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From lower levels of formality to a formal firm in Ecuador: Short-run evidence

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Abstract

This paper evaluates the impact of an entry deregulation on the change from a less formal business to a higher level of formality of a business in Ecuador by analyzing a recent reform called Sociedad por Acciones Simplificadas (SAS). We use novel and under-explore administrative data sets and apply a difference-in-difference approach comparing the physical (in-person) to the electronic firm creation schemes, before and after the policy implementation. We find that the reform does not increase the probability of changing from a less formal business to the highest level of formalization in the short-run.

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1 Introduction

It is well known that the reduction of red tape promotes the creation of new formal firms (see, for example, Djankov, 2009). In addition, it also helps in the formalization of informal businesses and contributes to the transition of enterprises, with lower levels of formalization, from a form of individuals-taxpayer to a formal business entity which can improve competition, lower prices for consumers, favor productivity, innovation, employment growth, and GDP (see, for example, Ciccone and Papaioannou, 2007).[1]

The idea that reducing bureaucratic procedures positively affects economic dynamics is not new. For example, De Soto (1989) and Djankov et al. (2002) who were the pioneers in studying this relationship, argue that burdensome procedures, costs, and high regulation for firm entry can be detrimental to the creation of formal firms and economic growth. Following these studies, there have been a significant number of papers that have analyzed this relationship, including several countries in their analysis, which limits the conclusions regarding cause-effect relationships. However, recently in the interest of finding causal relationships, some studies analyze within-country analysis examining the impact of entry regulations on several economic outcomes (see, for example, Bruhn, 2011; Kaplan et al., 2011; Bripi, 2016). The idea behind analyzing countries separately is to find specific public policies in each country that have affected business creation from the perspective of reducing bureaucracy. This helps to find exogenous policies that have a causal effect.

For example, Fajnzylber et al. (2011) and Monteiro and Assunção (2012) evaluated the SIMPLES reform, which was implemented in Brazil to reduce and simplify the tax system for micro and small firms. They found that the program led to an increase in the formalization rates of about 11 and 13 percentage points, respectively. However, the findings of Monteiro and Assunção (2012) are only valid for the retail sector; Piza (2018) argues that the difference in the results of the previous studies that analyzed the SIMPLES reform is due to the date each study used as a program implementation, thus, by using the real date of the program implementation the author found that the program did not affect formalization rates. Rocha et al. (2018) estimate the effects of a large-scale formalization program in Brazil, the Individual Micro-Entrepreneur Program (IMP) that substantially reduced formalization costs: registration costs, both monetary and non-monetary, it also reduced taxes and red tape associated with tax payments. The authors found that reducing registration costs has no effect on firm informality, but reducing the tax burden does increase formalization.

In addition, Floridi et al. (2020) argue that governments and policymakers promote formalization through various interventions ranging from the simplification of registration procedures to increased law enforcement. The authors did a meta-analysis that examined the empirical literature on the impact of such formalization interventions and found no evidence for increased formalization associated with the so-far implemented interventions. A similar conclusion is obtained by Ulyssea (2020) who argue that lowering the costs of formality is not an effective policy to reduce informality but may generate positive aggregate effects, such as higher output and total factor productivity (TFP). However, Jessen and Kluve (2021) mention that tax incentives and information interventions seem to be particularly effective formalization interventions.

This paper evaluates the short-run impact of an entry deregulation on the change from a less formal business to a higher level of formality of a business in Ecuador by analyzing a recent reform called

[1] For a detailed literature review in this topic see: Ulyssea (2020) and Bruhn and McKenzie (2014).

Sociedad por Acciones Simplificadas (SAS), implemented on May 2020, that substantially reduced red tape by eliminating the notarial and mercantile registration costs, reduced the time of firm creation from several weeks to around 4 days, and the minimum capital requirement required from US$ 400 to US$ 1 that, in addition, could be paid in one year.[2] Our results suggest that the SAS reform does not increase the probability of changing from less formal business to the highest level of formalization in the short-run.

This paper contributes to the empirical literature on the impact of formalization interventions in several ways: 1) We use a new intervention in a developing country that is scarcely analyzed, 2) we use impact evaluation techniques that allow us to give causal conclusions, and 3) we use an unexplored database of the tax-payers authority in Ecuador.

The structure of this paper is as follows. An intuitive model is presented in section 2. Section 3 describes the data. The identification and empirical strategy are presented in section 4. The results are shown in section 5. Finally, section 6 concludes.

