread insecurity that, in Hobbesian fashion, predisposes individuals to make sacrifices for the sake of protection, including handing part of their wealth to the state. The link between insecurity and willingness to pay taxes is a central piece of historical narratives on the rise of the state.

More contemporary studies on insecurity and support for state protection have typically focused on the developed world,<sup>17</sup> where institutional conditions potentially affecting the formation of public opinion may differ in important ways. However, a second body of research focusing on developing countries also suggests that crime, and in particular personal victimization, could increase the willingness to sacrifice resources in order to address insecurity. Several scholars have argued that crime victimization and personal exposure to violence lead to pro-social behavior and greater engagement in the civic and political spheres. The link has been found both during peacetime and wartime. For example, Bellows and Miguel, Blattman, and Voors et al have found a positive effect of victimization on individuals’ civic and political participation in conflict settings.<sup>18</sup> Other studies point to similar salutary effects among

communities that have experienced war-time violence, including greater levels of social capital and cohesion, altruism, and political participation.<sup>19</sup>

Outside of conflict settings, similar results have been found with exposure to crime. In a study based on survey data from across the world, Bateson finds that “rather than becoming withdrawn or disempowered, crime victims tend to become more engaged in civic and political life.”<sup>20</sup> The associations are of such magnitude that victimization “ranks among the most influential predictors of civic engagement and political participation.”<sup>21</sup> Citing both instrumental and expressive motivations, the study suggests that personal experiences with crime lead to higher levels of participation in the public sphere, as reflected in interest in politics, the frequency of conversations about politics, attendance at municipal or city council meetings, or attendance at political party meetings.

In essence, this body of research points to the activation of a desire to effect positive social change through political and civic participation after a negative experience with crime or violence.<sup>22</sup> Rather than leading to apathy or disengagement, victimization is found to predispose individuals to cooperate in eliciting solutions to common problems.

To our knowledge, while the link between attitudes toward crime/violence and social policy provision has received growing attention,<sup>23</sup> studies have not directly examined the consequences of exposure to crime or violence on tax attitudes. Studies in this body of research have focused on a wide variety of forms of civic and political engagement, but they have remained silent about the quintessential civic duty and form of social cooperation in modern societies: paying taxes.

States are the primary providers of essential public goods throughout the world, and their ability to effectively deliver these services rests heavily on their access to fiscal revenue. In this sense, paying taxes can be said to be a more basic and consequential form of civic behavior than



some of the activities examined by the literature. Thus, if victimization triggers civic commitment and willingness to sacrifice time and resources to solve collective problems,<sup>24</sup> as well as support for welfare state policies,<sup>25</sup> it can be expected to elicit consent to taxation aimed at reducing crime.

In short, the risk mitigation literature suggests that subjective concern with crime is likely to translate into policy attitudes favoring greater state protection, even at the cost of higher taxes. Although the risk mitigation literature points specifically to state involvement through redistribution as a way to address crime, it can inform expectations about attitudes toward state protection through taxation more generally. Meanwhile, research on the effects of victimization posits that personal experiences with crime raise political awareness, cooperative social behavior, and civic commitment to the public good. Although it has not been directly tested, under this logic victimization can be expected to generate more favorable attitudes toward taxation to address crime, out of the desire to induce change.

#### *The Argument: sociotropic perceptions of crime as a catalyst for fiscal disengagement*

Whereas this pro-engagement effect of crime would go a long way to address social problems by making people part of the solution, we argue instead that concern for crime erodes taxpayer consent. In particular, we theorize that sociotropic concerns for crime, rather than personal experiences or perceptions of local-level crime, determine attitudes toward taxation, with a negative influence on willingness to contribute.

As Castañeda, Levi, Mahon Jr., Moore, and others have argued, there is an expectation that comes with handing over part of one's wealth to the government.<sup>26</sup> When individuals perceive their taxes to be at work, they may feel they are getting a fair fiscal exchange.<sup>27</sup> Accordingly, government effectiveness in spending taxpayers' resources to achieve stated goals

has been associated with citizens' support for taxation.<sup>28</sup> It follows that individuals who feel shortchanged in the exchange will likely be less supportive of increases in the tax burden.

We build on these studies but add theoretical precision to models of fiscal exchange by specifying the process by which crime concerns shape tax attitudes at the individual level. We argue that citizens resort to assessments of state performance and integrity in order to form attitudes about taxes. In other words, they evaluate the extent to which governments have delivered their part of the bargain and translate these views into tax preferences. Insofar as negative perceptions of public safety indicate poor performance in the state's primordial task, be it because of organizational deficiencies or outright complicity with criminal actors, they predispose citizens against bearing a heavier fiscal burden.<sup>29</sup> Our view is therefore consistent with a fiscal contract perspective in which citizen compliance with political rule and concomitant tax obligations is a product of the state's ability to credibly commit to use resources for the public good, which in turn depends on past performance—a sustained political bargain between governments and citizens.

Rather than crime eliciting greater civic engagement to address risk through government solutions—as the risk management literature has found in the developed world—individuals would rather not commit additional tax resources toward state institutions considered ineffective or corrupt. Similarly, rather than experience with crime leading to pro-social behavior, as the literature on violence and political participation<sup>30</sup> and post-traumatic growth theory would suggest,<sup>31</sup> crime can be expected to *decrease* consent to further taxation.

Notice, however, that fiscal contract theory draws a model of the relationship between state and society, but does not specify the type of considerations that ultimately determine individuals' willingness to shoulder fiscal demands. In particular, it remains silent as to whether citizens base their assessments of performance—and thus their attitudes toward taxation—strictly

on their own personal experience, or instead incorporate evaluations of the conditions in the communities in which they live or the experience of fellow citizens in the country as a whole. In fact, rational-choice models that rest on a behavioral assumption of self-interested individuals and emphasize free-riding problems in tax compliance<sup>32</sup> may implicitly suggest that citizens' own experience should guide taxpaying attitudes and behavior.

In this article, however, we argue that sociotropic considerations about public safety guide attitudes toward taxation and decrease the willingness to pay for reductions in crime. The expectation that victimization or personal experience will translate into policy attitudes and behaviors presumes that citizens readily link personal events to broader policy and societal issues. However, the extent to which individuals extrapolate from personal experience is likely to vary with a number of individual-level characteristics and contextual factors.

The step from the personal to the political requires that individuals construct explanations in which government or broader problems affecting society lie behind their individual experience. However, victims of crime often devote their time and resources to cope with the ensuing economic and psychological consequences,<sup>33</sup> rather than articulating larger narratives about politics or government performance. In addition, citizens often lack the political information and conceptual tools to connect the problems they face, including crime, to government actors or to broader social and political issues. A large psychology literature shows that predispositions, beliefs, misinformation, and a vast range of factors participate in the process of blame attribution and shape the judgments individuals make about negative events.<sup>34</sup>

Further, a growing literature in political science examines how problems in correctly attributing blame hinder political accountability.<sup>35</sup> In the specific domain of public safety, studies have found that citizens are able to punish governments for rising crime only under narrow circumstances, and victims are not more likely to punish incumbents through the vote.<sup>36</sup>

The relevant point for our purposes is that citizens often interpret victimization as individualized and confine it to the private sphere, instead of making sense of the experience in terms of larger societal issues and directly transforming it into tax attitudes.<sup>37</sup> Even as they seek to attribute responsibility for the crime suffered, they may explain the event relying on idiosyncratic and individual factors, instead of inserting it into a broader diagnosis of government responsibility, the need of societal change, or of more effective state action. In fact, crime victims often concentrate blame on the perpetrators and their moral failings, as well as resorting to factors like risky choices or bad luck to make sense of experiences with crime. For these reasons, personal experiences with crime may not readily alter citizens' policy attitudes and preferences, or directly drive their willingness to pay taxes to reduce insecurity.

To be clear, we do not deny that experiences with crime may inform the political attitudes and behaviors of some victims, including attitudes concerning taxation. They may also influence, in combination with other factors, their broader perceptions about security in society at large. Our key contention, however, is that any such effect of personal experience on tax attitudes requires a step by which individuals construct subjective interpretations of the meaning and causes of criminal events. For life experiences and actual levels of crime to have an effect on political preferences, citizens must first draw a connection between such "objective" factors and broader societal problems and government responsibilities. This intermediate step between personal victimization and political activation, which consists precisely in linking empirical facts and personal experience up to broader social dynamics, is itself an outcome that should be investigated rather than assumed.

In contrast, citizens can easily connect their *perceptions* of security for society at large to state performance. These evaluations of performance serve as a mechanism that readily connects perceptions of widespread insecurity to willingness to grant additional resources to the state.

Although personal experiences or local conditions may be attributed to multiple factors, levels of crime and insecurity on a national scale clearly involve the state. Idiosyncratic explanations for crime are less available when insecurity is perceived to be an extended, nationwide phenomenon. Therefore, sociotropic assessments are more likely to *directly* drive willingness to pay taxes than personal experience. Our argument that WTP taxes for improvements in public safety operates on the basis of sociotropic considerations is consistent with a larger public opinion literature that has examined the formation of mass attitudes toward economic voting,<sup>38</sup> immigration,<sup>39</sup> trade,<sup>40</sup> and social policies.<sup>41</sup> In all these policy domains, sociotropic views have been found to be more important determinants than self-centered concerns.

Importantly, sociotropic perceptions of crime and insecurity are not a simple extrapolation of individual experience. Instead, several factors beyond the individual's lived experience, including exposure to mass media, the characteristics of the media environment, the nature of her social network, and other subjective psychological factors are likely to shape broader assessments of public safety. For example, several studies show that media reports about crime tend to generate a sense of magnified vulnerability,<sup>42</sup> which in turn encourages people to look for alternatives beyond the state.<sup>43</sup>

Therefore, victimization and perceptions of crime in immediate surroundings may shape individuals' sociotropic perceptions, but they play a necessarily *indirect* role in their willingness to pay taxes. Personal experience and sociotropic perceptions are conceptually and empirically distinct, as we show in more detail in the empirical section below, and only the latter directly shapes willingness to pay taxes to address crime.

