# *Opting for Exit: Informalization, Social Policy Discontent, and Lack of Good Governance*

*Sarah Berens*

ABSTRACT

The informal sector challenges economic growth and hinders the abatement of income disparities in developing countries. This study argues that a weak and poorly governed welfare state can cause the informal sector to increase when individuals use it as an exit option from an unsatisfying welfare system. The article explores how the welfare state's benefit structure and citizens' trust in institutions to deliver public goods affect the likelihood of informality. A logistic hierarchical model, based on cross-sectional survey data from Latin America and the Caribbean and descriptive panel data from Brazil, is used to test the hypothesis. Findings reveal that social policy discontent, low trust, an elitist distribution of welfare benefits, and dysfunctional institutions increase the likelihood of being informally employed. However, workers with greater agency—the better-educated—seem notably less likely to informalize when social policy benefits are targeted toward their own socioeconomic group.

*Keywords:* informal sector, institutions, Latin America, the Caribbean, preferences, welfare state

Labor markets in low- and middle-income economies are segmented by the persistent phenomenon of informality. Informal labor is generally defined by the lack of protection and recognition by a legal framework and the vulnerability of the individual in respect to property rights or job security (ILO 2002, 3). The informal sector is conceived as a worrisome phenomenon, as it implies a significant lack of tax revenue, inefficient allocation of resources, lower productivity and, overall, lower economic growth (Perry et al. 2007; Dabla-Norris et al. 2008; Loayza et al. 2009). Moreover, it comes with social exclusion from and "outsiderness" in the labor market (Carnes and Mares 2014; Berens 2015a) and lack of political representation (Altamirano 2019).

However, we still know little about what drives individuals to seek work in the shadow economy. The academic debate on tax compliance (see Allingham and Sandmo 1972; Torgler 2005; Saavedra and Tommasi 2007) provides useful evidence on individual tax behavior and serves as a good starting point for considering

Sarah Berens is a senior research fellow at the Cologne Center for Comparative Politics, University of Cologne. sarah.berens@uni-koeln.de. ORCID 0000-0001-5188-3569. Conflict of interest: Author Sarah Berens declares none.


DOI 10.1017/lap.2019.58

an individual's decision to enter the informal employment sector. But the phenomenon differs from mere tax evasion, as informality can also depend on employer discretion and structural hurdles, so that we need to move beyond the tax compliance literature. Regulatory barriers (De Soto 1989; Loayza 1996; Johnson et al. 1998), low institutional quality (Saavedra and Tommasi 2007), the quality of the legal system (Dabla-Norris et al. 2008; Carnes 2014), and low social trust or tax morale (Torgler and Schneider 2009; D'Hernoncourt and Méon 2011) have so far been identified as important factors that increase the informal economy at the macro level. But the analysis of individual-level determinants of informalization—that is, working in the informal sector—is still in its infancy (e.g., Torgler 2005; Jonasson 2012; Günther and Launov 2012).

Revealingly subtitled "Exit and Exclusion," Perry et al.'s seminal account of informality in Latin America and the Caribbean (LAC hereafter) (2007) sheds light on the broad heterogeneity of the informal sector and emphasizes its dual character. Some workers are voluntary exit seekers while others are involuntary, structurally excluded workers who would rather be formal. Building on Perry et al. 2007, this study links informality to the welfare state and thereby lays out one avenue through which the informal sector can thrive. It argues that the government's ability to provide welfare services and the quality of public goods provision influence the likelihood of working in the informal sector. Formal employment comes at the cost of taxation and contributions to the welfare system. If the benefit of the welfare state falls below its costs, if it offers misguided incentives (see Levy 2008 for the Mexican case), or if the state lacks good governance by wasting resources in undemocratic processes, individuals might seek alternative options, such as the informal sector—a possible "exit option" à la Hirschman (1970).

Thus, discontent with social services might increase the likelihood of ending up in informality when individuals use it as an exit option from an unsatisfying welfare system. The proposed mechanism should apply mostly to those who can voluntarily choose their sector of employment, to whom I refer as potential exit seekers. The question that this article addresses is, therefore, not primarily why workers enter the informal economy, but more specifically, whether informal labor is a "vote" against the status quo of a public welfare system that either fails to ease unequal income distribution and high poverty rates or simply falls short in delivering benefits.

LAC illustrates a labor-abundant region with large informal economies, varying degrees of established welfare systems, and experience with both aspects over a long period of time. Survey data from the Latin American Public Opinion Project (LAPOP 2008, 2010) for 24 LAC countries are used to test the theoretical argument. The study distinguishes "exit seekers" from those who have less capacity to choose their sector of employment by their level of education. Subsequently, it analyzes the effect of social policy and state capacity shortcomings on the likelihood of being an informal sector worker for the average individual and for potential exit seekers in particular. To address endogeneity concerns, the discussion presents descriptive panel data on switches from formal or nonemployed to informal work, derived from the 2010 Brazilian Electoral Panel Study (Huberts and Machado

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

2015). Due to the low number of respondents who switched labor market status, the panel data serve merely as a first illustration of the proposed mechanism.

Findings from the logistic hierarchical regression analysis of the likelihood of informal employment reveal that the more individuals trust state institutions and the better the institutional quality, the less likely they are to be informal sector workers, while a more unequal distribution of welfare benefits, favoring the rich, increases the odds of informality—which lends support to the exit argument. This pattern is further corroborated by descriptive analysis of the BEPS. The overall effects indicate that informality can be conceived as a "vote" against the public system when the welfare state falls short of the individual's expectations. The well-educated, moreover, are particularly sensitive to welfare benefits that accrue to their own income group, with a declining incidence rate of informality the higher the share of social insurance benefits for the top quintile.

The findings suggest that welfare state incentives are needed to retrench the informal sector, moving ahead of the general panacea of labor regulation reform as the solution to informal employment. Although an elitist or truncated welfare model seems to matter to keep the well-educated attracted to the formal economy, the effects are not sufficiently large to provide an argument against more universal social policy programs. When benefits are distributed more equally, individuals with low or average levels of schooling (who are also more numerous) can be incentivized to enter or remain in the formal sector.

## Informal Labor and Welfare Services in LAC

The fragmentation of Latin American labor markets can be traced back to the emergence of labor market institutions (Carnes 2014) and the development and reform of welfare systems (Wibbels and Ahlquist 2011). Public transfers have only limited effects on narrowing the gap between rich and poor, as social insurance redistributes income with an upward bias (Lindert et al. 2006; Holland 2018). Contributory social insurance programs protect military staff, civil servants, and workers in the formal sector, excluding labor market outsiders (Huber and Stephens 2012). The welfare system is still regressive and truncated, despite heavy investments in conditional cash transfer programs in recent years, targeted toward the poor (Brooks 2015; Carnes and Mares 2014; Holland 2018). As Holland and Schneider (2017) observe, social expenditures have dramatically increased in LAC, but while the expansion of social assistance helps alleviate poverty, it leaves the truncated social insurance system intact.

Employment-related welfare services have supported the stratification of the labor market. A segmented labor market can influence welfare state support at the individual level (Fernández-Albertos and Manzano 2016; Berens 2015a), decreasing support when welfare programs are benefiting only a particular group or when individuals fear that the costs of the welfare state are not equally shared. When benefits are denied because of a dysfunctional state and a lack of distributive capacity, or

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

when benefits favor particular groups (because of clientelism, for example), individuals might turn their backs on the public transfer system. Brooks (2009) illustrates how dissatisfaction with the public social insurance system facilitated pension privatization in several Latin American states. Additionally, Levy (2008) reveals how a costly social security system provides incentives for formal workers to informalize, in order to receive the social protection subsidy, instead of paying for social security through income tax. Consequently, individuals respond to the offerings—or missing offers—of the public welfare system. We can therefore expect that the regressive and exclusionary nature of the welfare systems in LAC also influences informality.

## The Baseline of Informality

Risk-taking temperament and personal monetary gains and losses largely explain individual fiscal behavior in high-income economies (see Slemrod and Yitzhaki 2002 for an overview). Fear of punishment is a relevant factor for tax avoidance (Allingham and Sandmo 1972). But as Alm et al. (1992) emphasize, fear of punishment does not explain why so many individuals comply. Moreover, many informal sector workers in low- and middle-income economies primarily need income to survive, whether this income is subject to taxation or not. Tax evasion requires a deliberate decision not to pay taxes (e.g., Allingham and Sandmo 1972; Alm et al. 1992; Slemrod and Yitzhaki 2002; Feld and Frey 2007), but becoming an informal wage earner is not necessarily equivalent to an unwillingness to comply. Employer discretion, lack of skills to qualify for formal jobs, or abundance of labor can exclude workers from the formal economy (Perry et al. 2007).

Maloney (2004) highlights the voluntary nature of informality, arguing that workers choose the informal sector for its higher flexibility and autonomy (see also Perry et al. 2007). Günther and Launov (2012) illustrate, however, that the proportion of informal workers who would achieve higher earnings in the formal sector is larger than it should be according to the theoretical prediction. The discrepancy between the estimated optimal size of the informal sector and its actual size speaks to entry barriers to the formal economy and serves as empirical evidence that informality consists of both voluntary and involuntary parts.

