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HE WHO COUNTS ELECTS:
DETERMINANTS OF FRAUD IN THE 1922 COLOMBIAN PRESIDENTIAL ELECTION

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ABSTRACT

This paper constructs measures of the extent of ballot stuffing (fraudulent votes) and electoral coercion at the municipal level using data from Colombia's 1922 Presidential elections. Our main findings are that the presence of the state reduced the extent of ballot stuffing, but that of the clergy, which was closely imbricated in partisan politics, increased coercion. We also show that landed elites to some extent substituted for the absence of the state and managed to reduce the extent of fraud where they were strong. At the same time, in places which were completely out of the sphere of the state, and thus partisan politics, both ballot stuffing and coercion were relatively low. Thus the relationship between state presence and fraud is not monotonic.

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“What the conservatives won with arms cannot be taken away by a few slips of paper.”¹

1 Introduction

The preponderance of the literature on democracy in political science has focused on the origins and timing of the introduction of universal suffrage (e.g., Rueschemeyer, Stephens and Stephens, 1992, Collier, 1999, Acemoglu and Robinson, 2006). While this approach is surely justified in many cases, it also leaves aside many puzzles. For instance, Argentina had universal male suffrage after the promulgation of the 1853 constitution, as did Mexico after its 1857 constitution, but neither country is typically counted as a democracy in the 19th century. In fact, the typical date for the introduction of democracy in Argentina is the passing of the Saenz Peña Law in 1914 whose main aim was to eliminate electoral corruption and fraud, things which had previously negated the effects of universal male suffrage. This law had profound consequences, destabilizing the political status quo and allowing the Radical Party to assume power, a process ultimately leading to the coup of 1930 (Smith, 1978). This example, and others like it, such as the introduction of the secret ballot in Chile in 1957 (Baland and Robinson, 2008, 2012), suggest that the consequences of variation in electoral fraud are possibly as large as that of the variation in the formal institutions of democracy.

In this paper we develop a theoretical model of one type of electoral fraud, ballot stuffing, or creating fake votes. We study the trade-off between using fraud and offering standard policy concessions, specifically providing public goods and we study the determinants of fraud and public good provision. In the model two political parties compete for votes in a national election. Both offer a policy vector, but the incumbent party also has local political agents that can stuff ballots to inflate the national incumbent’s vote totals relative to the opposition. We assume that ballot stuffing is costly and destroys income, but that the stronger is the state the more it can penalize such illegal activities. The incumbent rewards the local politicians with transfers in exchange for stuffed ballots. In the model we distinguish between economic elites, who own assets such as land, and political elites who run the local parties, but we also parameterize the extent to which these groups coincide, or ‘overlap’. This creates a conflict of interest between these different sorts of elites since

¹In Spanish: “lo que los conservadores han ganado con las armas no se puede perder con papelitos.” El Espectador, February 10, 1922, quoted on Blanco et al. (1922) p. 306.

economic elites suffer from the consequences of fraud, but do not necessarily benefit from it, except to the extent that they overlap with the political elite. We therefore allow such elites to lobby (influence) the local politicians to reduce fraud.

The model generates three main testable results for the incidence of fraud. First, the extent of ballot stuffing should be negatively correlated with the strength of the state. This is because greater state strength makes stuffing more costly, reducing the extent of it in equilibrium. Second, higher land inequality should be correlated with less ballot stuffing. This is because when inequality is higher, local economic elites suffer greater losses from the chaos that goes along with fraudulent elections and they oppose it more. Third, the greater is the extent of overlap, the more ballot stuffing there is, other things equal. Greater overlap means that local economic and political elites coincide more, implying that economic elites put more weight on the rents generated by supplying votes to national politicians and they therefore prefer more of it. These results have intuitive corollaries for the provision of public goods. Public good provision is higher, the greater is the strength of the state, the higher is land inequality, and the lower is overlap.

To test the implications of the model we construct a unique, though necessarily imperfect, measure of the extent of fraudulent voting or ‘ballot stuffing’ at the municipal level in the 1922 Colombian presidential election. We do this by combining data collected on the vote totals reported by municipal electoral boards (*Jurados Electorales*) to the central government with estimates of the maximum potential franchise from the 1918 population census. This gives us at least a lower bound on the extent of ballot stuffing. For 508 out of the total 755 municipalities of Colombia for which we have data we find the reported vote totals to be larger than the maximum number of people who could possibly have voted. In such municipalities there was obvious ballot stuffing and this was consequential. The ratio of stuffed ballots to total votes is very large, reaching over 35% on average. Indeed, according to this methodology the total number of stuffed ballots was 230,007 which was larger than the winning margin of 188,502 by which the Conservative candidate Pedro Nel Ospina defeated the Liberal loser Benjamín Herrera.