In short, we argue that negative sociotropic perceptions of security will tend to lead individuals away from committing resources to the government. The greater the deficit they

perceive in the provision of broader security, the less worthy of additional resources they deem the state to be. Table 1 summarizes the theoretical discussion.

**Table 1. Summary of Theoretical Expectations**

<b>Theory</b>	<b>Logic</b>	<b>Expected effect of crime on WTP</b>	<b>Relevant factor</b>
Sociotropic Fiscal Contract	Evaluations of state performance – governments delivering their part of the fiscal bargain	Greater among those with <i>favorable</i> evaluations	Perceptions of public safety nationwide
Insecurity as Catalyst for Taxation	State involvement as risk mitigation	Greater among those with <i>negative</i> perceptions of public safety	Perceptions of public safety in the community
	Civic-oriented behavior resulting from victimization	Greater among those directly affected by crime	Self-reported victimization

## Data and Methods

### *The Contingent Valuation Method*

Most of the public goods that governments provide are not traded in the private marketplace, which often obscures how much the public values such goods. Whereas the price of a service functions as a general indicator of its value to society, the assessment is considerably less straightforward when it comes to the provision of firefighting, a clean environment, or public parks. Yet, governments are often interested in determining the value of these goods, both to discriminate between goods that compete for resources from a limited budget, and to determine the difference between the cost and the benefit society derives from it.

The contingent valuation (CV) method was designed to estimate how much the public values a certain public good. It does so by eliciting individuals' willingness to pay through survey questions.<sup>44</sup> The paradigmatic example is the 1989 Exxon Valdez oil spill disaster, which prompted both the oil company and the state of Alaska to determine the value of the damage and resulted in a commission chaired by Nobel Prize recipients Kenneth Arrow and Robert Solow.<sup>45</sup> The commission concluded that CV studies could provide reliable information about the value placed on public goods and issued a set of guidelines on best practices to insure reliability of findings.<sup>46</sup>

As has become the norm among research using the CV method,<sup>47</sup> this paper follows the commission's recommendations by relying on a probability-based sample and conducting face-to-face interviews. It also asks about willingness to pay rather than willingness to accept—the first one asks about how much the person would pay to reduce a public bad (e.g., crime), whereas the second asks about how much they would have to be compensated for the increase in this public bad.<sup>48</sup> Further, as recommended by the commission, the survey formulates the questions in the form of a hypothetical referendum. After being told how much they would have to pay if the measure passed, they are asked to vote “yes” or “no” and also given a “would not vote” alternative. Finally, the question reminds respondents of their actual budget constraint before casting their vote.

### *Data*

Many contingent valuation studies rely on convenience samples, producing results that cannot be easily generalized to the population.<sup>49</sup> Instead, we conducted a nationally representative survey of adults in Mexico in November 2013. The survey was conducted face-to-

face at the respondent's home by an established polling firm in that country, according to a probability-based sample of 1,300 individuals.

For each individual, we calculated an interval containing the amount she would be willing to pay for a 30% reduction in crime. The lower and upper bounds of such interval were estimated using three consecutive questions in the survey. Initially, respondents were asked the following question:<sup>50</sup>

Imagine a referendum. The purpose of the vote is to decide the adoption of measures that would guarantee a reduction in crime by 30 percent. If a majority votes in favor of the measures, each person, including yourself, must pay \$500 pesos more in taxes per year. Considering your budget, would you vote in favor or against, or would not vote? In favor\_\_\_\_\_ Against\_\_\_\_\_ Would not vote\_\_\_\_\_

As a reference, the MX\$500 we first inquired about amounted to about twice the average daily wage in the private sector at the time of the survey.<sup>51</sup> The answer to this initial question determined the amount asked about in subsequent formulations. For example, if respondents voted against the referendum, they were then asked how they would vote if taxes increased by a smaller amount. Conversely, those who voted in favor were then asked how they would vote if taxes increased by a larger amount. The exercise is repeated once more, such that respondents are asked about specific amounts three times, further narrowing the acceptable range for each respondent. The responses given to the three questions resulted in the following eight categories: <100; (100, 250); (250, 400); (400, 500); (500, 750); (750, 1000); (1000, 2000), >2000. The bounds of each category will serve as each respondent's minimum and maximum willingness to pay—the dependent variable in the interval regression models discussed later.

The magnitude of the reduction in crime—30 percent—was selected because it is a realistic reduction conceivably attained by the government within an administration. At the same time, it is a meaningful reduction that could elicit fiscal sacrifice. Respondents were also asked



to explain in an open-ended question their responses. There was no indication in these responses that the magnitude of the decrease seemed implausible, too large, or too small. This issue was not salient for respondents, which gives us confidence in the plausibility of the decrease.

The question did not include a specific way in which the reduction would be achieved for several reasons. First, the objective is that respondents evaluate the benefits and costs of the reduction rather than focusing on how the reduction would be achieved. Choosing an arbitrary method would risk contaminating this decision based on views in favor or against that particular method. Responses to the open-ended questions did not suggest that the lack of specificity was an issue or a distraction for respondents.

Further, the adoption of some form of tax for public safety purposes is not a rare event. At the privately-driven end of the spectrum, business organizations will often collect monetary contributions from members in the form of Business Improvement Districts for the purposes of public safety, which are equivalent to voluntary forms of taxation.<sup>52</sup> On the government-driven end of the spectrum, there are several examples of Latin American countries adopting taxes explicitly earmarked for public safety purposes, as in Colombia, El Salvador, and Costa Rica.<sup>53</sup>

### *Background on Mexico*

The proliferation of violent crime in recent years, compounded with traditionally dysfunctional and corrupt judicial and law enforcement institutions,<sup>54</sup> has led scholars to characterize contemporary Latin American regimes as “violent democracies” in which insecurity and impunity eviscerate citizenship rights.<sup>55</sup> In Mexico, the election of President Felipe Calderón in 2006 was followed by the militarization of anti-drug efforts and a “drug war” that by 2011 had tripled the national homicide rate registered in 2007, from 8 to 24 homicides per 100,000

people.<sup>56</sup> In this context, the reduction of 30 percent in crime included in the prompt is likely to be meaningful to respondents, while also being plausible.

In addition to homicides, everyday forms of crime less directly associated with drug trafficking are also startlingly high.<sup>57</sup> Official victimization survey data reported as many as 215 thefts, 98 extortions, and 1.03 kidnappings per 1,000 inhabitants in 2013, the same year our survey was conducted. An estimated 33.9% of households had at least one member who was victim of a crime, and 16.3% of the crimes in which the victim was present involved some type of physical aggression.<sup>58</sup> In our own survey, 22% of respondents reported to had been victims of a crime in the previous year, and 32% a family member other than themselves.

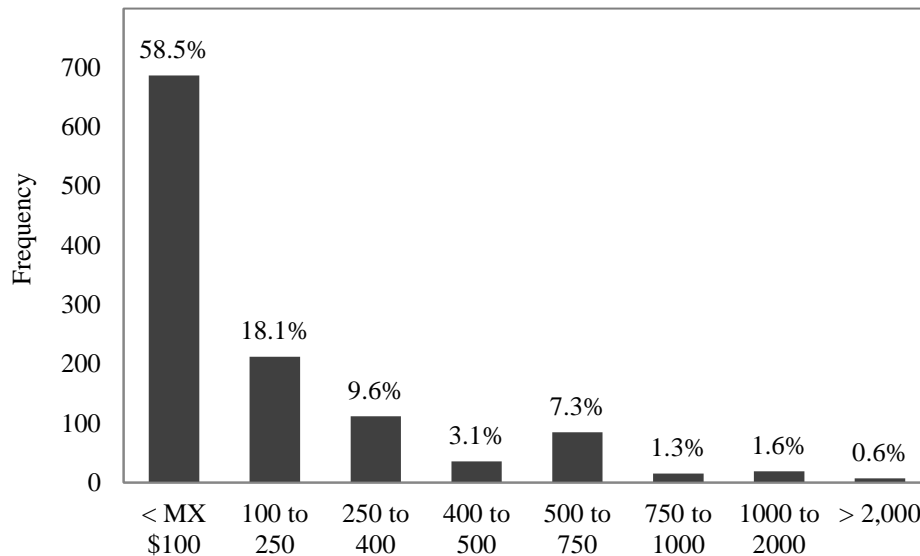
Not surprisingly, public safety is a highly salient concern among the public. In our survey, 27% of respondents identified insecurity as the top concern facing the country, above the economy (22%) and unemployment (17%). If the economy, unemployment, and prices are jointly considered, 44% rank them as the top concern, a similar figure to the 42% that place insecurity, crime, or drug trafficking at the top. Overall, 78% of respondents identify one of these latter items as the first or second most important problem facing the country. These views are not atypical for the region: public safety is the first or second concern across Latin American publics when asked to identify the main problem facing their country.<sup>59</sup>

### **Estimating WTP Taxes for Public Safety**

For each respondent, we estimated a lower and an upper bound, which correspond to the minimum and maximum amount in Mexican pesos the respondent is willing to pay for the 30% reduction in crime. As described above, we estimated this interval based on responses to three consecutive identical questions in which only the amount to be paid varied, based on the respondents' previous answer. The lower and upper bounds for each respondent are the relevant

dependent variables in all our models, which we estimate using interval regression. The distribution of responses is shown in Figure 1.

**Figure 1. Willingness to Pay Taxes for a 30% Reduction in Crime. Distribution of Responses**



In the most conservative estimate—excluding all observations in which the estimated interval is between zero and MX\$100—the survey indicates that at least 41.5% of the population is willing to pay some amount of their household income to reduce public insecurity by 30%. Expressed relative to income, at least 34% of the population reported to be willing to pay 1% or more of their total household income to attain this reduction, while 16% reported to be willing to pay 5% or more.