Perry et al. (2007) scrutinize both parts, and emphasize that household income, life cycle effects, and the family's socioeconomic background generally predetermine the chances of finding employment in the formal labor market. Furthermore, informal microfirms are often run by family members and provide the first job for adolescents in these households (Perry et al. 2007, 51, 60). Individuals who grow up in low-income households lack material support to pursue an educational career that allows them to qualify for formal employment, which usually requires a higher level of education. Additionally, the more dependent workers are on daily wages, the less bargaining power they have with their employer; we can assume that the likelihood of informal employment rises with increasing poverty (see Günther and Launov 2012). But Perry et al. (2007, 47) equally show that a substantial number of individuals in the informal sector have voluntarily opted for exit, emphasizing that "the

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

two views, exclusion and exit, are complementary rather than competing analytical frameworks."

## The Argument

Acknowledging the heterogeneity of rationales that determine informal labor, this study focuses on the drivers of voluntary exit from formal employment. It proposes that satisfaction with public welfare goods and good governance of public services are decisive factors for formal versus informal labor. The argument is based on the assumption that individuals gain utility from stable income, as offered in the formal sector, and that utility increases with mounting personal income. Individuals not only maximize short-term gains (e.g. income) but also future income, which is more certain in formal employment.

Formal employment increases the individual's utility by offering greater income through better-paid jobs (Pagés and Stampini 2009) and job security (e.g., employment contract, legal status, access to unemployment insurance, and so on), albeit at the cost of taxation. In contrast, informal employment comes at the cost of higher vulnerability (regarding legal status and higher transaction costs; see Feige 1990), income insecurity, and uncertainty about future revenue. On the benefit side, the informal sector provides higher flexibility (Jonasson 2012, 486), possibly social protection coverage through a formally working spouse, and untaxed earnings, which are usually higher than equivalent formal, posttax wages (Perry et al. 2007). In the long run, however, employment in the informal economy can be very costly, due to the lack of entitlement to pensions, for instance.

The utility that derives from employment in the formal sector outweighs employment in the informal sector when posttax income and transfers exceed the level of nontax income, all else constant. The individual's preference for formal or informal work is therefore affected by the costs of taxation and the gains from welfare benefits or insurance. Moreover, keeping in mind the hurdles to qualify for welfare programs—such as contribution-based pensions, which usually require stable employment histories—individuals also discount their chances of eligibility when making choices about the sector of employment. Thus, the general assumption developed here is that individuals gain greater utility from working in the informal sector only when benefits and insurance gains are uncertain, when they are ineligible for welfare programs (see Levy 2008), or when costs exceed benefits. Finally, the expected stream of transfers is conditional on how well the individual trusts the state to handle public goods provision.

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

## Social Policy Benefits, Institutional Quality, and Informality

An attractive welfare state can offer an incentive to enter or remain in the formal sector when benefits are employment-related, which increases the utility of formal work. Attraction encompasses both a generous system of social benefits and a state that is actually capable of providing social services. In a laboratory experiment, Alm et al. (1992) found that it is not only risk aversion that leads to tax compliance, but also the expectation of public goods as a reward for paid contributions.

Outside the laboratory, Torgler and Schneider (2009) reveal that institutional quality significantly affects the size of the shadow economy at the macro level, while Jonasson (2012) finds empirical evidence for this mechanism in Brazil. Similarly, the rule of law and the performance of the legal system have been identified as significantly influencing informalization of businesses (Dabla-Norris et al. 2008). A well-functioning institutional system should increase reliance on the state for welfare provision (see Mares 2005) because a more functional and efficient institutional framework is more capable of providing public goods (see also Rothstein 2011). Moreover, a more capable state is also more efficient at restraining free riders so that public goods can be provided. The greater the expected returns from the welfare state, the larger the utility of formal sector employment. Reliability of good governance is particularly important, therefore, since welfare benefits are usually not immediately distributed after contributions are made (Rothstein 2011).

A more capable state, then, increases the utility of formal sector employment by providing not only immediate benefits but also certainty of future benefits. Institutional strength encompasses rule of law, lack of corruption, accountability, and political stability, ensuring the generation of public revenue to finance social services and distributive capacities to deliver social insurance and public transfers.[1] However, it is mostly individuals of a more privileged socioeconomic background, who can choose between employment sectors, who are equipped to make this sort of cost-benefit calculation. I suggest, therefore, that potential exit seekers—the better-educated—should be the most sensitive to institutional capacity.

*H1. Higher institutional quality decreases the likelihood of working in the informal labor market, particularly among potential exit seekers.*

One could oppose this claim with the argument that lower institutional quality simply means that the state is unable to monitor the labor market, which thereby facilitates informalization. The mechanism for informality would then be the ease of entry to the informal sector, rather than a vote against a poor welfare system and an incapable state. However, I assume that individuals generally derive greater utility from working in the formal sector, as it affords higher job security (employment contracts) and income security (benefits and insurance). Only when individuals pay taxes without receiving a return from the state through the welfare system does the utility of working in the informal sector rise (Maloney 2004; Pagés and Stampini 2009).

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

Next, how welfare benefits are distributed should also make a difference. If the state provides public transfers, we should observe a declining informal sector; such an investment in human resources and insurance against risks should lead, on the one hand, to greater employability and, on the other, to satisfaction with the public system, making exit less attractive.

*H2. Better welfare provision decreases the likelihood of working in the informal labor market, particularly among potential exit seekers.*

Expanding welfare, however, does not benefit everyone to the same degree. In LAC, social spending is often regressive, so social insurance benefits that are based on contributory systems reach higher-income strata more than the poor (Holland 2018). The poor benefit mostly from the expansion of social assistance programs. We therefore need to take into account who benefits, in order to assess the incentives to informalize for potential exit seekers compared to those who may have less discretion over their sector of employment.

When the welfare state improves social insurance benefits, the better-educated are less likely to work in the informal labor market, as they would gain from these adjustments when working in the formal sector. In contrast, the poor are more likely to resent an elitist welfare distribution, not only because they are excluded from these benefits, due to the regressive nature of the system, but also because a truncated welfare state represents inefficient use of scarce public resources. Improvements in social policy for the rich are therefore an incentive for the less privileged to work in the informal sector.

*H2a. Expansion of social insurance reduces the probability of potential exit seekers' working informally but increases the likelihood that the average individual will do so.*

On the other hand, when the welfare state expands social assistance, we should see less informal labor among the poor, as this is where they benefit. However, as Levy (2008) shows for the Mexican case, noncontributory welfare benefits can also provide an incentive to work informally, because one can simply take both—nontaxed earnings and the welfare benefit. But formal work comes not only with better access to welfare programs but also with protection through labor law (Berens and Kemmerling, 2019), so that improvements in social assistance can still be an incentive to formal work.

The logic established here expects individuals to reciprocate with formal labor when the state provides sufficient benefits and insurance through the welfare state. Assuming that the better-educated understand the welfare-maximizing impact for society at large of universal social policy benefits, such as investments in the education and health of the poor (see Rueda and Stegmueller 2016), we may expect that benefits for the poor—that is, efficient use of public resources—will also offer an incentive to seek or to remain in formal employment for the potential exit seekers.

*H2b. Expansion of social assistance decreases the likelihood of working in the informal labor market, particularly among potential exit seekers.*

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

### A Note on Causality

A final caveat relates to the direction of the causal mechanism. It is likely that certain factors reinforce each other. An expanding informal sector can be deleterious to public goods provision because much-needed tax revenue is missing, which then further incentivizes informalization. Moreover, working in the informal sector can change the individual's view of the state. Those who are better off and buy insurance and protection in the private market—health care, for example—might experience higher quality in the private sector and thus become even more dismissive of public solutions. And the more individuals opt for private solutions, the lower the quality of the public system: not only is funding insufficient, but private providers will poach better-qualified staff.

For the poor, working in the informal sector might make them confront their vulnerability, being outside the legal framework, and such awareness can further reduce trust in state institutions. The inability to rely on legal protection also makes informal workers more subject to demands for bribery to prevent enforcement, which further damages institutional capacity and quality.[2]

Torgler and Schneider (2009), too, emphasize that causality is not always clear-cut. A large informal economy also decreases tax morale and governmental quality in the long run, when individuals observe that others do not comply and when the state is deprived of vital resources (see also Perry et al. 2007). There is the risk of a downward spiral, although we do not observe such a decline empirically. It might, though, explain a developmental stalemate in some countries (Rothstein 2011). Moreover, in order to foster economic growth, Latin American countries have invested in human capital by increasing expenditures on primary and secondary education in the last two decades (Lloyd-Sherlock 2009; Holland and Schneider 2017), so that the informal sector is less likely to debilitate the welfare system, despite its negative externalities.

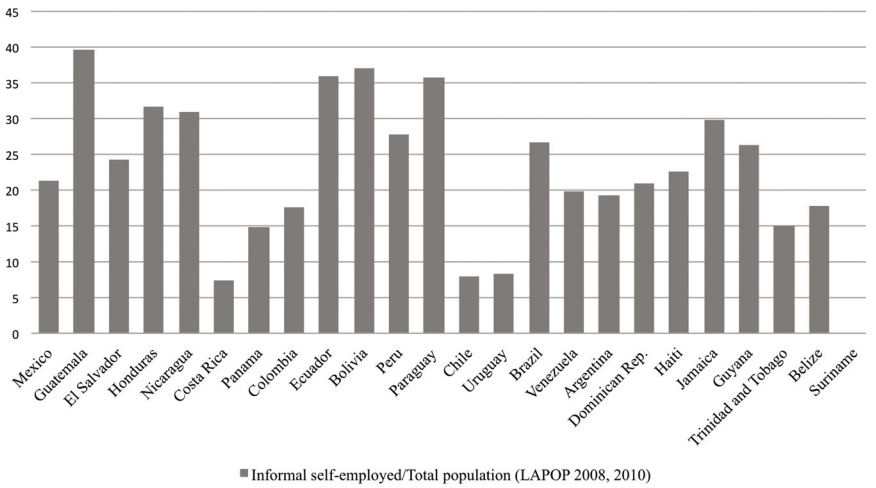
Furthermore, Loayza et al. (2009), Friedman et al. (2000), and Torgler and Schneider (2009) find empirical support for the proposed causal trajectory of the impact of institutional quality on informality at the macro level, with carefully specified models for different time points that consider reversed causality. And Jonasson (2012) provides empirical evidence for the suggested mechanism at the micro level for the case of Brazil. These findings strongly increase confidence in the proposed causal direction.