Table 1 shows some of the basic data from this exercise by Colombian department. One can see here that there is a lot of variation in our estimated number of stuffed ballots. For instance in Antioquia, traditionally a bastion of the Conservative party, the total number of votes cast was 76,420 of which we calculate close to 11,000 were fraudulent. On the other hand, in the Liberal stronghold of Santander of the 55,492 votes ‘cast’ almost 24,000 were fake, a far greater proportion. Generally, ballot stuffing is larger in the eastern Andean

region (Boyacá, Cundinamarca and the Santanderes) as well as in the Coast (Bolívar and Magdalena).

Though we have data on ballot stuffing for most departments, to test the predictions of the model we focus solely on the department of Cundinamarca. The reason for this is that we have detailed historical information of land inequality from Acemoglu, Bautista, Querubín and Robinson (2008) who also collected the names of the mayors in each municipality over the period 1875 to 1895. By matching these data on the names of landowners we can construct a measure of the extent to which politicians were large landowners, our measure of overlap. We measure the extent of state capacity by the number of state officials and soldiers who were present in a municipality from the 1918 Colombian Census which also gives us data on one type of public good, the vaccination rate. We also use richer data on public goods available from the next reliable Colombian census (1937) as a check on the basic results. Finally, we also use various sources of information, particularly the proceedings of a conference held in the Colombian city of Ibagué after the election, to code a variable measuring incidents of electoral violence or coercion (Blanco, Solano and Rodríguez, 1922). This conference, held by the Liberal party in the wake of the 1922 election contains numerous accounts of both ballot stuffing, fraud and coercion. This data suffers from being constructed from probably biased reports, so is much less objective than our data on ballot stuffing.

Our empirical work finds robust evidence which is consistent with all the predictions made by our model. Nevertheless, we are cautious in giving the correlations we uncover a causal interpretation since we use ordinary least squares (OLS) regressions and we proceed by assuming that our main explanatory variables, land inequality, overlap and the strength of the state, are all econometrically exogenous.

Our theoretical results and empirical findings in Cundinamarca, Colombia, contrast with and complement the existing literature on electoral fraud. Most related is the seminal research of Lehoucq and Molina (2002) who studied the intensity and spatial distribution of over a thousand legal accusations of ballot rigging in Costa Rica between 1901 and 1946. They find that fraud accusations were more prevalent in the three poorest and least populated provinces of the country where social differentiation was more pronounced and it was harder to protect civil liberties. Ziblatt (2009) using data on complaints of electoral misconduct from pre-1914 Germany finds that electoral fraud was greater in areas with high land concentration. His interpretation of this is that strong local elites captured local state institutions and used these to commit fraud and sustain their power. Finally, Baland and Robinson (2008, 2012) find that traditional landed elites in Chile coerced workers into voting

for conservative parties prior to 1958.²

We make several contributions to this literature. First, our model suggests that a key determinant of the extent of ballot stuffing and coercion is the strength (here measured by the presence) of the central state, which appears not to have been directly tested before. Second, unlike Ziblatt or Baland and Robinson, we allow for political elites and economic elites to be different actors. Though it is often assumed in the study of Latin America that they are always the same, there is a lot of variation in this.³ Our model allows us to vary land inequality and the political participation of the landed elite (overlap) independently, while Ziblatt and Baland and Robinson interpret an increase in inequality to imply both higher inequality and greater landed power. Though their assumption is probably a good one for late 19th century Germany or 1950s Chile, it is not a good one for Colombia where a large historical literature emphasizes that political elites were distinct from landed elites.⁴ Our unique dataset allows us to actually measure the extent to which this is true. Quite tellingly, in our data our measure of overlap between political and economic elites on the one hand, and land inequality on the other, are not significantly correlated (they exhibit a correlation coefficient of -7.26% with associated p-value of 0.5).