2 An intuitive model

Being a formal or informal business is a decision economic agents take based on the benefits and costs of both alternatives. It would be ideal to model the transition between informality to formality, however, due to data availability constraints we are not able to do this. Because of this, we focus on the increase in the number of new formal firms that can come from two sources, (1) from totally new businesses or businesses that were informal, and (2) from businesses registered under, what we call, a lower level of formality (basically individuals who pay taxes as a result of their economic activity). The Ecuadorian context is interesting in this issue since it has different levels of "formality". For example, a person could have a unique tax registration number (RUC) but is not obligated to have accountability; nevertheless, should pay taxes; the next level is a person that has a RUC but is obligated to have accountability and also to pay taxes; finally, a formal firm that have a RUC, is obligated to have accountability, pay taxes, pay contributions to Superintendencia de Compañías, Valores y Seguros (SCVS) and, sometimes is obligated to have an external audit.

With this in mind, we present a simple and intuitive model of the decision of individuals, in a setting of "less formal" firms, which might become a "more" formal firm. For this, we extend the notions of the model proposed by Ulyssea (2018, 2020) by augmenting the levels of formality in a context where every level has different fixed costs and different entry costs (costs of registration). Thus, the levels in our setting are (1) formal firm, (2) natural person obligated to accountability, (3) natural person not obligated to accountability, and (4) informal firm. The profit functions of the different levels of formal and informal firms are the following:

$$\pi_f(\omega) = (1-\tau_y)\omega F(k,l) - (1+\tau_w)w_f l - r_f k - \bar{c}_f \tag{1}$$

[2] Camino-Mogro and Armijos Bravo (2023) explain in detail the SAS reform and also show the impact of this reform on the creation of new firms.

and,

$$\pi_{npo}(\omega) = (1-\tau_y)\omega F(k,l) - (1+\tau_w)w_{npo}l - r_{npo}k - \overline{c}_{npo} \tag{2}$$

and,

$$\pi_{npno}(\omega) = (1-\tau_y)\omega F(k,l) - (1+\tau_w)w_{npno}l - r_{npno}k - \overline{c}_{npno} \tag{3}$$

and,

$$\pi_{i}(\omega) = (1-p(y(\omega)))\omega F(k,l) - w_i l - r_i k \tag{4}$$

where, ω denotes firms´ total factor productivity (TFP) of formal firm f, or natural person obligated to accountability *npo*, or natural person not obligated to accountability *npno* (entrepreneurs), or informal firm i; $F(k,l)$ is the production function; y is equivalent to $\omega F(k,l)$; τ_y is the value-added tax (VAT); l and k are the labor and capital inputs, w and r are the labor and capital prices, respectively; τ_w is the payroll tax; $\overline{c}$ denotes the per-period fixed cost of operation that the different levels of formality must pay and captures administrative burden taxes, contributions, external audit and others (see, for example, Djankov et al., 2010), thus, we could assume that $\overline{c}_f > \overline{c}_{npo} > \overline{c}_{npno}$ because in this intuitive model, formal firms ff have higher administrative burden taxes, contributions and external audit than natural person obligated to accountability *npo* and natural person not obligated to accountability *npno* (entrepreneurs), as *npo* and *npno* levels of "formality" do not pay external audit and contributions to the firm regulator such as f. Finally, $p(y(\omega))$ is the cost of informality such as not having greater access to credit, participation in government contracts, and better contract terms with suppliers or customers (Bruhn and McKenzie, 2014) which is assumed to be increasing and convex in firms´ output (see, for example, Ulyssea, 2018).

We assume that TFP in periods $t+k$ is known by the firm, but the firm is vulnerable to exogenous shocks that could generate its closure, denoted by δ_s. Similar to Ulyssea (2020), we suppose that firms´ value functions of different levels of formality are given by the present value of the infinite stream of profits, discounted by the exogenous shock of exit probability, $V_s = \frac{\pi_s(\omega)}{\delta_s}$. The different levels of formal and informal value functions are the following:

$$V_f(\omega) = \frac{\omega F(k,l)}{\delta_f} - \frac{w_f l + r_f k}{\delta_f} - \frac{\tau_y \omega F(k,l) + \tau_w w_f l + \overline{c}_f}{\delta_f} \tag{5}$$

and,

$$V_{npo}(\omega) = \frac{\omega F(k,l)}{\delta_{npo}} - \frac{w_{npo} l + r_{npo} k}{\delta_{npo}} - \frac{\tau_y \omega F(k,l) + \tau_w w_{npo} l + \overline{c}_{npo}}{\delta_{npo}} \tag{6}$$