## Empirical Setup

The dependent variable, being a self-employed informal, is measured with survey data from the Latin American Public Opinion Project (LAPOP) for the years 2008 and 2010 for 24 LAC countries.[3] This analysis concentrates on informals who consider themselves informally self-employed, going back to Hart's 1973 classification of informals by their status of self-employment and simultaneous lack of contribution-based benefits (health insurance), following Berens (2015b) and Baker and Velasco-Guachalla (2018).[4]

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

Figure 1. Self-Employed Informal Workers as Percentage of Total Population




Information on the respondent's enrollment in social insurance programs is surveyed in LAPOP only in 2008 and 2010, so the analysis is restricted to these two periods. I code respondents as informal sector workers when they identify as self-employed in the employment status question (ocup1a) and answer "no" to the question that asks how far the respondent is enrolled in a health care plan (ocup1c in 2008 and sal1 in 2010).[5] All others are in the 0 category, so that the DV measures informal workers versus the rest of the population.[6]

The study is predominantly about the likelihood of being in one or the other sector, as the available data do not allow investigating the point of transition.[7] I acknowledge that this is an imperfect measure of informality that omits some informal workers, such as many women who do manual work while taking care of their children and probably consider themselves housewives rather than informal self-employed, leading to misreporting in the survey. But Loayza and Rigolini (2011) support the operationalization of informals with the use of the self-employment survey category, since the group of self-employed informals accounts for a high proportion of informal workers (see also Maloney 2004).

Figure 1 illustrates the percentage of self-employed informal workers in the total population based on the LAPOP survey data. The measure positively correlates with ILO (2018) data on informal workers as a percentage of the active working population ($\rho = 0.893$).

To identify the cutoff point distinguishing voluntary and involuntary informal workers (the point at which level of education allows more choice between informal and formal employment), I apply an empirical solution by estimating the model for the full sample and adding a squared term for years of education. The predictive marginal effects plot of education and education squared, which controls for the nonlinearity effect of education (see figure 3), illustrates the education effect and

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

empirically qualifies the choice of the cutoff point, *complete secondary education* (13 years of education and more).

Because reasons for entering the informal sector need to be identified at the micro as well as at the macro level, I employ a hierarchical logistic regression model.[8] Observations are not independent but cluster within countries, so a hierarchical model is statistically recommended (Steenbergen and Jones 2002). As a robustness test, the analysis uses BEPS (Ames et al. 2013), conducted in 2010 around the presidential elections with three waves (March–April, $N$ = 2,482; August, $N$ = 908; November, $N$ = 1,221).[9] Only the first two waves contain the occupation status item needed to identify informal sector workers. The time between the first two waves is short (approximately four months); therefore it is not surprising that the number of respondents who switched from formal or nonemployed to informal sector worker is small. The dependent variable is now the change from formal/nonemployed in wave 1 to informal labor in wave 2. Moreover, as a robustness test, I replicate the LAPOP analysis with data from the Latinobarometer (LAB) 2009 and 2010, which contain similar items at the individual level. Estimation results (provided in the online appendix) generally support the LAPOP results.

## Independent Variables: Welfare Provision and Quality of Institutions

The World Bank's *Atlas of Social Protection Indicators of Resilience and Equity* dataset (ASPIRE) provides estimations of the benefit incidence of social insurance and social assistance by income quintiles as percentages of the benefit incidence to the total population (see Holland 2018).[10] Information on social insurance and social assistance recipients originates from household surveys. Social insurance refers to contribution-based programs. Social assistance includes universal programs and also conditional cash transfers (CCTs).

I consider the benefit incidence of social insurance going to the top quintile (*SI benefit Q5*) relative to the social insurance incidence of the population and the respective measure for the share of social insurance received by the lowest quintile (*SI benefit Q1*). I also use the percentage of social assistance benefits received by the lowest quintile (*SA benefit Q1*) as a control, since the welfare state often deploys both social insurance and social assistance programs. An increase in social assistance benefits to the poor reflects a more generous targeted, means-tested welfare system (rather than universalism, since very few countries have universal social policy programs like Bolivia's), whereas an increase in *SI benefit Q5* shows that the country fosters welfare programs that redistribute heavily to the better off. The distinction between social insurance and social assistance across income groups allows for testing whether the better-educated link their decision to enter the informal sector to welfare state generosity that maximizes social welfare in general (that is, an increase in *SA benefit Q1* or *SI benefit Q1*), or only to welfare benefits that accrue to their income group (*SI benefit Q5*).[11]

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

To measure institutional quality and thereby the capacity of the state to deliver public goods, I use data from the World Bank's Worldwide Governance Indicators (WGI, World Bank 2018c; see also Torgler and Schneider 2009). The indicators measure several dimensions of the state: control of corruption, rule of law, regulatory quality, voice and accountability, political stability, and government effectiveness (Kaufmann et al. 2010).[12] I use principal component analysis (PCA) to reduce the six indicators to a single dimension that reflects the underlying *institutional quality.*

Finally, I factor in how individuals perceive the performance of the state in providing public goods, since objective and perceived performance might differ. I use the individual's stated trust in public institutions and the state in general as indicators for perception of state capacity. LAPOP employs a battery of items on trust in public institutions, covering the state's executive, judiciary, and legislature.[13] High levels of trust in these diverse institutions should closely correlate with a general belief that the state is capable of delivering social benefits. As the answer categories range from 1 to 7, again I employ PCA to reduce the answers to one dimension of general institutional trust.[14]

In addition, aggregated data do not tell us how satisfied individuals are with what they receive, so we need a measure at the individual level. LAPOP asks about satisfaction with a broad set of public goods (LAPOP items sd1–sd12). I focus on public goods related to the welfare state (education, health care, and housing) and combine the information (the answer categories are yes/no) to a single indicator (called *public goods dissatisfaction*; higher values indicate more dissatisfaction) through multiple correspondence analysis (MCA.) However, this information is available only for LAPOP 2008. In order to control for general service satisfaction in both survey years, I make use of a more general question on satisfaction about services provided by the municipality (SGL1) as a proxy for the public goods dissatisfaction variable in further model specifications.[15]

## Estimation Model

The dependent variable is a dichotomous measure, so a logistical model is applied. I use a varying-intercept hierarchical model, allowing the intercept to vary across countries. The dependent variable reflects the likelihood of being a self-employed worker in the informal sector. Following the notation used in Gelman and Hill (2007), I specify the model for i = 1, ...I (individuals) and j = 1, . . . J (countries) as follows:

$$\Pr(y_i = 1) = \text{logit}^{-1}(\alpha_j + \beta_i X_i + \beta_i K_i + \beta_j U_j)$$
$$\alpha_j \sim N(\gamma_0^{\alpha} + \gamma_1^{\alpha} Z_j + \gamma_2^{\alpha} U_j, \sigma_{\alpha}^2)$$

Microlevel independent variables (trust in institutions and welfare goods satisfaction) are demonstrated by $K$, and $X$ is a vector of microcontrols. The vector $Z$ reflects a set of independent variables at the macro level: institutional quality and welfare indicators. $U$ illustrates a vector of macrocontrol variables, and $\sigma$ is the stan-

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

dard deviation of the country-level errors. I add an interaction term for the "exit seekers" and the respective independent variables *K* and *X*.

### Microcontrols

I measure income by the possession of a number of assets, as has become standard in studies on developing countries. With this information I create a wealth index using MCA (for a discussion, see Filmer and Pritchett 2001). Higher values reflect higher wealth. Education is operationalized with a measure for years of education. Alongside sociodemographic characteristics, such as gender (female), age, urban/rural, and marital status (married), I include an attitudinal control variable measuring social trust (dummy variable) in the robustness section.[16] D'Hernoncourt and Méon (2011) reveal that trust in others increases tax compliance, so this, too, could be a factor mitigating informalization.

### Macrocontrols

For robustness tests, I add a measure for rigidity of labor law (Heritage Foundation 2010). Higher values reflect less labor protection and thus, lower entry barriers for informal workers (see Saint-Paul et al. 1996). Moreover, it is a classical argument in the tax compliance literature that the tax rate matters for individual fiscal behavior (Hatipoglu and Ozbek 2011), because taxation influences net income. I use Gómez Sabaini and Jiménez's 2012 tax burden indicator (2008–2009 average).

Furthermore, informalization is influenced by the general demand for labor. If unemployment rates are high, formal employment is more difficult to find, due to the abundance of labor. A context of low labor demand, therefore, also reflects a context of low bargaining power for the individual. In this vein, a large informal economy that is already established can facilitate employment in the informal labor market. Information on unemployment rates (World Bank 2018b; see online appendix table S3) and a measure of the informal economy from Schneider et al. (2010) are used (for 2007, latest available data). The variable captures the wealth that is generated in the informal sector. Descriptive statistics and estimation results are displayed in the online supplementary material and briefly discussed below.