We find that holding constant landed political power, higher land inequality is correlated with *less* electoral fraud, at least in the sense of ballot stuffing. We believe that the reason for this is that local economic elites in Colombia were not closely associated with political parties. Therefore, they were not in a position to ‘capture’ local institutions in the way Ziblatt (2009) describes. Moreover, the central state was much weaker. Unlike Prussian Junkers or the Hacendados of Chile’s Central Valley, Colombian landowners could not rely on basic things such as social order and they had little interest in encouraging the anarchy that went along with electoral fraud.⁵ Third, unlike Lehoucq and Molina, but similar to Ziblatt (2009), we do not find a lot of evidence that ‘modernization’ reduced fraud.⁶

²Other related work is that of Cox and Kousser (1981) and there is also a rich case study literature on electoral fraud in the United States, see Bense (2004). See also Posada-Carbó (2000) on Latin America and Lehoucq (2003) for a conceptual overview.

³Historians of Latin America have rebelled against the simplistic assumption that landed elites necessarily dominated politics (see Brading, 1973, Safford, 1985, Schwartz, 1996, Hora, 2001). Nevertheless, it was true in some cases, see Bauer (1975) and Ratcliff and Zeitlin (1988) on Chile.

⁴See the seminal work of Safford (1972, 1974) and Delpar (1981) and Uribe-Uran (2000), the latter book emphasizing that Colombia politics after independence was dominated by lawyers not landowners.

⁵Hirst (2006), in his study of the origins of the secret ballot in the Australian state of Victoria, argues that it was economic elites who suffered from the anarchy created by fraud and coercion in elections who pushed for the introduction of effective secret ballots.

⁶Unfortunately it is not possible to investigate in Colombia several of the issues which the literature raises. For instance, it is impossible to collect meaningful data on either turnout or political competition

Our approach also has the advantage that for our measure of ballot stuffing we have actual data on the extent of fraud as opposed to complaints about fraud. Since accusations of fraud may be used strategically, it is useful to have a relatively objective source (though our data on coercion does come from such accusations).

There are clearly many ways to undermine the true outcome of elections. In a more general model one could choose whether or not to use coercion to keep voters from the polls or instead to force them to turn out and vote in a particular way. In addition instead of using sticks, political parties can use carrots, buying votes or rewarding people for turning out (see Stokes, 2005, Baland and Robinson, 2008, 2012, Dekel, Jackson and Wolinsky, 2008, Dunning and Stokes, 2008, Nichter, 2008, Gans-Morse, Mazzuca, and Nichter, 2011, Diaz-Cayeros, Estévez and Magaloni, 2012, for models of some of these strategies). Which strategy is optimal will depend on the institutional details. For example, ballot stuffing, if it can be used, is obviously a cheaper strategy than buying votes or turnout. In situations where the rule of law is very weak, as in the case of Colombia in 1922, the focus of our empirical study, or many other Latin American countries, vote or turnout buying will therefore be dominated by other strategies. Moreover, if there is a reasonably secret ballot, it may be difficult to check how a coerced person votes, in which case it may be more reliable to keep people away, which is observable, and stuff ballots. Coercing people at a voting table may also be more likely to cause a riot. The ability to coerce people to vote in a particular way depends on the extent of political competition and socioeconomic control over voters. For example, Baland and Robinson (2008) shows that economic elites brought their workers to the polls and told them how to vote. In comparison to Colombia, these Chilean elites had much greater control over their workers and also did not face opposition from other parties locally. Our focus on ballot-stuffing is partially because the historical and case study literature suggests it was of salient importance historically in Colombia and partially for the practical reason that we were able to construct a unique measure of the extent of ballot stuffing and we are also able to measure public good provision. It is no doubt true that coercion also took place but rather than model the extent of coercion endogenously we use this variable as a covariate in the empirical analysis.

Finally, our paper builds on the work of the political economy of Colombia by Acemoglu,

during this period since elections were either very fraudulent, or were uncontested. Wilkinson (2004) for instance, finds that electoral violence is more likely in close elections in India and Ziblatt (2009) also finds more fraud in more competitive elections. Since we have no way to know if an election is close, we cannot investigate this claim with our data. Moreover, since we are examining data for a national election, it is not clear if these ideas are relevant in our setting.

Bautista, Querubín and Robinson (2008). We borrow heavily from their data construction for Cundinamarca and several of our findings are very consistent with theirs.