These figures are comparable to similar surveys conducted in Latin America. In a study carried out by the Development Bank of Latin America in seventeen cities, 28% of respondents on average expressed willingness to pay more in taxes if the government improved public goods delivery across several dimensions, whereas 54% expressed they would not pay more regardless of improvements.<sup>60</sup>

As shown in Figure 1, the estimated interval lies between 0 and 100 for a majority of respondents (58.5%). Under a conservative scenario, assuming that none of the 58.5% of respondents that declined to pay the lowest amount (MX\$100) would be willing to pay any money in additional taxes, and considering the midpoint value for each interval (except for the highest interval, for which \$2,000 was considered) in a weighted average, individual WTP can be estimated at MX\$170 per year. Conservatively considering this estimate to reflect household—rather than individual—WTP and multiplying it by the country’s 31.4 million households, we get an estimate of MX\$5.33 billion. Under a less conservative scenario, assuming the midpoint for the lowest interval, WTP amounts to MX\$199 and the aggregate estimate amounts to MX\$6.25 billion. To put things in perspective, the most conservative estimate of WTP (MX\$5.33 billion) represents about 13% of the Ministry of Public Safety’s budget or 36% of the Attorney General’s Office budget in 2012.<sup>61</sup>

### **Explaining Willingness to Pay Taxes for Public Safety**

In order to evaluate the hypotheses discussed above, the survey included items pertaining to victimization and perceptions about public safety, as well as respondents’ political views and standard demographic variables. We merged the survey data with municipal-level data on homicide rates (the only reliable measure of crime available across all municipalities) and state-level crime rates per 100 people, based on survey data.<sup>62</sup> These variables are included in multilevel models as three-year averages for 2011, 2012, and 2013 to smooth out any short-term shocks, and allow us to account for citizens’ exposure to varying local and state-level safety conditions. Including rates exclusively for 2013 (when our survey was fielded) does not change our results. To account for the fact that policing is not equally distributed across sectors of the population and the territory—which could drive both perceptions of security and tax attitudes—

we also collected data on the number of municipal police stations per thousand square kilometers in each respondent's municipality.<sup>63</sup>

To test whether direct crime victimization affects WTP, we rely on two measures. Each measure is a binary variable that indicates whether the respondent or a family member was a victim of a crime in the prior year. To evaluate the effect of perceptions—whether sociotropic or more proximate—of public safety on WTP, we asked respondents how safe they felt in their neighborhood or community, as well as in the country in general. Responses were coded using a 4-point scale (*very safe, somewhat safe, somewhat unsafe, very unsafe*).

The correlation between our measure of perceived country-wide safety conditions and other crime-related variables is low: 0.37 ( $p < 0.001$ ) with perceptions of neighborhood safety, 0.1 ( $p < 0.001$ ) with personal victimization, and less than 0.1 with objective measures of crime ( $p < 0.01$ ). This provides evidence for our argument above that these are distinct variables whose separate effects on tax attitudes deserve to be investigated.

In addition to these variables, we control for standard demographics and other potential confounders, including income, education, gender, age, employment status, household size, whether the respondent is the head of the household, party identification, presidential approval, and trust in the federal government. These variables capture characteristics of individuals that could correlate with both the relevant independent variables and WTP taxes. Wealthier individuals, for instance, might be more concerned about crime and also have greater ability to pay—recall that to apply the contingent valuation method we asked individuals about their WTP fixed amounts of money. Wealthier individuals may also be less concerned with state-led solutions to crime because of their ability to pay for private security.<sup>64</sup> We therefore introduce a measure of monthly household income on an 8-point scale, ranging from MX\$800 or less to over

MX\$40,000. Below we adopt other approaches to account for the fact that the marginal cost of paying an additional peso in taxes declines as income rises.

Education measures individuals' total years of schooling and ranges from 0 to 22 in the sample. Age and household size are also coded as continuous variables. Gender (Female=1), employment status (Unemployed =1), and head of household (Yes=1) are binary variables. Identification with each of the three main Mexican parties in 2013 is included as a set of three binary variables.<sup>65</sup> Presidential approval is coded along a 5-point scale (*very bad* to *very good*). Trust in the federal government is coded from 1 (no trust) to 4 (a lot of trust). For descriptive statistics see the Appendix (A.1).

To examine the relationship between these variables and WTP, we fit a series of interval regression models. Interval regression is a generalization of censored regression and uses maximum likelihood to fit models when the outcome variable is interval-censored, left-censored, or right-censored. This technique is the most appropriate for our data because the exact value each respondent is willing to pay to reduce crime is unobserved, but we know the interval that contains such value.<sup>66</sup> In short, we only observe intervals for an otherwise continuous outcome variable.

One modeling alternative is to treat the eight intervals in our data as ordered categories, ignoring actual monetary values, and fit ordered logistic or ordered probit models. Interval regression, however, takes into account the two known pieces of information for each observation (the willingness-to-pay upper and lower bounds) and uses them to predict the value of the outcome variable (i.e. an actual money amount), rather than the likelihood of falling into a given category. We also opt for interval regression for ease of interpretation, given that coefficients represent partial effects as in linear regression by ordinary-least-squares (OLS). However, we estimated ordered probit models in parallel with our interval regressions to check

that the estimation strategy does not drive the results. In all cases they are consistent with those presented here.

The dependent variables in all interval regression models are the willingness-to-pay lower and upper bounds, which are introduced in logarithmic form. Interval regression estimation relies on a distributional assumption of normality, but the distribution of WTP is skewed to the right and non-normal. By log-transforming WTP, normality is more closely approximated. Coefficients can therefore be approximately interpreted as a  $100 \cdot \hat{\beta}$  percentage change in willingness-to-pay associated with a one-unit change in the predictor.<sup>67</sup>

Since we want to evaluate the influence of “objective” safety conditions at the municipal and state levels, as well as of the differential provision of policing across territorial units, we use generalized structural equation modeling (GSEM) to fit three-level interval regressions, in which individuals are nested in municipalities and municipalities in states.<sup>68</sup> State- and municipal-random effects are introduced to account for unobserved heterogeneity between sub-national units—i.e., the dependence among respondents in the same municipality and municipalities in the same state. As is advisable with interval or censored data with a multilevel structure,<sup>69</sup> we rely on panel-level random effects because fixed effects would be perfectly collinear with parameters of interest that are observed at the second and third levels—the municipality and the state, respectively.

For robustness, however, we estimated all models using OLS with the eight WTP categories as the dependent variable, municipal fixed effects, and standard errors adjusted for clustering at the municipality level, while excluding the state- and municipal-level variables that prevented the use of territorial unit fixed effects (see Appendix A.2). The use of fixed effects in these models removes all observed and unobserved factors shared by survey respondents in the same municipality and estimates the relationship between respondents’ characteristics and WTP

taxes relying exclusively on within-municipality variation across individuals. All conclusions remain unchanged.



**Table 2. Interval Regression Models for (log) Willingness-to-Pay Taxes to Reduce Crime**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Municipal homicide rate	<0.01 (<0.01)			<0.01 (<0.01)	<0.01 (<0.01)	>-0.01 (<0.01)	>-0.01 (<0.01)	>-0.01 (<0.01)
State crime rate	<0.01 (<0.01)			<0.01 (<0.01)	<0.01 (<0.01)	<0.01 (<0.01)	<0.01 (<0.01)	>-0.01 (<0.01)
Police posts per km <sup>2</sup> (log)	-0.059 (0.051)			-0.040 (0.051)	-0.028 (0.055)	-0.019 (0.054)	-0.019 (0.049)	-0.021 (0.054)
Personal victimization		0.13 (0.12)		0.092 (0.13)	0.086 (0.14)	0.042 (0.13)	0.091 (0.13)	0.086 (0.14)
Family victimization		-0.013 (0.11)		-0.039 (0.12)	-0.026 (0.14)	-0.013 (0.12)	-0.035 (0.12)	-0.048 (0.14)
Neighborhood unsafety			0.064 (0.057)	0.017 (0.066)	0.035 (0.074)	0.076 (0.068)	0.039 (0.065)	0.079 (0.073)
Country unsafety			-0.37*** (0.060)	-0.30*** (0.068)	-0.28*** (0.074)	-0.23*** (0.070)	-0.38* (0.16)	-0.37* (0.18)
Trust in federal govt						0.22** (0.074)	0.100 (0.19)	0.048 (0.21)
Country unsafety x Trust in federal govt							0.047 (0.064)	0.062 (0.071)
Income					0.15** (0.055)	0.13* (0.054)		0.13* (0.054)
Female					-0.061 (0.12)	-0.077 (0.12)		-0.074 (0.12)
Age					-0.012** (0.0045)	-0.012* (0.0045)		-0.012** (0.0045)
Education					-0.021 (0.018)	-0.0092 (0.018)		-0.0094 (0.018)
Unemployed					-0.15 (0.16)	-0.13 (0.16)		-0.11 (0.16)
Household size					-0.0095 (0.026)	-0.0043 (0.026)		-0.0048 (0.026)
Household head					0.22+ (0.13)	0.19 (0.13)		0.20 (0.13)
Presidential approval						0.042 (0.058)		0.042 (0.058)
PRI identification						0.28+ (0.17)		0.29+ (0.17)
PAN identification						0.34+ (0.18)		0.35+ (0.18)
PRD identification						-0.017 (0.22)		-0.012 (0.22)
Constant	5.03*** (0.33)	5.00*** (0.068)	5.95*** (0.19)	5.84*** (0.34)	5.93*** (0.50)	4.98*** (0.54)	5.52*** (0.58)	5.39*** (0.72)
N	1,048	1,148	1,147	1,002	803	785	999	785
Log likelihood value	-1,311	-1,510	-1,490	-1,238	-971	-941	-1,226	-941
Est. variance of state RE	0.13 (0.10)	---	---	0.080 (0.092)	0.086 (0.10)	0.034 (0.096)	0.064 (0.087)	0.037 (0.096)
Est. variance of muni RE	0.32** (0.10)	---	---	0.31** (0.10)	0.34** (0.12)	0.34** (0.13)	0.29** (0.100)	0.34** (0.12)