## Results

Table 1 shows estimation results for the likelihood of being an informal worker, with logistic coefficients. Starting with the analysis of public goods satisfaction and confidence in the government at the individual level, we find support for hypothesis 1 and limited support for H2 regarding the effect on the average individual. Dissatisfaction with public service provision exerts a positive impact on the average respondent's likelihood of being an informal sector worker at the 1 percent level of significance (M3).

A similar, reverse effect is detected for trust in institutions. The probability of working in the informal sector significantly decreases when trust in public institu-

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

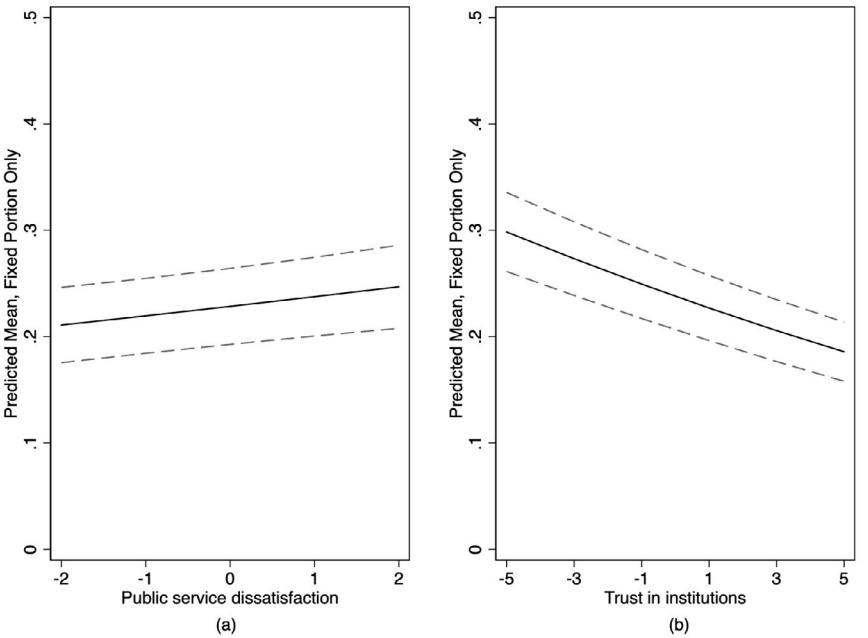
Table 1. Logistic Hierarchical Regression: Likelihood of Informality and Individual Attitudes

| DV: Informal Worker | (M 1) | (M 2) | (M 3) | (M 4) | (M 5) | (M 6) |
|---|---|---|---|---|---|---|
| **Micropredictors** | | | | | | |
| Years of education | –0.057*** | 0.094*** | | | | |
| | (0.003) | (0.010) | | | | |
| Years of education$^2$ | | –0.009*** | | | | |
| | | (0.001) | | | | |
| Higher edu | | | –0.694*** | –0.776*** | –0.707*** | –0.776*** |
| | | | (0.054) | (0.038) | (0.055) | (0.038) |
| Female | –1.359*** | –1.357*** | –1.444*** | –1.339*** | –1.444*** | –1.339*** |
| | (0.023) | (0.023) | (0.036) | (0.026) | (0.036) | (0.026) |
| Age | –0.005*** | –0.002* | –0.000 | –0.000 | –0.000 | –0.000 |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Urban | –0.082** | –0.101*** | –0.180*** | –0.132*** | –0.180*** | –0.132*** |
| | (0.026) | (0.026) | (0.041) | (0.029) | (0.041) | (0.029) |
| Wealth indicator | –0.265*** | –0.254*** | –0.249*** | –0.291*** | –0.248*** | –0.291*** |
| | (0.013) | (0.014) | (0.020) | (0.014) | (0.020) | (0.014) |
| Married | 0.244*** | 0.229*** | 0.242*** | 0.236*** | 0.242*** | 0.236*** |
| | (0.024) | (0.024) | (0.038) | (0.027) | (0.038) | (0.027) |
| Public service dissatisfaction | | | 0.053** | | 0.044* | |
| | | | (0.018) | | (0.019) | |
| Trust in institutions | | | | –0.071*** | | –0.071*** |
| | | | | (0.006) | | (0.006) |
| **Interaction Terms** | | | | | | |
| Higher edu × Public service dissatisfaction | | | | | 0.063 | |
| | | | | | (0.049) | |
| Higher edu × Trust in institutions | | | | | | 0.000 |
| | | | | | | (0.017) |
| 2010 | 0.121*** | 0.115*** | | 0.115*** | | 0.115*** |
| | (0.023) | (0.023) | | (0.025) | | (0.025) |
| Constant | 1.144*** | 0.497* | 0.841*** | 1.011*** | 0.839*** | 1.011*** |
| | (0.185) | (0.194) | (0.162) | (0.128) | (0.162) | (0.128) |
| **Random Effects Parameters** | | | | | | |
| Var (constant) | 0.675** | 0.721** | 0.230** | 0.190** | 0.230** | 0.190** |
| | (0.236) | (0.251) | (0.081) | (0.062) | (0.081) | (0.062) |
| N Level 1 | 53873 | 53873 | 21486 | 40933 | 21486 | 40933 |
| N Level 2 | 24 | 24 | 17 | 20 | 17 | 20 |
| Log-likelihood | –25422.59 | –25284.04 | –10287.96 | –20096.87 | –10287.13 | –20096.869 |
| Chi$^2$ | 4458.75 | 4625.46 | 1990.75 | 3784.28 | 1990.19 | 3784.34 |
| BIC | 50943.2 | 50677.0 | 20665.7 | 40299.9 | 20674.0 | 40310.6 |

$^+p < 0.10$, $^*p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$
Standard errors in parentheses.
Notes: Observations for public service dissatisfaction are available only for 2008. Information for institutional trust is missing for SUR, HIT, PAN and CRI.
Sources: LAPOP 2008, 2010; World Bank 2018a–c.

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

Figure 2. Predicted Probabilities for Table 1, M3 and M4



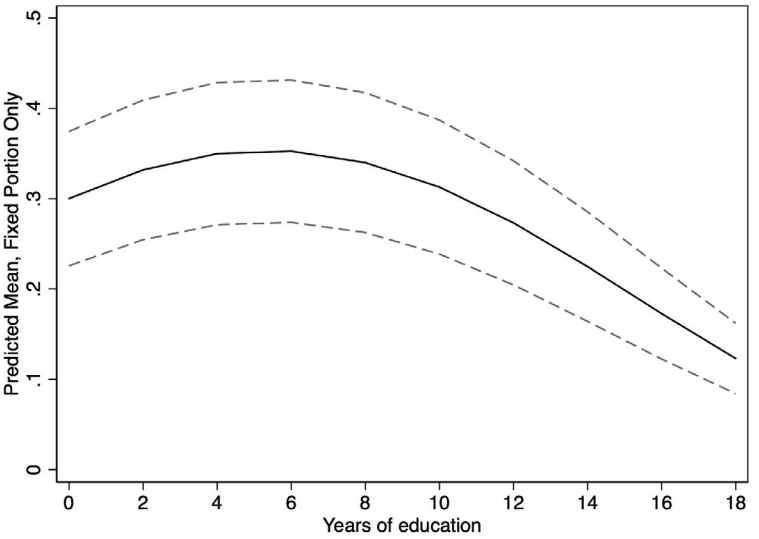

Source: LAPOP 2008, 2010

tions is high (M4). The coefficients are plotted as predicted probabilities in figure 2, with 95 percent confidence intervals to allow for a substantive interpretation of the results. Confidence intervals overlap for the dissatisfaction measure (panel a in figure 2), so we do not find large differences between highly satisfied or highly dissatisfied individuals; the differences are not significant, but the average effect is different from zero. Regarding institutional trust, the likelihood of being in the informal sector declines from roughly 30 percent for individuals who have no confidence in institutions to 20 percent for those who express high levels of trust (panel b in figure 2).

In line with the exclusion argument, findings also support the expectation of an influential education and wealth effect. Lack of income and schooling strongly increase the likelihood of informal labor, which is consistent with household survey evidence from LAC (see Perry et al. 2007). Figure 3 plots the predicted probabilities for the squared education term with 95 percent confidence intervals.[17] This determines the cutoff point that distinguishes potential exit seekers from the less privileged.[18] The slope declines most steeply and falls below the value of the illiterate at the point of completed secondary schooling, so that appears to be a reasonable cutoff point (respondents with 13 years of education and above).[19] The less well educated are, in any case, always more likely to be informal sector workers than the better-educated, as shown by the coefficient for the dichotomous variable *higher edu* in M3 and on.

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

Figure 3. Predicted Probabilities at Different Levels of Education, Table 1, M2




Source: LAPOP 2008, 2010

In contrast to the theoretical expectation, there is no significant difference between the well-educated and those with less schooling at different levels of dissatisfaction with public goods provision or institutional trust with regard to the likelihood of informal labor. Both interaction terms (M5 and M6) are insignificant. Negative perceptions of public goods provision and distrust in the state as a capable provider increase the odds of working in the informal sector across the board. While socioeconomic characteristics are highly determinant for informality, discontent with social policies and lack of institutional trust are equally important for the less well educated, illustrating more discretion among the less privileged than initially expected and providing further support for Perry et al.'s proposition (2007) that exit and exclusion are "complementary."