The paper proceeds as follows. In the next section we develop our model of ballot stuffing and coercion whose comparative statics capture the key hypotheses we test. Section 3 gives some historical background to the 1922 presidential election, describes the institutional set-up and contemporary accounts of fraud. Section 4 discussed the data construction and some descriptive statistics. Section 5 presents our econometric results and section 6 concludes.

2 The Model

2.1 Setup

We consider a simple probabilistic voting model (Lindbeck and Weibull, 1987) of political competition between two parties, the incumbent (I) and his opponent (O). While real ballots will be cast, the incumbent can also stuff ballots. More specifically, we assume the incumbent party has two types of politicians, local and national. If he wins the elections, the national incumbent politician gives a transfer t to the local politician. In exchange, the local politician provides the ballot stuffing (S) that will favor the incumbent party during national elections.

National politicians must also offer a policy platform to voters. For simplicity, we will assume that the tax rate on income is fixed at τ , and thus the policy platform is simply a level of public goods G from which voters derive some utility. National politicians get some exogenous rents (R) from power, and they choose policy to maximize their probability of winning and obtain these rents. The local incumbent politicians, on the other hand, want to maximize the rents t they obtain from national politicians.

Turning to voters, we introduce inequality and assume that y , the average income, is the weighted sum of the income y^r of a mass of λ rich individuals and y^p of a mass $(1 - \lambda)$ of poor individuals. To capture inequality in the simplest possible way, we assume that the rich hold a share θ of total income, that is $\lambda y^r = \theta y$. We assume that, $\theta > \lambda$ so that $y^r > y^p$ and define $\tilde{\theta} = (\theta/\lambda)$ to be the ratio of the rich's share of income to its share in total population, which is our measure of inequality.

The utility that each voter i in group $j \in \{p, r\}$ derives from policy is given by

$$u^j(G) = (1 - \tau) y^j + u(G), \tag{1}$$

where $u(G)$ is the utility from the public good which is increasing and strictly concave with derivatives denoted $u' > 0$ and $u'' < 0$. Aside from the utility from policy, we introduce a parameter (σ^i) to capture the underlying “ideological” bias of individual i towards the opponent party, as well as a “popularity” shock (δ) for the opponent party. We assume that each σ^i is independent and uniformly distributed with density 1 and centered at 0; δ is also uniformly distributed with density 1 and centered at 0.

We also assume that ballot stuffing comes at a cost. In particular, it generates disruption and disorder which reduces income. When stuffing is S , a fraction $\gamma \frac{S^2}{2}$ of income is destroyed, such that net income is:

$$\left(1 - \gamma \frac{S^2}{2}\right) y.$$

In the theoretical analysis below we think of the parameter γ , the marginal cost of stuffing, as a reduced form way of measuring the strength of the state. The stronger is the state, the higher is γ and the more costly it is to stuff ballots.

We think of the rich individuals in this setup as the local economic elite. They are influential in local politics to the extent that they can act collectively and lobby the local politician to stop coercion and ballot stuffing. The rationale for this lobbying is that local economic elites suffer from the disruption caused by ballot stuffing, while local politicians only care about rents. We follow the approach of Grossman and Helpman (2001) and in their setup the lobby, here the economic elite, offers a transfer of income to the local politicians in exchange for a reduction in the extent of ballot stuffing. Grossman and Helpman’s assumptions imply in our context that the local politician’s objective function ends up being a weighted function of his utility and that of the economic elite in society. Moreover, to allow for some “overlap” between the local politician and the local elite, we posit that a fraction μ of the rents from the national politician are obtained directly by the local elites, with $(1 - \mu)$ going to the local politician. With these assumptions in place, the local incumbent politician maximizes,

$$u^{local} = (1 - \mu) t + \alpha [u^r(G) + \mu t] \tag{2}$$

where $u^r(G)$ is the utility of a representative member of the rich elite as given by (1) and $\alpha > 1$ ⁷. Following this lobbying game between the local politicians and elite, the following

⁷More specifically, to derive (2) suppose that the local politician has a utility of the following form

$$u^{local} = C^{np} + C^{elite} + a \cdot u^{elite}$$

where $C^{np} = t$ is the contribution that he gets from the national politician. C^{elite} , on the other hand, is the contribution that the elite can make as a “lobby” to the local politician. Finally, a captures to what extent

electoral game is played.