DV is log-WTP. All columns show three-level interval regression with state- and municipal-random intercepts, except for columns 2 and 3, which show non-hierarchical interval regressions. Robust standard errors in parentheses. + p<0.10 \* p<0.05 \*\* p<0.01 \*\*\* p<0.001

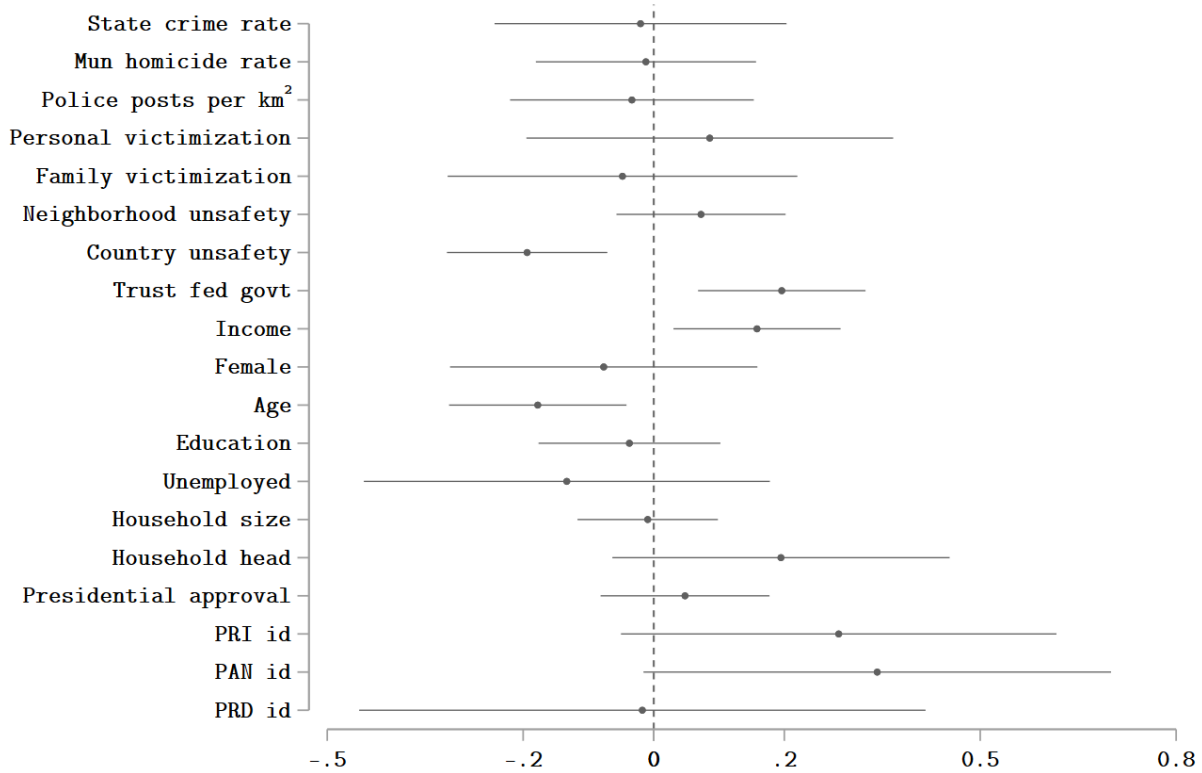
## Results

Table 2 presents results for our interval regression estimations. Models 1, 2, and 3 evaluate the *direct* relationship between WTP and objective safety and policing conditions, victimization, and perceptions, respectively. They show that neither objective crime and policing (Model 1) nor victimization (Model 2) shape WTP directly, but that socio-tropic perceptions of crime (Model 3) do. The relationship between WTP and these factors is further explored in Model 4, which models together objective crime and policing, victimization, and perceptions. Model 5 adds a vector of demographic controls, and Model 6 includes a full set of demographic and political controls.

Results from across models indicate that willingness to pay taxes to improve safety substantially *decreases* as the perception of insecurity in the country intensifies, but it is unaffected directly by objective crime, the provision of local policing, victimization, or neighborhood perceptions. The coefficient on perceived countrywide safety is negative and precisely estimated even after controlling for a host of potential confounders, like respondents' evaluation of the president, income, and partisan identification.

According to Model 6, the most conservative estimation, every unit increase in our measure (a 4-point scale ranging from *very safe* to *very unsafe*) is associated with a 21% decrease in the amount a respondent is willing to pay in taxes to reduce crime.<sup>70</sup> On average, those who feel the country is very unsafe—28% of the sample—are willing to pay only about half the amount of those who perceive it is very safe, and who compose 4% of the sample.<sup>71</sup> In order to compare the magnitude and significance across variables, Figure 2 shows normalized coefficients with 95% confidence intervals, based on the specification in column 6.

**Figure 2. Relationship between several variables and willingness to pay taxes to reduce crime. Standardized coefficients with 95% confidence intervals.**



NB: coefficients are standardized to reflect change in the DV given a SD increase in the predictors.

In addition to highlighting the importance of sociotropic perceptions, the analysis reveals that neither respondents' assessments of public safety in their neighborhood nor self-reported victimization has a *direct* systematic effect on their WTP. Across models, the coefficients for both perception of local public safety and victimization—both individual and family—failed to reach conventional levels of significance and are not substantively large.

Whereas personal victimization and perceptions about safety in the localities in which citizens live out their lives might be one source—among others—of sociotropic evaluations, citizens do not appear to base their policy preferences regarding higher taxation to reduce crime directly on them. Instead, any effect that victimization and perceptions of local safety conditions might have on attitudes toward taxation travels through their potential impact on sociotropic evaluations.

This evidence is consistent with the public opinion research that shows that “sociotropic” or nationwide considerations tend to override contextual “egotropic” concerns or individual-level experiences in shaping political attitudes and behavior when public security is a salient issue,<sup>72</sup> but goes against victimization and risk mitigation studies discussed above that instead see personal concerns and experiences as direct motivating factors. It also contrasts with findings for advanced democracies that fear of crime in individuals’ most proximate environments increases support for state-led solutions.<sup>73</sup>

Regarding control variables, those who identify with the right-of-center party are systematically more favorable to additional taxation to reduce crime. Although the left is typically associated with more statist attitudes,<sup>74</sup> the right tends to favor tough on crime approaches. Perhaps paradoxically, this finding suggests that political projects to increase the fiscal strength of the state might find a more supportive constituency on the right when crime is a salient political concern. Further, those who report greater trust in the federal government also report greater willingness to pay taxes, as do identifiers of the party in power.

Additionally, WTP is positively associated with income, consistent with expectations that greater ability-to-pay would lead higher-income individuals to be willing to contribute greater absolute amounts. Notice, however, that the WTP questions asked respondents about their willingness to pay for a set money amount, which in practice would be equivalent to a regressive poll tax. Given that the proposed tax amounts would represent a larger share of income for poorer individuals, it is not surprising that respondents in higher income brackets appear to be willing to pay more in absolute terms for a given reduction in crime. In fact, a person in the highest income bracket is predicted to be willing to pay about 2.7 times more than a person in the lowest category, holding other variables fixed, while the income difference between the top and the bottom income brackets is at least 50 times in magnitude.

We take two steps to further investigate the relationship between socioeconomic status and WTP and account for the possibility that ability-to-pay may be driving the results. First, for each respondent, we calculated WTP lower and upper bounds expressed as a share of their reported household income.<sup>75</sup> In the Appendix (A.3), we replicate all models in Table 2 using this income-normalized variable as the outcome variable, as opposed to a set money amount. Although higher-income individuals consent to pay higher absolute amounts, as is clear from Table 2, the results in the Appendix suggest they are willing to sacrifice a *lower* proportion of their income than the poor for a given improvement in public safety. This finding must be taken with caution due to well-known issues of underreporting in income. However, it may reflect that public security is more valuable to the poor, who cannot self-insure by purchasing private security and have less capital to cushion the impact of an encounter with crime.

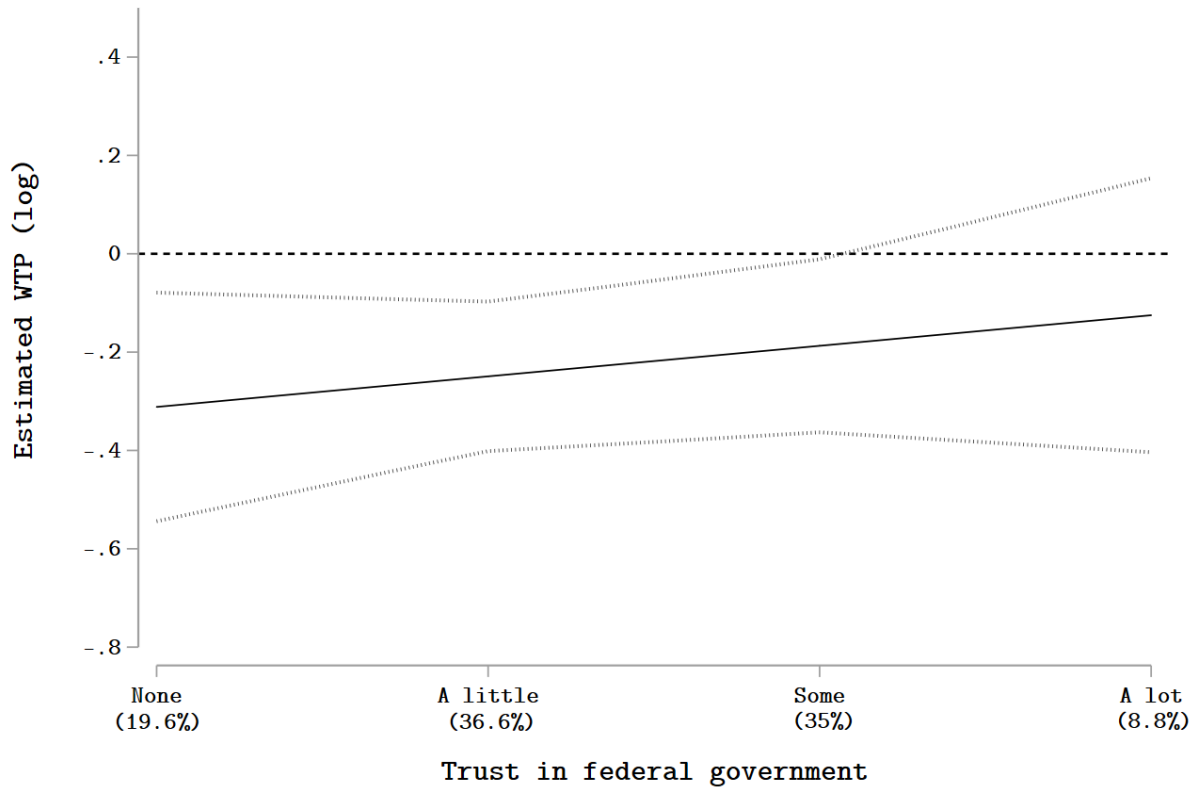
Second, we use an alternative measure of WTP that does not involve asking about set tax amounts for a given percentage-point reduction in crime (30%), as in the contingent valuation method. Elsewhere in the questionnaire, we simply asked respondents whether they were willing to pay more in taxes to increase spending in public security. Their responses were coded in a 1 to 4 scale. This alternative measure of our outcome of interest helps alleviate concerns about differences across individuals in the marginal cost of contributing a given money amount, or in their understanding of a 30% reduction in crime levels. The results are reported in the Appendix (A.4). Our core result regarding the association of perceptions of countrywide insecurity with lower willingness to pay remains robust.