Table 2 displays the results for context effects. The predicted probabilities for the context effects from M7 to M9 are rendered in figure 4. The histogram shows the distribution of the macrolevel variable in the sample. An elitist, truncated social insurance system, which disproportionally benefits the top 20 percent in society, increases the chances of informality for the average respondent, as shown in panel a. By comparison, the larger the share of social assistance received by the lowest quintile, the lower the probability of informality, but the effect is not significant (panel b). An increase in social insurance for the lowest quintile surprisingly indicates a positive correlation with the likelihood of informal sector employment, but it has to be noted that only a very small fraction of social insurance goes to Q1 (0–6 percent; see panel c), compared to the scale of SI benefits accruing to Q5 (30–85 percent).

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

Table 2. Logistic Hierarchical Regression: Likelihood of Informality, Welfare Provision, and Institutional Quality

| DV: Informal Worker | (M 7) | (M 8) | (M 9) | (M 10) | (M 11) | (M 12) | (M 13) |
|---|---|---|---|---|---|---|---|
| **Micropredictors** | | | | | | | |
| Higher edu | –0.741*** | –0.733*** | –0.775*** | –0.218 | –0.849*** | –0.595*** | –0.736*** |
| | (0.037) | (0.037) | (0.035) | (0.195) | (0.050) | (0.087) | (0.036) |
| Female | –1.392*** | –1.393*** | –1.349*** | –1.393*** | –1.396*** | –1.392*** | –1.350*** |
| | (0.025) | (0.025) | (0.023) | (0.025) | (0.025) | (0.025) | (0.023) |
| Age | –0.001 | –0.001 | –0.001+ | –0.001 | –0.001 | –0.001 | –0.001+ |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Urban | –0.106*** | –0.090** | –0.108*** | –0.104*** | –0.087** | –0.107*** | –0.107*** |
| | (0.028) | (0.028) | (0.026) | (0.028) | (0.028) | (0.028) | (0.026) |
| Wealth indicator | –0.269*** | –0.290*** | –0.274*** | –0.269*** | –0.290*** | –0.270*** | –0.275*** |
| | (0.014) | (0.014) | (0.013) | (0.014) | (0.014) | (0.014) | (0.013) |
| Married | 0.211*** | 0.196*** | 0.227*** | 0.210*** | 0.195*** | 0.211*** | 0.226*** |
| | (0.025) | (0.026) | (0.024) | (0.025) | (0.026) | (0.025) | (0.024) |
| Service satisfaction | –0.168*** | –0.178*** | –0.167*** | –0.168*** | –0.178*** | –0.168*** | –0.166*** |
| | (0.026) | (0.026) | (0.025) | (0.026) | (0.026) | (0.026) | (0.025) |
| **Macropredictors** | | | | | | | |
| SI benefits Q5 | 0.013* | 0.024** | | 0.014** | 0.024** | 0.013* | |
| | (0.005) | (0.008) | | (0.005) | (0.008) | (0.005) | |
| SA benefits Q1 | –0.002 | | | –0.002 | | –0.002 | |
| | (0.002) | | | (0.002) | | (0.002) | |
| SI benefits Q1 | | 0.140** | | | 0.126** | | |
| | | (0.047) | | | (0.047) | | |
| Institutional quality | | | –0.360*** | | | | –0.368*** |
| | | | (0.080) | | | | (0.080) |

Table 2. Logistic Hierarchical Regression: Likelihood of Informality, Welfare Provision, and Institutional Quality (*continued*)

| DV: Informal Worker | (M 7) | (M 8) | (M 9) | (M 10) | (M 11) | (M 12) | (M 13) |
|---|---|---|---|---|---|---|---|
| **Interaction Terms** | | | | | | | |
| Higher edu × SI benefits Q5 | | | | –0.008** | | | |
| | | | | (0.003) | | | |
| Higher edu × SI benefits Q1 | | | | | 0.098*** | | |
| | | | | | (0.027) | | |
| Higher edu × SA benefits Q1 | | | | | | –0.005+ | |
| | | | | | | (0.003) | |
| Higher edu × Instit. quality | | | | | | | 0.059*** |
| | | | | | | | (0.017) |
| 2010 | 0.113*** | 0.079** | 0.136*** | 0.113*** | 0.077** | 0.114*** | 0.135*** |
| | (0.026) | (0.028) | (0.023) | (0.026) | (0.028) | (0.026) | (0.023) |
| Constant | 0.149 | –0.773 | 0.746*** | 0.064 | –0.766 | 0.137 | 0.744*** |
| | (0.385) | (0.596) | (0.192) | (0.386) | (0.596) | (0.385) | (0.193) |
| **Random Effects Parameters** | | | | | | | |
| Var (constant) | 0.244** | 0.355** | 0.741* | 0.244** | 0.353** | 0.245** | 0.744* |
| | (0.081) | (0.123) | (0.324) | (0.081) | (0.122) | (0.082) | (0.326) |
| N Level 1 | 45610 | 44820 | 53873 | 45610 | 44820 | 45610 | 53873 |
| N Level 2 | 19 | 18 | 24 | 19 | 18 | 19 | 24 |
| Log-likelihood | –22011.00 | –21365.29 | –25277.55 | –22007.35 | –21358.82 | –22009.30 | –25271.98 |
| $Chi^2$ | 4242.92 | 4121.30 | 4684.86 | 4244.76 | 4244.83 | 4128.90 | 4690.7436 |
| BIC | 4177.3817 | 4086.5091 | 4630.6706 | 4178.9836 | 4091.6456 | 4179.8242 | 4635.2132 |

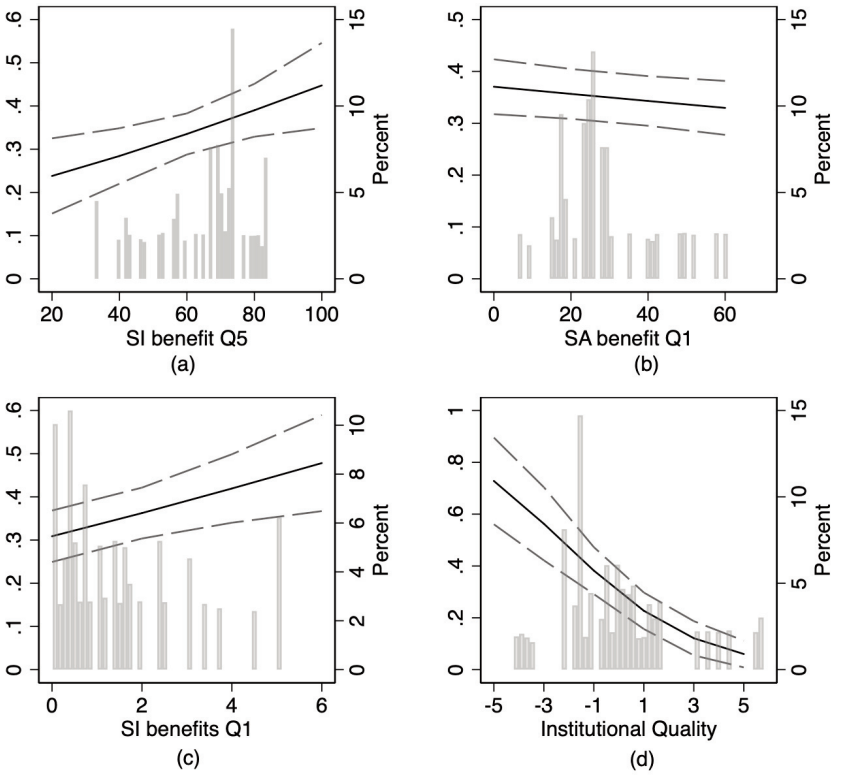
+p < 0.10, *p < 0.05, **p < 0.01, ***p < 0.001

Standard errors in parentheses.

Notes: Observations for *SI benefit Q5* are missing for Colombia in 2008 and 2010 and for Jamaica in 2008. *SI benefit Q1* is missing for Venezuela, Haiti, and Guyana, and for 2008 also for Colombia. *SA benefit Q1* is missing for Venezuela, Haiti, Jamaica, and for 2008 in Colombia and Uruguay. Belize is an outlier in *SI benefit Q1* with a value of 19% and excluded in M8 and M10.

Sources: LAPOP 2008, 2010; World Bank 2018a–c.