and,

$$V_{npno}(\omega) = \frac{\omega F(k,l)}{\delta_{npno}} - \frac{w_{npno} l + r_{npno} k}{\delta_{npno}} - \frac{\tau_y \omega F(k,l) + \tau_w w_{npno} l + \overline{c}_{npno}}{\delta_{npno}} \tag{7}$$

and,

$$V_i(\omega) = \frac{\omega F(k,l)}{\delta_i} - \frac{w_i l + r_i k}{\delta_i} - \frac{p(y(\omega))\omega F(k,l)}{\delta_i} \tag{8}$$

An entrepreneur with a unique tax register (RUC), which is not (informal), or an informal "firm" decides to constitute a formal firm if:

$$V_f(\omega) - c^e{}_f > V_{npo}(\omega) - c^e{}_{npo} \geq V_{npno}(\omega) - c^e{}_{npno} > V_i(\omega) \tag{9}$$

where, c^e is the entry cost or registration cost of each level of formality that includes official and non-official payments to open and operate a new business, personnel, and managerial time spent dealing with required procedures and the minimum capital requirements needed to start a business (Djankov, 2009), in here, we suppose that $c^e{}_f > c^e{}_{npo} \geq c^e{}_{npno}$. In this setup, we summarize two costs of being formal and having different levels of formality. i) the entry cost denoted by c^e, and ii) the fixed cost denoted by $\frac{\tau_y \omega F(k,l) + \tau_w w_s l + \bar{c}_s}{\delta_s}$ where s is f, npo and $npno$ separately. The fixed costs correspond to taxes, contributions, and external audits. Policymakers would have several alternatives to stimulate a change from a lower level of formality to a higher one. First, reduce entry costs to a higher level compared to a lower level of formality, for example, the time it takes to create a firm, reduce the minimum capital requirement required, notary fees, mercantile registrar fees, etc. Second, reduce the fixed costs of maintaining a level of formality, for example reducing the costs associated with external audits, contributions and taxes (VAT). Third, increase the benefits of being a formal firm, for instance, increase the access to capital, reducing the interest rate of commercial and production loans, decrease the minimum wage of employees, or decrease the contribution to social security. Fourth, increase the costs associated with informality: $\frac{p(y(\omega))\omega F(k,l)}{\delta_i}$ through increased inspections of informal businesses, increased fines, and tougher laws.

3 Data

We use two administrative data sets provided by the Superintendencia de Compañías, Valores y Seguros (SCVS) and the Servicio de Rentas Internas (SRI) from January 2020 to mid-October 2020.[3] The first dataset from the SCVS which is "Creación de Compañías" contains information on the creation of new formal firms in Ecuador. The second dataset from the SRI which is "Catastro de RUC" has the opening, suspension, and closing information of all people who have a unique tax registration number (RUC) which are not obligated to have accountability, and people that are obligated to have accountability and also to pay taxes. The unit of observation is the firm creation and contains 6.074 formal firms across the country, during the period of analysis.

With this information, we construct the outcome of interest: a dummy variable that takes the value of one if at least 50% of a firm's shareholders have a RUC in the SRI with the same 4-digit ISIC code (in other words, the same economic activity of the new firm created) and they have also suspended

[3]This document performs a short-run analysis because after October 2020, SAS could be established electronically and no longer only physically. Additionally, in 2021, 2022 and 2023, several urgent economic laws were sent to the National Assembly of Ecuador. These laws, which were mostly approved, sought to encourage the attraction of investments in the country, both local and foreign investments, and benefited with greater incentives the establishment of new companies in the country, which could contaminate the treatment group in our analysis.

their (individual) RUC one month before or after the date of creation of the formal firm in the SCVS; and zero otherwise. Moreover, we construct the treatment and control groups. Similar to Camino-Mogro and Armijos Bravo (2023), we define the treated group as formal firms created under the physical (in-person) scheme as this was the group of firms that were affected by the new SAS reform. Before mid-October 2020, the reform did not allow a SAS firm to be created under an electronic scheme because of information and communication technologies (ICT) constraints. In this sense, the treatment group is made up of any kind of firms created under the physical scheme (in-person), for example, corporations, limited liability companies, and SAS firms (which could be created only under this scheme). For the control group, we consider the rest of the firms created, that is, firms created electronically. This group includes corporations and limited liability companies. Camino-Mogro and Armijos Bravo (2023) argue that the treatment and control groups are statistically indistinguishable from zero before the reform, which validates the identification strategy.