Finally, to evaluate whether mistrust in government is a factor shaping the relationship between the explanatory variables and WTP, we also model interaction terms between trust in the federal government and objective crime conditions, victimization, and perceptions. Notice that when we introduce trust in government as a predictor in column 6, the coefficient on

perceptions of country-wide unsafety decreases in size but remains large and significant, indicating that perceptions are not a simple reflection of underlying levels of trust, or vice versa. Therefore, trust might moderate the negative impact of perceptions of unsafety on WTP.

Models 7 and 8 in Table 2 include the interaction between country perceptions and trust in government. Figure 3 shows the marginal effect of country-wide perceptions on WTP by level of trust. It is suggestive of a negative relationship between trust and the marginal effect of sociotropic perceptions: as trust in government decreases, the effect of negative country perceptions in reducing WTP appears to become larger. For respondents that trust the federal government a lot, perceptions of unsafety no longer have a significant negative association with WTP (the 95% CI for a lot of trust crosses zero). Interactions between other explanatory variables and levels of trust are not significant (see Appendix A.6).

**Figure 3. Average Marginal Effect of Perceptions of Country-wide Unsafety, by Level of Trust with 95% confidence intervals**



In short, as our fiscal exchange argument would predict, the worse the state’s provision of public safety in the country is perceived to be, the *less* individuals are willing to pay taxes to improve it. Trust in government appears to shape this relationship: the effect of countrywide perceptions is greater among individuals with low levels of trust. The evidence supports the view that mass attitudes help reproduce a vicious circle of low fiscal capacity and poor public goods provision. For the many who perceive greater insecurity, this very perception reduces their willingness to confer more resources to a state that, in their view, has failed to effectively protect society.

Overall, we find evidence of a robust association between negative perceptions about security in the country and unwillingness to pay more in taxes. Responses to an open-ended question asked after the three questions inquiring about willingness to pay specific amounts help

illustrate the mechanism. We asked respondents about the reasons behind their stated preference. Of all the respondents who declared to be unwilling to pay the lowest amount (MX\$100), 41% cited their budget constraints or general economic worries as the chief reason. The rest, however, mentioned concerns that the revenue would be misused, that the government would fail to reduce crime even with more resources, corruption, a lack of trust in authorities, or believed that the government should already be reducing crime with the resources at hand and did not deserve more. These responses provide support for our theorized mechanism that for citizens who perceive great unsafety in the country, this very widespread insecurity is an indication that the state has generally failed to deliver its part of the bargain, and thus is not worthy of additional tax resources. Feelings of widespread insecurity are connected to notions that the state does not use available resources appropriately and may even be captured by criminal actors, thereby driving opposition to taxation.

Concrete examples from Mexican politics are also suggestive of a nexus between perceptions of insecurity and low WTP. According to recent newspaper reports, business associations have refused to pay taxes on the basis of the government's inability to provide public safety in Mexico. In Apatzingán, the second largest city in the state of Michoacán, the chamber of commerce announced that its affiliates would stop paying taxes until the government generated the conditions necessary for economic activity.<sup>76</sup> Similarly, in Acapulco, a beach resort city in the state of Guerrero, a number of small businesses in the tourism industry stated their intention to stop paying taxes until the government showed that it was taking measures to address their insecurity concerns.<sup>77</sup>

Although business associations may have different considerations compared to the average person, the logic they provide in their challenge to the tax authority is consistent with ours and helps illustrate the mechanism. While it is not clear from these stories whether national



or local perceptions are driving these actions, the underlying logic is transparent: amid perceptions of insecurity, citizens disapprove of the state's performance and turn against taxation, rather than consenting to fund the state to address the issue.

## **Discussion**

Although the findings are robust to different specifications, it is worth highlighting different features of the research design that might constrain what we can conclude from these results. The first one is a common feature of public opinion studies: individuals' responses do not always correspond with their true attitudes. For example, one possibility could be that respondents' answers might be responding to a "warm glow" effect, in which they feel good about giving even if the good is not important to them. However, although this effect is likely to be present for certain public goods, such as the environment, it is unlikely to happen for public safety, where there is much less "glow" associated with it compared to other goods.

Perhaps more likely would be a social desirability bias, in which respondents express willingness to pay because they think they will be judged negatively if they do not contribute. While this is a possibility, responses to the open-ended questions suggest that most people were not shy in expressing their reasons for paying the amount they said, especially if the reasons were negative.

Another possibility could be that some respondents might value public safety and be willing to pay for it, but at the same time object to taxes as the vehicle of the contribution. Such respondents could dislike the imposition of taxes and state a lower amount than they would through a different vehicle. Since we are strictly interested in consent to additional taxation, this is not a concern. However, our findings could be interpreted as a lower bound for willingness to

pay for public safety more generally, regardless of the vehicle (e.g., taxation vs. direct contributions to police departments).

Further, the measure of income is self-reported and should be considered with caution. Not only might individuals have incentives to misreport their income—both over-report if they believe wealth is a measure of success or under-report if they are concerned about coming across as pompous or worried about their safety—but those individuals at the highest levels of income are not likely to respond to the survey.

Another concern might be that a 30% decrease in crime might have a different meaning to respondents depending on where they live: given different crime baselines across the country, this percentage would result in a greater absolute reduction in dangerous areas compared to safer ones. We opted for a decrease in percentage terms—as opposed to offering an absolute number of crimes—because the question would be both relatively easy to understand and relevant throughout the country. However, to address the different baselines, we included in the models two measures of actual levels of crime.

## **Conclusion**

This article evaluated the relationship between two central aspects of state capacity: taxation and public safety. Relying on the contingent valuation model, it estimated willingness to pay taxes for public safety and evaluated competing views for their ability to account for this relationship with evidence from Mexico. Based on interval regression and generalized structural equation models, we found support for the view that sociotropic concern for crime serves as a catalyst for fiscal disengagement. Contrary to perspectives that would expect greater willingness to pay taxes as a result of crime, whether victimization- or perception-centered approaches, our findings point

to the opposite effect in a developing country like Mexico: willingness to pay will decline as assessments of public safety worsen.

This result contrast with the literature on risk mitigation that links heightened perceptions of insecurity with support for state intervention. While we also find that policy attitudes respond systematically to risk perceptions, in the case of Mexico's crime the effect goes in the opposite direction from what scholars working on social policy in the developed world have found. This suggests that individuals might respond differently to the numerous risks they face in their lives depending on the type of risk, their diagnosis about its sources, and their expectations about the possibility of buffering it through increased state action. The link between crime and increased support for government action may only hold in the developed world, where citizens tend to have enough confidence in governments' ability to revert insecurity. Research on the impact of risk perceptions on policy attitudes should therefore take into account citizens' views about the responsibility of the state in their very levels of risk exposure.

Our evidence also runs counter to studies that link victimization to pro-social attitudes. Despite previous studies' findings that crime victimization increases civic engagement, we found no evidence that crime victims differ from non-victims in willingness to pay taxes. This result can inform future research on the conditions under which crime victimization becomes a politically mobilizing experience for citizens, as well as on the kinds of attitudinal or behavioral changes it generates when it comes to policy and the relationship with the state.

Further, the findings bring nuance to the broad swaths that have characterized the fiscal contract theory. Whereas this literature has remained silent as to whether direct personal experiences, perceived conditions in citizens' immediate local environments, or perceptions about nationwide performance will carry more weight in explaining willingness to grant additional resources to the state, we find that perceptions are important—even if they are

disconnected from reality—and that sociotropic rather than immediate personal considerations are relevant.

The results constitute a first step in identifying the terms of trade in the taxpayer-government relationship in developing countries where crime is a highly salient concern. They also remind us of the challenge of setting off the virtuous cycle by which rulers exchange protection for financial support, central to historical accounts of the rise of effective states. Contrary to the notion that crime will elicit civic responses and expand popular tolerance to fiscal extraction—as the victimization and risk exposure views imply—our results highlight the challenges of triggering concerted state-society action in addressing crime, and the need of further investigating how it is produced.