Figure 4. Predicted Probabilities, Table 2, M7–M9



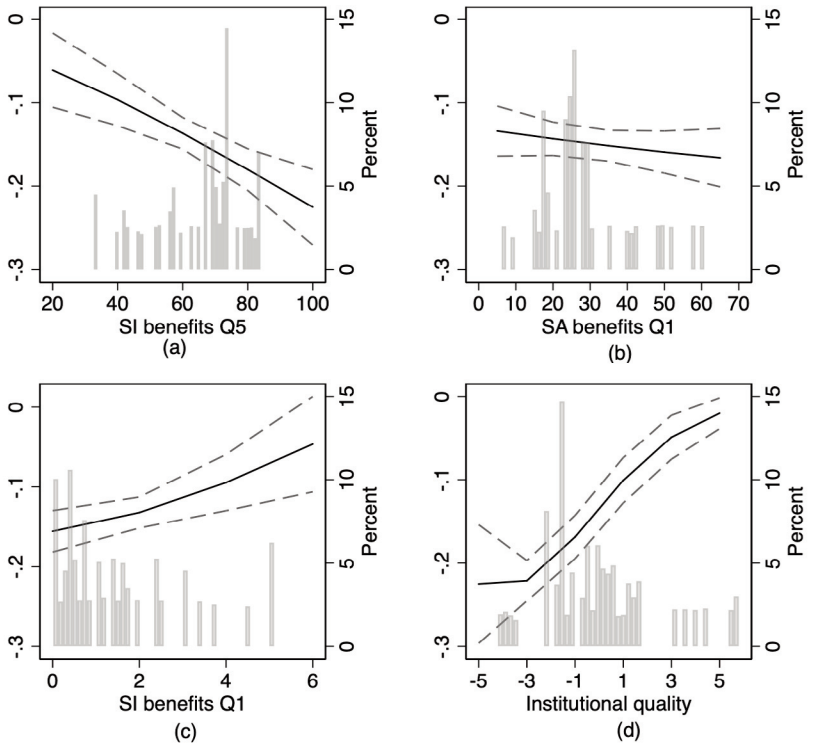

Source: LAPOP 2008, 2010; World Bank 2018a, c

Thus, small improvements in social insurance for the lowest income group first of all reduce the attractiveness of the formal sector, because, as Maloney (2004, 1165) emphasizes, "we have to remember that social protections are not free." Coverage by social insurance requires regular payroll contributions, and these can be very costly in the low-income sector, where turnover rates are high (and therefore it is more difficult to claim an insurance benefit) and the level of benefits still remains too low to equal the costs of mandatory contributions. This might explain why improving social insurance for the poor meets in its early stages with an increase in informality. Regarding the effect of actual governmental performance (*institutional quality*), a better institutional framework strongly decreases the likelihood of informal working, at the 0.1 percent level of significance (M9) for the average respondent (see figure 4, panel d).

The predicted probabilities for institutional quality in figure 4d show the slope steadily declining, meaning that the probability of being informally employed declines from above 70 percent, with increasing institutional quality, to 8 percent.

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

Figure 5. Average Marginal Effect for *Higher edu* at Different Levels of Macrolevel Indicators (table 2, M10–13)




Source: LAPOP 2008, 2010; World Bank 2018a, c

The findings speak particularly for the mechanism proposed in hypothesis 2a, that a more exclusive welfare state raises the likelihood that the average individual will work in the informal sector, whereas improvements in institutional capacity to provide public goods reduce the odds. However, better welfare provision for the poor (*SA benefits Q1*) does not significantly alter the probability of informality, contradicting hypothesis 2b.

Turning to the interaction term between the context factors and respondents with high levels of schooling, figure 5 reveals that the well-educated are, to a limited extent, responsive to welfare state returns. Figure 5 plots the average marginal effect (AME) for the highly educated at different levels of the respective welfare state indicator and institutional quality. The AME displays the change in the incidence rate of being an informal sector worker when moving from less or averagely educated (0) to the highly educated group (1). When the individual reaches a high degree of schooling, the odds of being an informal sector worker significantly decline the more social insurance benefits cluster in the highest quintile (table 2, M10; figure 5,

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

panel a). An elitist social insurance structure, then, reduces the likelihood of informality among potential exit seekers.

The pattern is reversed for an increase in social insurance benefits in Q1 (M11; figure 5, panel c). Here, moving into the highly educated group increases the likelihood of being in the informal sector, but the odds are still negative. The average marginal effects are all below 0, so the probabilities of being in the informal sector for the highly educated only move between less unlikely (approaching 0) and more unlikely (more negative values) at different levels of welfare generosity or institutional quality. This finding might be driven by the fact that the odds of the well-educated being in the informal sector are consistently lower compared to others. The positive slope for the AME at higher levels of institutional quality (figure 5, panel d) starkly contrasts to theoretical expectations. The marginal effect is most negative for the highly educated when institutional quality is poor, but the AME also only approaches 0 at the highest level of institutional quality.

Briefly to reflect on the control variables, we find a negative effect for female on the likelihood of being a self-employed informal. This is not surprising when we consider the measurement of informality in this analysis. Not all women who work in the informal sector are captured by the measurement of informal employment as applied here; many women identify as housewives and therefore end up in the 0 category of the DV. The gender coefficient therefore needs to be interpreted with caution. Being married increases the likelihood of informality, which might be driven by the fact that many households are mixed in type, with one formal worker and an informal spouse (Perry et al. 2007).

To summarize, the findings imply that lack of institutional capacity and individual trust in institutions and an insufficient, elitist welfare system are in line with an increased likelihood of informality for the average individual. No substantive effect appears for public goods dissatisfaction. I find only limited effects when distinguishing between individuals with more or less bargaining power; the predicted probabilities for both groups run in parallel, refuting this part of hypotheses 1, 2, and 2b.

## Sensitivity Tests

In order to assess the stability of the findings, I add further macrolevel variables that have been identified as theoretically relevant factors: tax burden, size of the informal economy, and rigidity of labor law, which increase barriers to entry (estimation results are displayed only in the online supplementary material). The effects for institutional trust and welfare satisfaction at the individual level remain robust when further macro controls for labor demography are added (see tables S2 and S3).[20] The findings for the interaction terms also remain substantively unchanged.

A higher tax burden increases the likelihood of informal work, but the effect is barely significant. A larger informal economy does not significantly influence the likelihood of informal work, whereas an increase in the unemployment rate negatively does so. This makes sense, factoring in that the unemployed are coded as part of the

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

nonemployed population. In addition, more flexible labor law, as designated in the Heritage Foundation's "freedom of labor" index (2010), goes along with a lower likelihood of informal work. Furthermore, one could argue that individuals opt for formal employment in times of increased economic vulnerability. The effects for attitudinal measures, institutional quality, and the interaction terms remain robust to the inclusion of trade openness and GDP per capita.[21] Adding an individual-level control variable for social trust does not alter the main findings. More trusting individuals are less likely to be informal. Moreover, the main findings are corroborated by the estimation results with data from the LAB (see online appendix, tables S9 and S10).[22]

## Panel Survey from Brazil

To reduce endogeneity concerns regarding the direction of the effect, I test how far the pattern revealed above holds when we can study actual transitions in labor market status. BEPS 2010 contains two consecutive waves that survey the respondent's employment status. I classify workers as informal based on the employment categories "self-employed" and "own account worker," and code them as informal only when the respondent indicates that he or she does not contribute to a pension plan, in order to exclude formal professionals from this group (all others are coded as formal/nonemployed workers).

Only 73 respondents switched from nonemployed/formal to informal, which is not surprising, given the short period of observation. However, we must keep in mind that some respondents identified as formal workers or nonemployed might have switched to informality immediately after the survey, so the DV is censored (this also holds for the cross-sectional analysis), requiring more complex analytical techniques, such as a hazard model, to properly test the theoretical argument. Due to the low variation and the brevity of the available panel observations, I present only simple correlations instead of specifying a regression model, which might demand too much of the data structure.

I use responses to a battery of items that investigate the respondent's perception that the government fights poverty (n1), corruption (n9), and unemployment (n12); promotes democracy (n3) and the economy (n15); and improves security (n11). Answer categories range from 1 = not at all to 7 = a lot. The latent dimension of government effectiveness is captured as a single indicator through PCA.[23] The correlation between labor market "switchers" (the government effectiveness indicator is available for only 60 of the 73 respondents) and a positive perception of government effectiveness is $\rho = -0.08$ and significant at the 5 percent level. The simple cross-table (table 3), comparing a dichotomized indicator for positive perception of government performance with a less positive perception, shows that more of those who switched from formal/nonemployed to the informal sector think that the government is not very effective (81.7 percent), compared to nonswitchers (74.1 percent). These findings are in line with the estimation results based on LAPOP and LAB data.

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

Table 3. Switching to Informality and Government Performance Attitude

| | | Government Performs Well | | |
|---|---|---|---|---|
| | | No | Yes | Total |
| Switch to Informal | No | 446<br>74.09% | 156<br>25.91% | 602<br>100% |
| | Yes | 49<br>81.67% | 11<br>18.33% | 60<br>100% |
| | Total | 495<br>74.77% | 167<br>25.23% | 662<br>100% |

Source: BEPS 2010 (waves 1 and 2)

## Conclusions

This article set out to elicit the extent to which working in the informal sector is a function of social policy discontent and lack of good governance by the state. It advances the microfoundation of informal labor markets by including institutional context and testing the exit rationale, which allows for decisionmaking freedom in employment sector choices. Many low- and middle-income countries pursue regressive and exclusive welfare programs (Huber and Stephens 2012), which benefit only particular groups in society and provide no certainty of support in times of need (Holland 2018). As the analysis reveals, shortcomings in a country's social policy and capacity to provide public goods can be a distinct part of the explanation for the persistent informal sector.

The contribution of this analysis is twofold. First, it finds support for the intuition that informal labor is to some degree a "vote" against the state. Public mistrust of the state as a reliable provider, a dysfunctional institutional framework, and an elitist welfare state increase the likelihood of informality. Second, to understand the development and growth of the informal sector, the analysis proposed that we need to distinguish voluntary from involuntary informality. As recent work from Baker and Velasco-Guachalla (2018) and Berens (2015b) has shown, there is little empirical evidence of a cleavage between informal and formal sector workers—both groups have similar social policy preferences. Some of this missing evidence for dualization might be related to the treatment of informal sector workers as a homogeneous group. However, findings confirm that individuals across the board take the welfare state structure and institutional quality into account.