4 Methodology

To assess whether the number of new firms created has increased (as a result of the reform) at the transition from "less" formal levels (individual taxpayer) to a firm level formalization; we rely on the intuitive model explained in Section 2, where a decrease in entry costs to access a higher level of formalization may favor this transition.

To formally test the effect of *"Sociedad por Acciones Simplificadas"* (SAS), we rely on a difference-in-differences (DID) approach to test whether there is an increase in the share of new formal firms that used to be a physical-person fiscal entity before the reform, when we compare firms created through the electronic scheme with the physical one before and after the reform. For this, our econometric strategy compares the probability of creating a new formal firm if the firm has a lower level of formality compared to our control group (electronic scheme) after the reform. More formally, we relate the probability of creating a new formal firm outcome in province i, economic sector j, scheme s, and week t, in an equation of the form:

$$Y_{ijst} = \beta_0 + \beta_1 Post_t + \beta_2 Treat_s + \beta_3 Treat_s * Post_t + \rho_i + \mu_j + \pi_t + \gamma_{it} + \epsilon_{ijst} \tag{10}$$

where Y_{ijst} is a binary variable indicating whether the new firm has at least 50% of its shareholders have a RUC in the SRI with the same 4-digit ISIC code and they have also suspended their RUC for one month before or after the date of creation of the formal firm in the SCVS. $Post_t$ is a binary indicator that takes the value of one after SAS reform implementation, and zero otherwise, $Treat_s$ takes the value of one when the new firm is created by physical (in person) scheme and zero when the firm is created by the electronic scheme. The parameter of interest is β_3 which represents the impact of the policy on the new formal firm creation outcomes under the physical scheme relative to the electronic scheme. We include province ρ_i and economic sector μ_j fixed effects to account for time-invariant heterogeneity across provinces and economic activities, respectively; week π_t fixed effects to account for time variable shocks that equally affect provinces and economic sectors; we also include a province-specific time trend γ_{it} in order to control for time-variant shocks affecting provinces (e.g. inflation, institutional environment). We cluster standard errors at the scheme-week level since this is the level at which the effect takes

place, accounting for any unobserved common group effects (Cameron et al., 2011).[4] Finally, ϵ_{ijst} is the idiosyncratic error term.

Thus, we hypothesize that a decrease in the costs of entering the formality may increase the probability that businesses that used to operate only with a personal RUC -and not as firms- will go to the higher level of formality. However, in this exercise, we cannot test the probability of change between an informal business to a formal one since our database does not allow it. We expect that the reform has a positive impact on the likelihood of change from a less formal business to a higher level of formality of a business; nevertheless, it could happen that this effect does not come from the transfer of less formal businesses (people with RUC) but from the creation of new purely formal firms or the transition from informal to formal, the latter, as we have already mentioned, we cannot test.

Also, we evaluate possible differential pre-trends between the treatment and control groups, modifying the DID specification of equation (10) into an event study setting using four pre- and four post-policy implementation (months) periods. As suggested by the literature on event study designs (ESD), we set the reference category at one period (month) before the treatment (Freyaldenhoven et al., 2019). Formally, we estimate an equation of the form:

$$Y_{ijst} = \beta_0 + \beta_1 Post_t + \beta_2 Treat_s + \sum_{n=-4}^{4} \beta_3 Treat_s * Post_t + \rho_i + \mu_j + \pi_t + \gamma_{it} + \epsilon_{ijst} \tag{11}$$

In this specification, we also include all fixed effects, a province-specific time trend and we cluster standard errors at the scheme-week level, similar to equation (10). We expected not to find any significant β_3 coefficients before the policy implementation to satisfy the parallel trend assumption.

5 Results

One of the main objectives of this reform is to pursue the formalization of new businesses that are operating only with a taxpayer register and not as a formal firm. However, the results found by other authors regarding the effects of a policy that reduces monetary and non-monetary costs on the creation of formal firms are not conclusive, as we mention in Section 1.