## Appendix

### **A1. Descriptive Statistics From Willingness-to-Pay Taxes For Public Safety Survey**

	Obs	M	SD	Min	Max
<i>Dependent variables</i>					
WTP lower bound	486	309.36	304.79	100	2000
WTP upper bound	1,165	258.50	304.60	100	2000
WTP lower bound, % of income	392	9.21	14.82	0.63	93.75
WTP upper bound, % of income	886	12.71	16.32	0.25	100
<i>Independent variables</i>					
Country unsafety	1,274	2.93	0.84	1	4
Personal victimization (binary)	1,298	0.22	0.42	0	1
Family victimization (binary)	1,272	0.32	0.47	0	1
Neighborhood unsafety	1,294	2.50	0.90	1	4
Income	1,085	3.05	1.21	1	8
Female gender (binary)	1,300	0.50	0.50	0	1
Age	1,279	40.83	15.41	18	84
Education	1,298	8.92	4.03	0	22
Unemployed (binary)	1,300	0.15	0.36	0	1
Household size	1,283	4.49	2.13	1	24
Household head (binary)	1,285	0.53	0.5	0	1
Presidential approval (5=very bad)	1,261	2.83	1.13	1	5
Trust in federal government	1,297	2.33	0.89	1	4
PRI identification (binary)	1,300	0.15	0.36	0	1
PAN identification (binary)	1,300	0.1	0.3	0	1
PRD identification (binary)	1,300	0.08	0.27	0	1
State crime rate per 100 people (3-year avg)	1,300	35.02	13.61	15.24	63.39
Municipal hom. rate per 100,000 (3-year avg)	1,300	22.69	25.74	0	179.19
Police posts per 1,000 km <sup>2</sup>	1,160	43.64	93.49	0	486.35

## A.2. Fixed-effects models (replicating Table 2, with municipality-fixed effects)

Linear Models of Willingness-to-Pay Taxes to Reduce Crime							
	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Personal victimization	-0.05 (-0.11)		>-0.01 (0.11)	-0.02 (0.12)	-0.02 (0.12)	>-0.01 (0.11)	-0.02 (0.12)
Family victimization	-0.04 (-0.1)		-0.03 (0.1)	-0.02 (0.1)	-0.04 (0.1)	-0.02 (0.1)	-0.04 (0.1)
Neighborhood unsafety		-0.01 (0.06)	>-0.01 (0.07)	0.04 (0.06)	0.07 (0.06)	0.01 (0.06)	0.07 (0.06)
Country unsafety		-0.2** (0.07)	-0.21** (0.07)	-0.2* (0.08)	-0.18* (0.08)	-0.24 (0.17)	-0.22 (0.18)
Trust in federal govt					0.12* (0.06)	0.12 (0.22)	0.07 (0.24)
Country unsafety x Trust in federal govt						0.02 (0.07)	0.02 (0.08)
Income				0.05 (0.07)	0.04 (0.07)		0.05 (0.07)
Female				-0.09 (0.11)	-0.09 (0.1)		-0.09 (0.1)
Age				-0.01* (0.003)	-0.01* (0.003)		-0.01* (0.003)
Education				-0.01 (0.02)	<0.01 (0.02)		<0.01 (0.02)
Unemployed				-0.26+ (0.15)	-0.24+ (0.14)		-0.24+ (0.14)
Household size				-0.01 (0.02)	-0.01 (0.02)		-0.01 (0.02)
Household head				0.12 (0.11)	0.1 (0.11)		0.1 (0.11)
Presidential approval					0.09+ (0.05)		0.09+ (0.05)
PRI id					0.24 (0.18)		0.24 (0.18)
PAN id					0.42* (0.21)		0.42* (0.21)
PRD id					0.03 (0.16)		0.04 (0.16)
Constant	1.98*** (0.04)	2.57*** (0.21)	2.57*** (0.21)	2.81*** (0.37)	1.98*** (0.45)	2.23*** (0.52)	2.1** (0.66)
N	1,148	1,147	1,124	904	884	1,121	884

Each model is an OLS regression with municipal fixed effects and SE robust to heteroskedasticity within clusters. DV is WTP bracket. Model 1 from Table 2 is dropped because it only included state- and municipal-level variables now absorbed by municipality-fixed effects. Robust standard errors in parentheses. + p<0.1 \* p<0.05 \*\* p<0.01 \*\*\* p<0.001

**A.3. Interval Regression Models for (log) Willingness-to-Pay Taxes to Reduce Crime. WTP Normalized by Income**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Municipal homicide rate	-0.086+			-0.087	-0.038	-0.030	-0.088	-0.030
	(0.052)			(0.055)	(0.044)	(0.042)	(0.055)	(0.042)
State crime rate	0.013			0.014	0.031	0.026	0.012	0.026
	(0.020)			(0.020)	(0.019)	(0.018)	(0.020)	(0.018)
Police posts per km <sup>2</sup> (log)	0.39			0.47	0.45	0.47	0.48	0.47
	(0.34)			(0.35)	(0.34)	(0.32)	(0.35)	(0.32)
Personal victimization		-1.05		-0.11	-0.26	-0.087	-0.075	-0.087
		(0.91)		(0.92)	(0.91)	(0.88)	(0.91)	(0.88)
Family victimization		-0.68		-0.55	0.34	0.16	-0.57	0.16
		(0.84)		(0.84)	(0.84)	(0.82)	(0.83)	(0.82)
Neighborhood unsafety			0.23	0.45	0.34	0.49	0.53	0.49
			(0.43)	(0.45)	(0.45)	(0.44)	(0.45)	(0.44)
Country unsafety			-1.16*	-0.61	-0.94*	-0.53	-0.89	-0.49
			(0.57)	(0.47)	(0.46)	(0.46)	(1.11)	(1.08)
Trust in federal govt						0.82+	0.49	0.89
						(0.44)	(1.38)	(1.36)
Country unsafety x Trust in federal govt							0.20	-0.022
							(0.45)	(0.44)
Income					-3.86***	-3.84***		-3.84***
					(0.35)	(0.34)		(0.34)
Female					-0.29	-0.31		-0.31
					(0.76)	(0.74)		(0.74)
Age					-0.028	-0.020		-0.020
					(0.028)	(0.027)		(0.027)
Education					-0.011	0.068		0.068
					(0.11)	(0.11)		(0.11)
Unemployed					-0.99	-1.16		-1.17
					(0.98)	(0.97)		(0.97)
Household size					0.055	0.12		0.12
					(0.17)	(0.16)		(0.16)
Household head					1.21	0.94		0.94
					(0.83)	(0.81)		(0.81)
Presidential approval						0.70*		0.70*
						(0.36)		(0.36)
PRI identification						0.56		0.55
						(1.09)		(1.10)
PAN identification						1.57		1.57
						(1.17)		(1.17)
PRD identification						-0.42		-0.42
						(1.30)		(1.30)
Constant	9.35***	8.67***	11.0***	9.96***	21.2***	14.0***	8.18*	13.9**
	(1.79)	(0.61)	(1.74)	(2.23)	(2.81)	(3.15)	(4.04)	(4.33)
N	967	1,058	1,060	925	803	785	922	785
Log likelihood value	-1,952	-1,916	-1,928	-1,592	-1,451	-1,393	-1,585	-1,393
Est. variance of state RE	1.76	---	---	2.22	<0.01	<0.01	2.43	<0.01
	(2.66)			(2.85)	(<0.01)	(<0.01)	(2.92)	(<0.01)
Est. variance of muni RE	15.1**	---	---	15.0**	14.7***	12.2**	14.5**	12.2**
	(4.93)			(4.99)	(4.39)	(4.17)	(4.89)	(4.17)

DV is log-WTP normalized by income. All columns show three-level interval regression with state- and municipal-random intercepts, except for columns 2 and 3, which show non-hierarchical interval regressions. Robust standard errors in parentheses. + p<0.1 \* p<0.05 \*\* p<0.01 \*\*\* p<0.001

**A.4. Linear Mixed-effects Models of Willingness-to-Pay Taxes to Reduce Crime. Alternative measure of WTP.**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Municipal homicide rate	<0.01 (<0.01)			<0.01 (<0.01)	>-0.01 (<0.01)	>-0.01 (<0.01)	>-0.01 (<0.01)	>-0.01 (<0.01)
State crime rate	<0.01 (<0.01)			<0.01 (<0.01)	<0.01 (<0.01)	<0.01 (<0.01)	<0.01 (<0.01)	<0.01 (<0.01)
Police posts per km <sup>2</sup> (log)	-0.032 (0.034)			-0.015 (0.030)	>-0.01 (0.032)	>-0.01 (0.028)	>-0.01 (0.030)	-0.01 (0.028)
Personal victimization		-0.08 (0.07)		-0.018 (0.073)	-0.019 (0.082)	-0.031 (0.079)	-0.024 (0.081)	-0.032 (0.079)
Family victimization		0.02 (0.07)		0.027 (0.071)	0.046 (0.088)	0.058 (0.091)	0.037 (0.084)	0.058 (0.091)
Neighborhood unsafety			-0.01 (0.03)	-0.037 (0.036)	-0.0098 (0.037)	0.0049 (0.038)	0.0088 (0.037)	0.0071 (0.036)
Country unsafety			-0.16*** (0.038)	-0.16*** (0.048)	-0.14** (0.055)	-0.11* (0.055)	-0.038 (0.096)	-0.031 (0.098)
Trust in federal govt						0.12** (0.039)	0.26* (0.12)	0.22+ (0.12)
Country unsafety x Trust in federal govt							-0.040 (0.035)	-0.036 (0.035)
Income					0.054+ (0.030)	0.045 (0.029)	0.052+ (0.029)	0.043 (0.029)
Female					-0.038 (0.050)	-0.032 (0.052)	-0.035 (0.048)	-0.036 (0.052)
Age					-0.0016 (0.0024)	-0.0018 (0.0022)	-0.0015 (0.0024)	-0.0017 (0.0022)
Education					-0.011 (0.0081)	-0.0060 (0.0079)	-0.0072 (0.0084)	-0.0060 (0.0080)
Unemployed					0.060 (0.098)	0.085 (0.100)	0.074 (0.096)	0.077 (0.10)
Household size					0.011 (0.012)	0.011 (0.013)	0.012 (0.012)	0.011 (0.012)
Household head					-0.036 (0.062)	-0.044 (0.067)	-0.038 (0.063)	-0.045 (0.067)
Presidential approval						0.074*** (0.021)		0.073*** (0.021)
PRI identification						0.068 (0.12)		0.062 (0.12)
PAN identification						0.060 (0.094)		0.055 (0.093)
PRD identification						0.032 (0.089)		0.031 (0.090)
Constant	1.65*** (0.16)	1.74*** (0.069)	2.22*** (0.17)	2.14*** (0.26)	2.11*** (0.34)	1.49*** (0.36)	1.38*** (0.40)	1.24** (0.41)
N	1,115	1,222	1,219	1,059	856	835	854	835
Log likelihood value	-1,393	-1,531	-1,519	-1,308	-1,060	-1,026	-1,048	-1,026
Est. variance of state RE	0.03 (0.02)	0.04 (0.02)	0.03 (0.01)	0.03 (0.02)	0.02 (0.02)	0.01 (0.02)	0.01 (0.02)	<0.01 (0.02)
Est. variance of muni RE	0.12*** (0.04)	0.11*** (0.04)	0.1*** (0.03)	0.1*** (0.04)	0.1*** (0.04)	0.08*** (0.04)	0.08*** (0.04)	0.08** (0.04)

DV is willingness to pay more taxes to increase security spending, on a 1 to 4 scale. Robust standard errors in parentheses.