To reduce the informal sector, it is important to reform the rules and regulations that are certainly decisive barriers to the formal labor market (De Soto 1989; Loayza 1996; Johnson et al. 1998; Djankov et al. 2002). Challenging existing accounts of informality, however, the analysis shows that in order to counter individuals' endeavors to work informally, a strategy based on positive incentives is required, increasing the utility to them of formal employment. This involves a wel-

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

fare state that accepts fragmented employment histories without punishing the individual by loss of eligibility (see Levy 2008). Moreover, governments need reliably to provide income security via universal social insurance and welfare services that are not undermined by corruption, clientelism, or mismanagement. While the well-educated might be more likely to enter informality when welfare programs become more generous toward lower-income groups, the size of the effect is not sufficient to pose a threat. In contrast, an elitist social policy incentivizes the average individual to be informal, so more inclusive welfare benefits could effectively persuade this group to enter or remain in the formal sector.

Research on informalization as applied here, however, is limited so far by the lack of observations over time, so that we cannot study the actual point of transition. Ideally, we need panel data observing individuals over a longer period of their employment history, so that we can study the decisionmaking process and also multiple transitions between the formal and informal labor markets during an individual's life cycle. These are important requirements for future research and data collection efforts.

## Notes

I am grateful to Marius Busemeyer and his team at the University of Konstanz; Claire Q. Evans, Florence Larocque, David Rueda, Benno Torgler, and Giancarlo Visconti; to the participants of the research seminar at the Cologne Center for Comparative Politics at the University of Cologne; at MPSA 2016; and REPAL 2017 for helpful comments and suggestions on earlier versions of this paper. I am particularly grateful to the two anonymous reviewers, whose critical comments were key to improving the manuscript. Finally, I gratefully acknowledge the use of data made available by the Latin American Public Opinion Project (LAPOP). LAPOP bears no responsibility for the analysis and interpretations presented in this paper; the author is exclusively responsible.

1. Public goods provision also encompasses a political dimension: how parties design and implement social policies. But I refrain from focusing directly on party performance because what matters is governmental performance on public goods provision over the long term. I therefore make use of social policy output measures.

2. I would like to thank an anonymous reviewer for this thought.

3. The pooled LAPOP 2008 and 2010 survey sample covers the following countries: MEX, GTM, ELS, HDN, NIC, CRI, PAN, COL, ECU, BOL, PER, PAR, CHL, URY, BRA, VEN, ARG, RDO, HIT, JAM, GUY, TTP, BLZ and SUR.

4. I use the health insurance item because it appears in both waves. Information on the respondent's possession of a pension plan (pen1) was surveyed only in 2010. In order to rule out misclassification of informality, I reestimate the models with the DV based on the identification of informal workers by the lack of a pension plan. The results for the individual-level variables remain robust; the interaction terms for *high edu* and *SI benefits Q5* and *high edu* and *institutional quality* are, however, not significant in these specifications (see table S7 in the online supplement).

5. LAPOP asks, "Do you have health insurance through your employer?" (ocup1c) in 2008. The item changes slightly in 2010 with an additional question (sal2) on type of health insurance plan. I exclude the self-employed who have a private insurance plan.

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

6. To test the robustness of the model, I also test informal versus the noninformal working population, excluding the nonemployed. The findings remain substantially unchanged and are available in the supplementary material (table S6).

7. Respondents are not asked about their previous employment status, so we cannot identify previous employment in either the formal or informal sector.

8. The intraclass coefficient (ICC) is 0.21.

9. Panel surveys are still rare in Latin America, and the few existing ones, such as the Mexican Election Panel Studies or the Argentine Panel Election Study (APES), are not sufficiently equipped to study the proposed argument. BEPS allows perceptions of governmental service provision and performance to be related to switches from formal or nonemployed to informal labor for a limited set of respondents. But because of the small sample size, the analysis performed here is only descriptive.

10. The benefit incidence measures the "percentage of benefits going to each group/quintile of the posttransfer (or pretransfer) welfare distribution relative to the total benefits going to the population" (World Bank 2018a). I use the posttransfer values.

11. In order to test the interaction between the well-educated group and *SI benefit Q5* and *SA benefit Q1*, I also control for benefits received by either the lowest or highest quintile in the alternative program, to take the overall generosity of the welfare state into account.

12. For a discussion on data quality of the WGI see Langbein and Knack 2010.

13. I include information on trust in the legislature, the government, the justice system, political parties, the local or municipal government, the armed forces, the national police, the prime minister or president, and the Supreme Court.

14. The institutional trust indicator is missing for SUR, HIT, PAN, and CRI.

15. The correlation between the public goods dissatisfaction variable and satisfaction about services provided at the municipality level is –0.19.

16. A further important attitudinal control variable is the individual's tax morale, but LAPOP does not ask this information. Tax morale also accounts for the size of the informal sector, as the academic debate has shown (Torgler 2005; Saavedra and Tommasi 2007). Controlling for tax morale in the LAB estimations, where the data are available, does not alter the main findings. Estimation results based on LAB data are provided in the online appendix, table S9.

17. The plot is based on AMEs for the predicted probabilities of education, showing the incidence rate for informal self-employment at different levels of education.

18. The likelihood of becoming an informal self-employed worker is higher at very low levels of education (complete primary education), close to 30 percent, but steadily decreases, so that more years of education reduce the likelihood. Without the squared term for education, *years of education* yields a strong negative coefficient, and predicted probabilities show that the likelihood of informality steadily declines with each additional year of schooling.

19. To test the robustness of the cutoff point, and in order to rule out arbitrariness, I test a higher (15 and more years of education) and a lower cutoff point (12 and more years of education) as well. The effects for the independent variables remain robust for 15 years of schooling and above. The effect for the interaction term between *high edu* and *SI benefit Q5* is, however, not significant for the 12-year specification, confirming that the effect is driven by very high levels of education (see supplement, tables S4 and S5).

20. The independent variables *institutional quality*, *SI benefits Q5*, and *SA benefits Q1* have to be tested in separate models, as they are correlated. Moreover, while it is important to control for further context effects, free parameters are very limited because of the low number of observations at level 2.

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

21. See supplement, table S2. *Trade openness* is measured as (imports + exports)/GDP.

22. Confidence in the government goes with a lower likelihood of being an informal sector worker, whereas dissatisfaction with public services (especially hospitals) increases the odds of informality (table S9). Again, the interaction terms with the exit seekers do not yield significant results for the individual-level variables. The welfare generosity measures follow the same pattern (see figure S4), but as the LAB only covers 18 Latin American states and missing observations for some country-years lead to an *N* of 16, findings from the hierarchical models need to be treated with caution. The interaction term between *higher edu* and *SI benefit Q5* also shows the same pattern, but narrowly misses conventional levels of significance (see figure S5 in the supplement).

23. Only a reduced set of questions was repeated in the second wave of BEPS, so the measurement of social policy satisfaction and institutional quality is limited.

## References

Allingham, Michael G., and Agnar Sandmo. 1972. Income Tax Evasion: A Theoretical Analysis. *Journal of Public Economics* 1, 3-4: 323–38.

Alm, James, Gary H. McClelland, and William D. Schulze. 1992. Why Do People Pay Taxes? *Journal of Public Economics* 48, 1: 21–38.

Altamirano, Melina. 2019. Economic Vulnerability and Partisanship in Latin America. *Latin American Politics and Society* 62, 2 (Fall): 80–103.

Ames, Barry, Fabiana Machado, Lucio Rennó, David Samuels, Amy Erica Smith, and Cesar Zucco. 2013. The Brazilian Electoral Panel Studies (BEPS): Brazilian Public Opinion in the 2010 Presidential Elections. IDB Technical Note No. 508. Washington, DC: Inter-American Development Bank. https://publications.iadb.org/publications/english/document/The-Brazilian-Electoral-Panel-Studies-(BEPS)-Brazilian-Public-Opinion-in-the-2010-Presidential-Elections.pdf

Baker, Andy, and Vania Ximena Velasco-Guachalla. 2018. Is the Informal Sector Politically Different? (Null) Answers from Latin America. *World Development* vol. 102: 170–82.

Berens, Sarah. 2015a. Between Exclusion and Calculating Solidarity? Preferences for Private Versus Public Welfare Provision and the Size of the Informal Sector. *Socioeconomic Review* 13, 4: 651–78.

———. 2015b. Preferences on Redistribution in Fragmented Labor Markets in Latin America and the Caribbean. *Journal of Politics in Latin America* 7, 3: 117–56.

Berens, Sarah, and Achim Kemmerling. 2019. Labor Divides, Informality, and Regulation: The Public Opinion on Labor Law in Latin America. *Journal of Politics in Latin America* 11, 1: 23–48.

Brooks, Sarah M. 2009. *Social Protection and the Market in Latin America*. Cambridge: Cambridge University Press.

———. 2015. Social Protection for the Poorest: The Adoption of Antipoverty Cash Transfer Programs in the Global South. *Politics and Society* 43, 4: 551–82.

Carnes, Matthew E. 2014. Hooking Workers and Hooking Votes: Enganche, the Extension of Suffrage, and the Institutional Origins of Labor Market Dualism in Latin America. *Latin American Politics and Society* 56, 2: 93–114.