In Table 1, we present the estimated coefficients of equation (10) for this specification. Overall, we see that the main coefficient of interest (β_3) is always not statistically significant at standard levels.[5] The result suggests that the reform has no impact on the likelihood of changing from a less formal business to a higher level of formality of a business. As we mentioned before, this could be happening because this effect does not come only from the transfer from less formal businesses but from the creation of purely new formal firms or the transition from informal to formal. This evidence is in concordance with other authors like Ulyssea (2020) and Floridi et al. (2020) whose argue that lowering the costs of formality is not an effective policy to reduce informality

Furthermore, and, in order to test the robustness of this evidence, we perform an ESD. In Figure 1, we plot estimates from equation (11) using four pre- and four post-reform (months) periods changing

[4] Standard errors are clustered at the scheme-week level (80 clusters) and computed using wild bootstrapped replications. For computation, we use the boottest Stata command (Roodman et al., 2019).

[5] We do not include the agriculture sector because there is no formal firm that is equal to one in the dummy dependent variable.

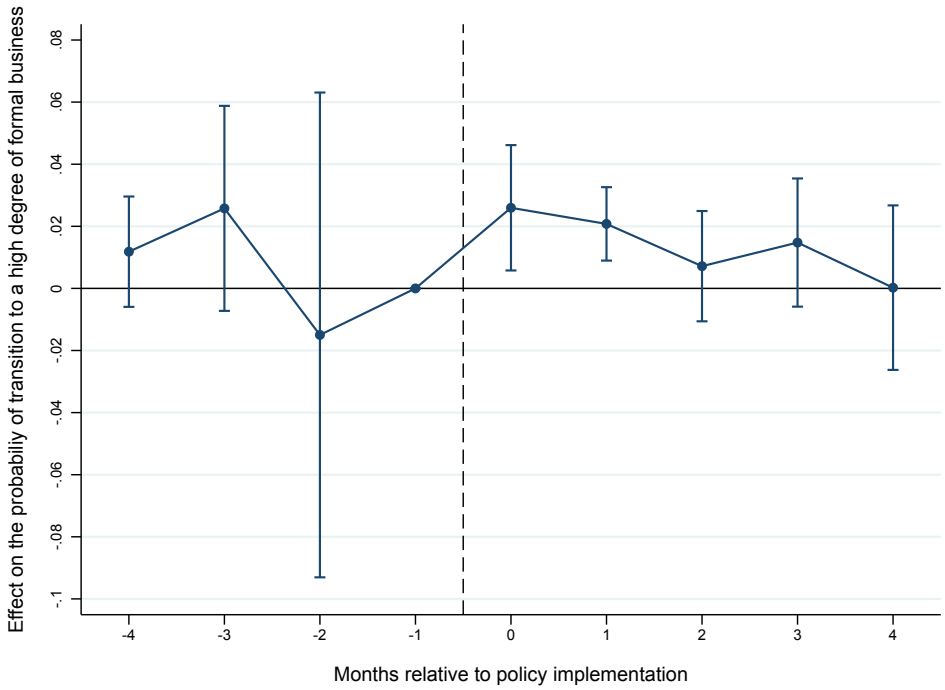
the outcome to provide some evidence in support of the parallel trends assumption. We find no evidence of differential pre-trends in our outcome of interest, and we also see a statistically significant increase after the beginning of the policy implementation; nevertheless, this effect diminishes over time. Again this adds validity to the identification strategy. Again, this evidence highlights what was found in Table 1. Overall, our finding suggests that informal firms are insensitive to formalization policies Floridi et al. (2020) such as reducing monetary and non-monetary costs.

Table 1: Effects of policy implementation to change from lower level of formality to formal firm

Variable	**All sectors**	**Manufactures**	**Construction**	**Services**
Treat	-0.0041	0.0001	-0.0365***	0.0031
	(0.0039)	(0.0013)	(0.0134)	(0.0060)
Post	0.0192	-0.0003	-0.0183	0.0258**
	(0.0124)	(0.0015)	(0.0249)	(0.0128)
Treat*Post	**-0.0018**	**0.0005**	**0.0165**	**-0.0079**
	(0.0073)	(0.0017)	(0.0330)	(0.0085)
Province FE	✓	✓	✓	✓
ISIC FE	✓	✓	✓	✓
Week FE	✓	✓	✓	✓
Trend	✓	✓	✓	✓
No. Obs.	6,074	445	709	4,580
R^2	0.0182	0.7495	0.0780	0.0185

Notes: OLS estimates of equation (10). Standard errors clustered at the scheme-week level (80), calculated using the wild cluster bootstrap with 999 replications.
$^{**}p < .05$, $^{***}p < .01$.

Figure 1: Event study design for the change from lower level of formality to formal firm



Notes: Event study design featuring 4 pre and 4 post policy implementation periods, plots coefficients along with their 95% confidence intervals. The reference category is one period before the event.