+ p<0.1 \* p<0.05 \*\* p<0.01 \*\*\* p<0.001



#### **A.5. Text of Survey Question in Spanish**

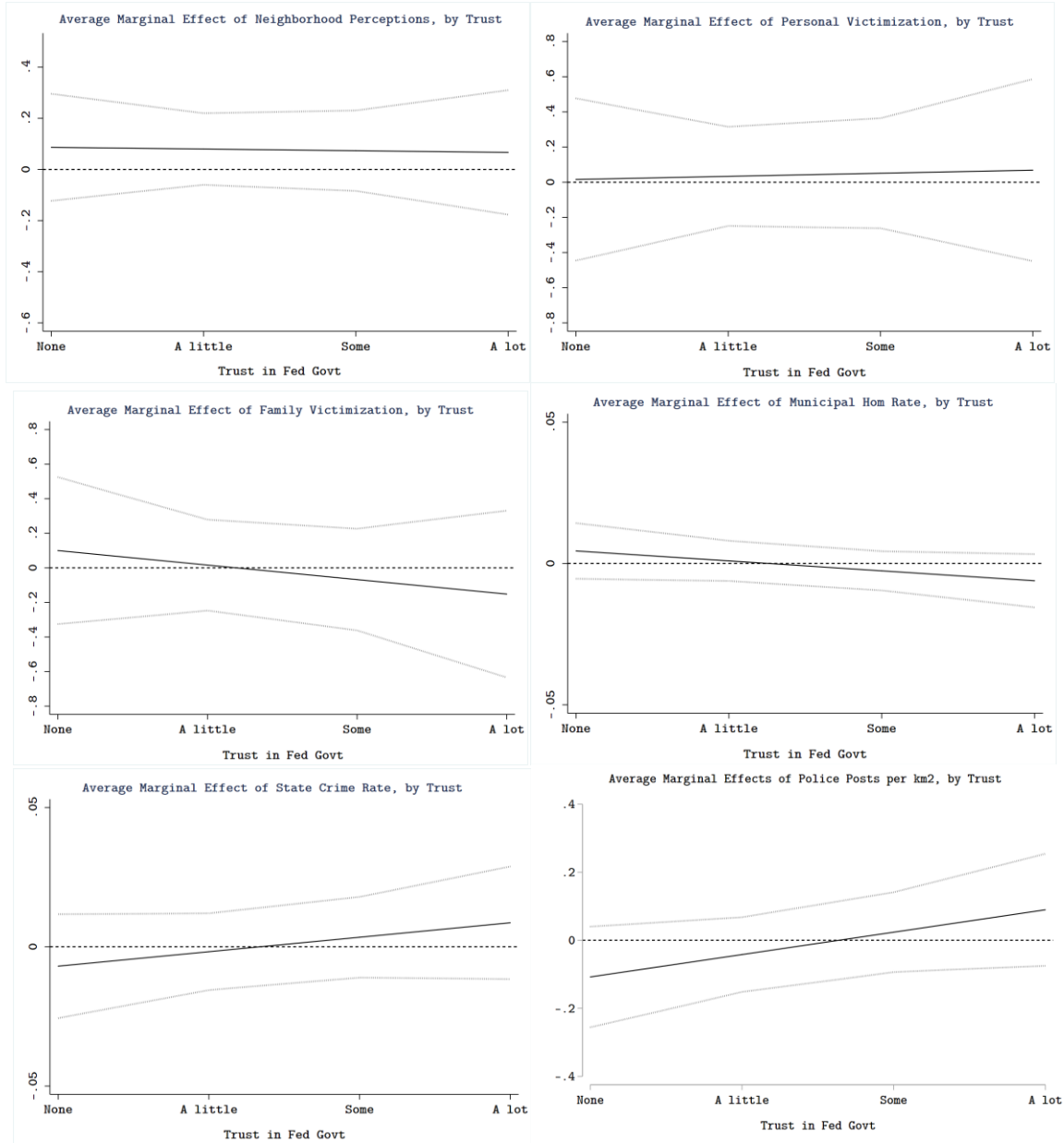
Imagínese una votación. La votación es para decidir si se adoptan medidas que seguro reducirían la delincuencia en un 30%. Si una mayoría vota a favor de estas medidas, cada persona, incluido usted, deberá pagar \$500 pesos más en impuestos al año. Tomando en cuenta su presupuesto, usted votaría a favor o en contra, o no votaría?

A favor  En contra  No votaría

Survey response rate: 37%

## A.6. Interactions between explanatory variables and trust in federal government

In addition to the interaction between country-wide perceptions and trust in government shown in the main text (Figure 3), figures for the interactions between trust and the rest of the explanatory variables are shown below. Only in the interaction with country-wide perceptions is the average marginal effect on willingness to pay taxes different from zero.



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## Notes

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<sup>1</sup> Charles Tilly, *Coercion, Capital, and European States, AD 990–1992* (Oxford: Wiley-Blackwell, 1992).

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<sup>4</sup> David Rueda and Daniel Stegmueller, “The Externalities of Inequality: Fear of Crime and Preferences for Redistribution in Western Europe.” *American Journal of Political Science* 60, 2: 2016:472-489.

<sup>5</sup> Regina Bateson, “Crime Victimization and Political Participation.” *American Political Science Review* 106, 3 (2012):570-587; John Bellows and Edward Miguel, “War and Local Collective Action in Sierra Leone.” *Journal of Public Economics* 93, 11-12 (2009): 1144–57.

<sup>6</sup> Néstor Castañeda, David Doyle, and Cassilde Schwartz, “Opting Out of the Social Contract: Tax Morale and Evasion,” *Comparative Political Studies* 53, 7 (2020): 1175-1219. Margaret Levi, *Of Rule and Revenue* (Berkeley, CA: University of California Press, 1988).

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<sup>8</sup> Kenneth Arrow, Robert Solow, Paul Portney, Edward Leamer, Ray Radner, Howard Schuman. “Report of the NOAA Panel on Contingent Valuation,” *Federal Register*, Jan. 15, 1993; John Whitehead, “A practitioner’s primer on the contingent valuation method” in Anna Alberini and James Kahn (eds.), *Handbook on Contingent Valuation* (Edward Elgar: MA, 2006), Chapter 3.

<sup>9</sup> The few existing studies have focused on water quality and WTP for alternatives (e.g., William Vásquez, Pallab Mozumbder, Jesús Hernández Arce, and Robert Berrens., “Willingness to Pay for Safe Drinking Water: Evidence from Parral, Mexico.” *Journal of Environmental Management* 90 (2009):3391-2400.

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<sup>11</sup> Hacker, Rehm, and Schlesinger, “The Insecure American: Economic Experiences, Financial Worries, and Policy Attitudes,” 23–49.

<sup>12</sup> Philipp Rehm, *Risk Inequality and Welfare States: Social Policy Preferences, Development, and Dynamics* (New York: Cambridge University Press, 2016)

<sup>13</sup> Hacker, Rehm, and Schlesinger, “The Insecure American: Economic Experiences, Financial Worries, and Policy Attitudes,” 23.

<sup>14</sup> Sarah Brooks, “Insecure Democracy: Risk and Political Participation in Brazil,” *Journal of Politics* 76, 4 (2014): 972-985.

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<sup>16</sup> Philip Hoffman, “What Do States Do? Politics and Economic History.” *The Journal of Economic History* 75, 2: (2015), 310–11.

<sup>17</sup> Exceptions are Melina Altamirano, Sarah Berens, and Sandra Ley, “The Welfare State amid Crime: How Victimization and Perceptions of Insecurity Affect Social Policy Preferences in Latin America and the Caribbean,” Unpublished ms. 2018.; Brooks, “Insecure Democracy: Risk and Political Participation in Brazil”; Brooks, Sarah and Marianne Ulriksen, “Why Do People Support Redistribution in High Crime Settings?” Unpublished ms. 2018; Matthew Carnes and Isabella Mares, “Risk and reversals: Explaining Individual Level Support for Public Insurance Expansion in Latin America.” *Politics and Society* 43, 4(2015):525-550.

<sup>18</sup> Bellows and Miguel, “War and Local Collective Action in Sierra Leone,.” 1144–57; Christopher Blattman, “From Violence to Voting: War and Political Participation in Uganda.” *American Political Science Review* 103, 2 (2009): 231–47; Maarten Voors, Eleonora Nillesen, Philip Verwimp, Erwin Bulte, Robert Lensink, and Daan van Soest.. “Violent Conflict and Behavior: A Field Experiment in Burundi,” *American Economic Review* 102, 2 (2012): 941–64.

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<sup>20</sup> Bateson, “Crime Victimization and Political Participation,” 570.

<sup>21</sup> *Ibid*, 575.

<sup>22</sup> Although Bateson (2012) also finds that victims are more likely to support anti-democratic attitudes.