Carnes, Matthew E., and Isabela Mares. 2014. Coalitional Realignment and the Adoption of Noncontributory Social Insurance Programmes in Latin America. *Socioeconomic Review* 12, 4: 695–722.

Dabla-Norris, Era, Mark Gradstein, and Gabriela Inchauste. 2008. What Causes Firms to Hide Output? The Determinants of Informality. *Journal of Development Economics* 85, 1: 1–27.

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press

De Soto, Hernando. 1989. *The Other Path: The Invisible Revolution in the Third World*. New York: Harper and Row.

D'Hernoncourt, Johanna, and Pierre-Guillaume Méon. 2011. The Not So Dark Side of Trust: Does Trust Increase the Size of the Shadow Economy? *Journal of Economic Behavior and Organization* 81, 1: 97–121.

Djankov, Simeon, Rafael La Porta, Florencio López de Silanes, and Andrei Shleifer. 2002. The Regulation of Entry. *Quarterly Journal of Economics* 117, 1: 1–37.

Feige, Edgar L. 1990. Defining and Estimating Underground and Informal Economies: The New Institutional Economics Approach. *World Development* 18, 7: 989–1002.

Feld, Lars P., and Bruno S. Frey. 2007. Tax Compliance As the Result of a Psychological Tax Contract: The Role of Incentives and Responsive Regulation. *Law and Policy* 29, 1: 102–120.

Fernández-Albertos, José, and Dulce Manzano. 2016. Dualism and Support for the Welfare State. *Comparative European Politics* 14, 3: 349–75.

Filmer, Deon, and Lant H. Pritchett. 2001. Estimating Wealth Effects Without Expenditure Data—Or Tears: An Application to Educational Enrollments in States of India. *Demography* 38, 1: 115– 32.

Friedman, Eric, Simon Johnson, Daniel Kaufmann, and Pablo Zoido-Lobaton. 2000. Dodging the Grabbing Hand: The Determinants of Unofficial Activity in 69 Countries. *Journal of Public Economics* 76, 3: 459–93.

Gelman, Andrew, and Jennifer Hill. 2007. *Data Analysis Using Regression and Multilevel/Hierarchical Models*. Cambridge: Cambridge University Press.

Gómez Sabaini, Juan Carlos, and Juan Pablo Jiménez. 2012. Tax Structure and Tax Evasion in Latin America. Macroeconomía del Desarrollo Serie 118. Santiago, Chile: CEPAL.

Günther, Isabel, and Andrey Launov. 2012. Informal Employment in Developing Countries: Opportunity or Last Resort? *Journal of Development Economics* 97, 1: 88–98.

Hart, Keith. 1973. Informal Income Opportunities and Urban Employment in Ghana. *Journal of Modern African Studies* 11, 1: 61–89.

Hatipoglu, Ozan, and Gulenay Ozbek. 2011. On the Political Economy of the Informal Sector and Income Redistribution. *European Journal of Law and Economics* 32, 1: 1–19.

Heritage Foundation. 2010. *2010 Index of Economic Freedom*. Chap. 7, The Countries—Full Listing. Technical Report. Washington, DC: Heritage Foundation. https://www.heritage.org/index/pdf/2010/index2010_full.pdf

Hirschman, Albert O. 1970. *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States*. Cambridge: Harvard University Press.

Holland, Alisha. 2018. Diminished Expectations: Redistributive Preferences in Truncated Welfare States. *World Politics* 70, 4: 555–94.

Holland, Alisha. and Ben Ross Schneider. 2017. Easy and Hard Redistribution: The Political Economy of Welfare States in Latin America. *Perspectives on Politics* 15, 4 (December): 988–1006.

Huber, Evelyne, and John D. Stephens. 2012. *Democracy and the Left: Social Policy and Inequality in Latin America*. Chicago: University of Chicago Press.

Huberts, Alyssa, and Fabiana Velasques de Paula Machado. 2015. Brazilian Electoral Panel Studies. (BEPS). Database. Washington, DC: Inter-American Development Bank. https://publications.iadb.org/en/publication/12807/brazilian-electoral-panel-studies-beps. Accessed June 2018.

International Labour Office (ILO). 2002. Decent Work and the Informal Economy. Technical report. Geneva: ILO.

———. 2018. ILOSTAT: Key Indicators of the Labour Market (KILM)—Informal Employment. https://www.ilo.org/ilosta. Accessed December 2018.

Johnson, Simon, Daniel Kaufmann, and Pablo Zoido-Lobaton. 1998. Regulatory Discretion and the Unofficial Economy. *American Economic Review* 88, 2: 387–92.

Jonasson, Erik. 2012. Government Effectiveness and Regional Variation in Informal Employment. *Journal of Development Studies* 48, 4: 481–97.

Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi. 2010. The Worldwide Governance Indicators: Methodology and Analytical Issues. World Bank Policy Research Working Paper no. 5430. Washington, DC: World Bank.

Langbein, Laura, and Stephan Knack. 2010. The Worldwide Governance Indicators: Six, One, or None? *Journal of Development Studies* 46, 2: 350–70.

Latin American Public Opinion Project (LAPOP). 2008, 2010. AmericasBarometer. www.LapopSurveys.org. Accessed June 2018.

Levy, Santiago. 2008. *Good Intentions, Bad Outcomes: Social Policy, Informality, and Economic Growth in Mexico*. Washington, DC: Brookings Institution Press.

Lindert, Kathy, Emmanuel Skoufias, and Joseph Shapiro. 2006. Redistributing Income to the Poor and the Rich: Public Transfers in Latin America and the Caribbean. Social Safety Nets Primer Series. Washington, DC: World Bank.

Lloyd-Sherlock, Peter. 2009. Social Policy and Inequality in Latin America: A Review of Recent Trends. *Social Policy and Administration* 43, 4: 347–63.

Loayza, Norman V. 1996. The Economics of the Informal Sector: A Simple Model and Some Empirical Evidence from Latin America. *Carnegie-Rochester Conference Series on Public Policy* 45: 129–62.

Loayza, Norman V., and Jamele Rigolini. 2011. Informal Employment: Safety Net or Growth Engine? *World Development* 39, 9: 1503–15.

Loayza, Norman V., Luis Servén, and Naotaka Sugawara. 2009. Informality in Latin America and the Caribbean. World Bank Policy Research Working Paper no. 4888. Washington, DC: World Bank.

Maloney, William F. 2004. Informality Revisited. *World Development* 32, 7: 1159–78.

Mares, Isabela. 2005. Social Protection Around the World: External Insecurity, State Capacity, and Domestic Political Cleavages. *Comparative Political Studies* 38, 6: 623–51.

Pagés, Carmen, and Marco Stampini. 2009. No Education, No Good Jobs? Evidence on the Relationship Between Education and Labor Market Segmentation. *Journal of Comparative Economics* 37, 3: 387–401.

Perry, Guillermo E., William F. Maloney, Omar S. Arias, Pablo Fajnzylber, Andrew D. Mason, and Jaime Saavedra-Chanduvi. 2007. *Informality: Exit and Exclusion*. Washington, DC: World Bank.

Rothstein, Bo. 2011. *The Quality of Government: Corruption, Social Trust, and Inequality in International Perspective*. Chicago: University of Chicago Press.

Rueda, David, and Daniel Stegmueller. 2016). The Externalities of Inequality: Fear of Crime and Preferences for Redistribution in Western Europe. *American Journal of Political Science* 60, 2: 472–89.

Saavedra, Jaime, and Mariano Tommasi. 2007. Informality, the State, and the Social Contract in Latin America: A Preliminary Exploration. *International Labour Review* 146, 3–4: 279–309.

Saint-Paul, Gilles, Charles R. Bean, and Giuseppe Bertola. 1996. Exploring the Political Economy of Labour Market Institutions. *Economic Policy* 11, 23: 265–315.

Schneider, Friedrich, Andreas Buehn, and Claudio Montenegro. 2010. Shadow Economies All Over the World. World Bank Policy Research Working Paper no. 5356. Washington, DC: World Bank.

Slemrod, Joel, and Shlomo Yitzhaki. 2002. Tax Avoidance, Evasion, and Administration. In *Handbook of Public Economics*, vol. 3, ed. A .J. Auerbach and Martin Feldstein. Amsterdam: Elsevier Science. 1423–70.

Steenbergen, Marco R., and Bradford S. Jones. 2002. Modeling Multilevel Data Structures. *American Journal of Political Science* 46, 1: 218–37.

Torgler, Benno. 2005. Tax Morale in Latin America. *Public Choice* 122, 1: 133–57.

Torgler, Benno, and Friedrich Schneider. 2009. The Impact of Tax Morale and Institutional Quality on the Shadow Economy. *Journal of Economic Psychology* 30, 2: 228–45.

Wibbels, Erik, and John Ahlquist. 2011. Development, Trade, and Social Insurance. *International Studies Quarterly* 55, 1: 125–49.

World Bank. 2018a. *Atlas of Social Protection Indicators of Resilience and Equity* (ASPIRE). Dataset. http://datatopics.worldbank.org/aspire/home. Accessed December 2018.

———. 2018b. World Development Indicators (WDI). www.databank.worldbank.org/source/world-development-indicators. Accessed December 2018.

———. 2018c. Worldwide Governance Indicators (WGI). www.govindicators.org. Accessed December 2018.

## Supporting Information

Additional supporting materials may be found with the online version of this article at the publisher's website: Appendix

https://doi.org/10.1017/lap.2019.58 Published online by Cambridge University Press