6 Conclusion

The results suggest that reducing red tape (monetary and non-monetary costs) does not increase the probability of changing from less formal business to being at the highest level of formalization in the short-run. This result may be associated with other factors that may influence the decision to go from being less formal to a full level of formality. One of those factors can be related to the economic and political stability of the country. Another factor may be that despite the decrease in business creation costs, there are other costs of remaining formal that are still high in Ecuador. In addition, our results are in concordance with the idea that interventions such as: i) cost and time reduction, (ii) benefit, and (iii) enforcement increasing do not have an impact on formalization in Ecuador. So, the Government might think about other policies to increase the formalization of firms such as: tax incentives for new formal firms and credit access. Finally, the findings found in this paper should be interpreted with caution since it is a short-run analysis. This effect needs to be analyzed over a longer period.

References

Bripi, F. (2016). The role of regulation on entry: evidence from the Italian provinces. *The World Bank Economic Review*, 30(2):383–411.

Bruhn, M. (2011). License to sell: The effect of business registration reform on entrepreneurial activity in Mexico. *The Review of Economics and Statistics*, 93(1):382–386.

Bruhn, M. and McKenzie, D. (2014). Entry regulation and the formalization of microenterprises in developing countries. *The World Bank Research Observer*, 29(2):186–201.

Cameron, A. C., Gelbach, J. B., and Miller, D. L. (2011). Robust inference with multiway clustering. *Journal of Business & Economic Statistics*, 29(2):238–249.

Camino-Mogro, S. and Armijos Bravo, G. (2023). Red tape reduction, more new firms? saving time and money: Evidence from an ecuadorian reform. *The Journal of Development Studies*, 59(5):691–715.

Ciccone, A. and Papaioannou, E. (2007). Red tape and delayed entry. *Journal of the European Economic Association*, 5(2-3):444–458.

De Soto, H. (1989). *The Other Path: The Economic Answer to Terrorism*. New York: Harper & Row.

Djankov, S. (2009). The regulation of entry: A survey. *The World Bank Research Observer*, 24(2):183–203.

Djankov, S., Ganser, T., McLiesh, C., Ramalho, R., and Shleifer, A. (2010). The effect of corporate taxes on investment and entrepreneurship. *American Economic Journal: Macroeconomics*, 2(3):31–64.

Djankov, S., La Porta, R., Lopez-de Silanes, F., and Shleifer, A. (2002). The regulation of entry. *The Quarterly Journal of Economics*, 117(1):1–37.

Fajnzylber, P., Maloney, W. F., and Montes-Rojas, G. V. (2011). Does formality improve micro-firm performance? evidence from the Brazilian simples program. *Journal of Development Economics*, 94(2):262–276.

Floridi, A., Demena, B. A., and Wagner, N. (2020). Shedding light on the shadows of informality: A meta-analysis of formalization interventions targeted at informal firms. *Labour Economics*, 67:101925.

Freyaldenhoven, S., Hansen, C., and Shapiro, J. M. (2019). Pre-event trends in the panel event-study design. *American Economic Review*, 109(9):3307–38.

Jessen, J. and Kluve, J. (2021). The effectiveness of interventions to reduce informality in low-and middle-income countries. *World Development*, 138:105256.

Kaplan, D. S., Piedra, E., and Seira, E. (2011). Entry regulation and business start-ups: Evidence from Mexico. *Journal of Public Economics*, 95(11-12):1501–1515.

Monteiro, J. C. and Assunção, J. J. (2012). Coming out of the shadows? estimating the impact of bureaucracy simplification and tax cut on formality in Brazilian microenterprises. *Journal of Development Economics*, 99(1):105–115.

Piza, C. (2018). Out of the shadows? revisiting the impact of the Brazilian simples program on firms' formalization rates. *Journal of Development Economics*, 134:125–132.

Rocha, R., Ulyssea, G., and Rachter, L. (2018). Do lower taxes reduce informality? evidence from Brazil. *Journal of Development Economics*, 134:28–49.

Roodman, D., Nielsen, M. Ø., MacKinnon, J. G., and Webb, M. D. (2019). Fast and wild: Bootstrap inference in Stata using boottest. *The Stata Journal*, 19(1):4–60.

Ulyssea, G. (2018). Firms, informality, and development: Theory and evidence from Brazil. *American Economic Review*, 108(8):2015–47.

Ulyssea, G. (2020). Informality: Causes and consequences for development. *Annual Review of Economics*, 12:525–546.