<sup>23</sup> Altamirano, Berens, and Ley “The Welfare State amid Crime: How Victimization and Perceptions of Insecurity Affect Social Policy Preferences in Latin America and the Caribbean;” Brooks and Ulriksen “Why Do People Support Redistribution in High Crime Settings?”

<sup>24</sup> Bateson, “Crime Victimization and Political Participation”

<sup>25</sup> Altamirano, Berens, and Ley “The Welfare State amid Crime: How Victimization and Perceptions of Insecurity Affect Social Policy Preferences in Latin America and the Caribbean”

<sup>26</sup> Néstor Castañeda. “Business Coordination and Tax Politics.” *Political Studies* 65, 1 (2017): 122-143; Levi, *Of Rule and Revenue*; James Mahon Jr. “Weak Liberalism and Weak Property Taxation in Latin America.” In *The Political Economy of Taxation in Latin America*, ed. Gustavo Flores-Macías (New York: Cambridge University Press 2019); Mick Moore. “Revenues, State Formation, and the Quality of Governance in Developing Countries.” *International Political Science Review* 25 (2004): 297-319.

<sup>27</sup> Sarah Berens and Armin von Schiller. “Taxing Higher Incomes: What Makes the High-Income Earners Consent to More Progressive Behavior in Latin America?” *Political Behavior* 39, 3: (2017): 703-729; Wilson Prichard. *Taxation, Responsiveness, and Accountability in Sub-Saharan Africa: The Dynamics of Tax Bargaining* (Cambridge: Cambridge University Press, 2015).

<sup>28</sup> Organization for Economic Cooperation and Development, *Governance, Taxation, and Accountability: Issues and Practices* (Paris: OECD, 2008), 32.

<sup>29</sup> States may underperform in security because of weak “Weberian” professionalization of security and justice bureaucracies (including the absence of meritocratic recruitment and long-term career prospects, low expertise or organizational complexity, poor salaries, training, equipment, and infrastructure), complicity of state officials with criminal actors, or a combination of both. Our argument implies that citizens rely on their perceptions of security to assess whether states are delivering their part of the bargain and form their tax attitudes accordingly.

<sup>30</sup> Bellows and Miguel “War and Local Collective Action in Sierra Leone.”

<sup>31</sup> Richard Tedeschi and Lawrence Calhoun, “The Posttraumatic Growth Inventory: Measuring the Positive Legacy of Trauma.” *Journal of Traumatic Stress* 9, 3 (1996): 455-472.

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<sup>32</sup> Levi, *Of Rule and Revenue*.

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<sup>34</sup> Kelly Shaver, *The Attribution of Blame: Causality, Responsibility, and Blameworthiness* (New York: Springer-Verlag, 1985).

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<sup>36</sup> Sandra Ley. "Electoral Accountability in the Midst of Criminal Violence: Evidence from Mexico." *Latin American Politics and Society* 59, 1 (2017):3–27.

<sup>37</sup> For a similar argument regarding the formation of preferences toward free trade in the United States, see Edward Mansfield and Diana Mutz, "Support for Free Trade: Self-Interest, Sociotropic Politics, and Out-Group Anxiety," *International Organization* 63, 3 (2009): 425-457.

<sup>38</sup> Kinder and Kiewiet, "Sociotropic Politics: The American Case," 129–61.

<sup>39</sup> Jens Hainmueller and Michael Hiscox, "Attitudes toward Highly Skilled and Low-skilled Immigration: Evidence from a Survey Experiment," *The American Political Science Review* 104,1 (2010): 61-84.

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<sup>41</sup> Richard Lau and Caroline Heldman, "Self-Interest, Symbolic Attitudes, and Support for Public Policy: A Multilevel Analysis," *Political Psychology* 30, 4 (2009): 513–37.

<sup>42</sup> Lucía Dammert and Mary Fran Malone, "Fear of Crime or Fear of Life? Public Insecurities in Chile," *Bulletin of Latin American Research* 22, 1 (2003): 79-101; Daniel Romer, Kathleen Hall Jamieson, and Sean Aday, "Television News and the Cultivation of Fear of Crime," *Journal of Communication* 53,1 (2003):88–104.

<sup>43</sup> Angelina Godoy, *Popular Injustice: Violence, Community, and Law in Latin America*, (Palo Alto, CA: Stanford University Press, 2006).

<sup>44</sup> Robert Mitchell and Richard Carson, *Using Surveys to Value Public Goods: The Contingent Valuation Method* (Washington, DC: Resources for the Future, 1989); Whitehead, "A practitioner's primer on the contingent valuation method"

<sup>45</sup> John Cawley, "Contingent Valuation Analysis of Willingness to Pay to Reduce Childhood Obesity," *Economics and Human Biology* 6 (2008), 282.

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<sup>46</sup> Kenneth Arrow, Robert Solow, Paul Portney, Edward Leamer, Ray Radner, Howard Schuman. "Report of the NOAA Panel on Contingent Valuation"

<sup>47</sup> Cawley, "Contingent Valuation Analysis of Willingness to Pay to Reduce Childhood Obesity;" Mark Cohen, Roland Rust, Sara Steen, Simon Tidd. "Willingness-to-Pay for Crime Control Programs," *Criminology* 42,1 (2004):89-109.

<sup>48</sup> The two are different because of the endowment effect, or the notion that people value more something they already have.

<sup>49</sup> Cawley, "Contingent Valuation Analysis of Willingness to Pay to Reduce Childhood Obesity," 285.

<sup>50</sup> See Appendix for text in Spanish

<sup>51</sup> Comisión Nacional de los Salarios Mínimos, *Informe de La Dirección Técnica*, 2013, 2046. [http://www.conasami.gob.mx/pdf/dt/INFORMES\\_ESCANEADOS/2013/11NOVIEMBRE\\_2013.pdf](http://www.conasami.gob.mx/pdf/dt/INFORMES_ESCANEADOS/2013/11NOVIEMBRE_2013.pdf).

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<sup>59</sup> Latinobarómetro, Online Data Analysis, 2013.

<sup>60</sup> Daniel Ortega, Lucas Ronconi, and Pablo Sanguinetti, “Reciprocity and Willingness to Pay Taxes: Evidence from a Survey Experiment in Latin America,” *Economía* 16, 2 (2016): 55–87.

<sup>61</sup> Based on data from Centro de Estudios de las Finanzas Públicas, *Evolución del gasto público por ramos 200-2012*, (Mexico City: CEFP, 2012), 5-7.

<sup>62</sup> From INEGI, “Encuesta Nacional de Victimización y Percepción Sobre Seguridad Pública (ENVIPE 2014): Principales Resultados,” 2014.

<sup>63</sup> From INEGI, “Encuesta Nacional de Victimización y Percepción Sobre Seguridad Pública (ENVIPE 2014): Principales Resultados,” 2014. This is a good proxy for the provision of policing throughout a municipality, as it captures the territorial reach of local police forces that, as per the Mexican constitution, are responsible for public safety.

<sup>64</sup> On economic elites’ motivations to pay taxes see Tasha Fairfield. “Taxing Latin America’s Economic Elites.” In *The Political Economy of Taxation in Latin America*, ed. Gustavo Flores-Macías (New York: Cambridge University Press, 2019).

<sup>65</sup> About 36% of respondents in the sample indicated that they identified with a political party.

<sup>66</sup> Jeffrey Wooldridge, *Econometric Analysis of Cross Section and Panel Data* (Cambridge: MIT Press, 2010), 783-90). For respondents willing to pay the maximum amount, the outcome value is right-censored (the upper boundary is unknown). For estimation purposes, the upper endpoint in these cases is plus infinity. For respondents not willing to pay the lowest amount we inquired about (MX\$100), the relevant interval goes from 0 to 99. Treating these observations as left-censored (with minus infinity as the lower endpoint) produces the same results.

<sup>67</sup> The exact percentage change in WTP associated with a one-unit change in the predictor is given by the formula:  $\% \Delta \hat{y} = 100 \cdot [\exp(\hat{\beta}) - 1]$ , which can be simply approximated by multiplying the estimated coefficient by 100.

<sup>68</sup> Respondents in our sample were located in 120 municipalities across Mexico’s 32 states.

<sup>69</sup> Wooldridge, *Econometric Analysis of Cross Section and Panel Data*, 784.

<sup>70</sup> The exact percentage change for a one-unit increase is given by:  $100 \cdot [\exp(-0.23) - 1] = -20.55\%$

<sup>71</sup> 50 respondents thought the country is very safe, 347 somewhat safe, 521 somewhat unsafe, and 356 very unsafe. 26 did not respond.



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<sup>72</sup> Romero, Vidal, Beatriz Magaloni, and Alberto Díaz-Cayeros.. “Presidential Approval and Public Security in Mexico’s War on Crime,” *Latin American Politics and Society* 58, 2 (2016):100–123.

<sup>73</sup> However, a difference with Rueda and Stegmüller (2016) is their emphasis on tax-financed redistribution among the wealthy as a means to reduce crime.

<sup>74</sup> Gabriel Ondetti. “Once Bitten, Twice Shy: Path Dependence, Power Resources, and the Magnitude of the Tax Burden in Latin America.” In *The Political Economy of Taxation in Latin America*, ed. Gustavo Flores-Macías (New York: Cambridge University Press 2019).

<sup>75</sup> Since both the value of income and the WTP data are instead interval-coded in the survey, to calculate the “relative lower bound” we divided the minimum amount each respondent was willing to pay by the maximum possible income in her reported income bracket. The “relative upper bound” is calculated as the respondent’s upper bound in absolute terms divided by the lowest possible income in her reported income bracket. Individuals who declared that they would not pay the minimum amount (MX\$100) were assumed to be willing to pay 0% of their household income.

<sup>76</sup> Verónica Calderón, “Empresas de Apatzingán dejarán de pagar impuestos por violencia,” *El País*, January 24, 2014.

<sup>77</sup> Javier Tinoco, “Empresarios en Acapulco amagan con dejar de pagar impuestos si no mejora seguridad,” *El Sol de México*, October 9, 2018