1. The incumbent politician promises rents t to the local politician if he wins.
2. The opponent and incumbent national politicians promise G^O and G^I , respectively, to voters.
3. The local politician chooses ballot stuffing S .
4. Shocks are realized and elections take place.
5. Politicians fulfill their promises.

2.2 Probability of winning

A citizen i in group p will vote for I only if

$$(1 - \tau) y^p + u^p(G^I) > (1 - \tau) y^p + u^p(G^O) + \sigma^i + \delta.$$

This defines a critical value of σ^i , $\tilde{\sigma}^p$, such that all poor voters with $\sigma^i < \tilde{\sigma}^p$ vote for the incumbent party. This critical level is defined by $\tilde{\sigma}^p = u(G^I) - u(G^O) - \delta$. In the case of the rich, recall that they obtain a fraction μ of the transfers from the national incumbent politician. Assuming that such transfer is distributed evenly among rich individuals, the corresponding critical value for the rich is $\tilde{\sigma}^r = u(G^I) - u(G^O) + \mu \frac{t}{\lambda} - \delta$. Using these critical values and the distribution of σ^i , we can find the share of real votes in each group for party I , b_I^j , as:

$$\begin{aligned} b_I^p &= \frac{1}{2} + u(G^I) - u(G^O) - \delta, \\ &\text{and} \\ b_I^r &= \frac{1}{2} + u(G^I) + \mu \frac{t}{\lambda} - u(G^O) - \delta. \end{aligned}$$

Let v_I and v_O be the number of votes for the incumbent and his opponent. These totals are made up of ballots cast ($b_P = \lambda b_P^r + (1 - \lambda) b_P^p$ for $P \in \{I, O\}$), but also in the case of

the local politician cares directly about the elite's utility.

As in Grossman and Helpman (2001) it can be shown that the resulting policy can be found as the solution to the following welfare function,

$$C^{np} + (1 + a) u^{elite}.$$

Therefore, in (2) $\alpha = 1 + a$. Thus our assumption that $\alpha > 1$ can be restated as saying that the local politician is not completely indifferent about the elite's utility.

the incumbent of ballots stuffed. Hence, $v_I = b_I + S$. The probability that party I wins, $\pi = \Pr[v_I - v_O \geq 0]$, is then computed using the distribution of δ as

$$\pi = \frac{1 + S}{2} + u(G^I) - u(G^O) + \mu t \quad (3)$$

2.3 The local incumbent politician

Recall that the local politician wants to $\max_S u^{local} = \max_S (1 - \mu)t + \alpha(u^r(G) + \mu t)$. Substituting the utility of a representative member of the rich elite, recognizing that the transfers are only obtained when the incumbent wins, and rearranging, we have:

$$\max_S [1 + \mu(\alpha - 1)]\pi t + \alpha \left[(1 - \tau)\tilde{\theta}y \left(1 - \gamma \frac{S^2}{2} \right) + \pi u(G^I) + (1 - \pi)u(G^O) \right]$$

where π is given by (3). The first order condition of this problem gives the following solution for stuffing as a function of t , G^I , and G^O :

$$S = \frac{1}{2\gamma\tilde{\theta}} \frac{[1 + \mu(\alpha - 1)]t - \alpha[u(G^O) - u(G^I)]}{\alpha(1 - \tau)y} \quad (4)$$

Note that ballot stuffing is decreasing in inequality ($\tilde{\theta}$) and increasing in national politician transfers (t). However, this is for a fixed level of public good platforms, G^O and G^I , which also depend on parameters and will be determined below. Also notice that when $\mu = 1$, the full overlap case, α as expected plays no role in the solution, as we can think of the local elite and local politician as the same player. Also notice that since $\alpha > 1$, more overlap as captured by an increase in μ increases the saliency of transfers t and therefore increases ballot stuffing. In addition a higher marginal cost of the instrument of fraud, captured by γ , reduces the use of such an instrument. Finally, ballot stuffing is smaller the larger is the gap between the level of public good offered by the opponent and the incumbent.

2.4 The national politicians

To find the equilibrium of the game, we now continue by backwards induction and examine the national politicians' problems. The opponent has a trivial problem, as it maximizes $(1 - \pi)R$ subject to $\tau y = G^O$. Since his election probability $(1 - \pi)$ is increasing in G^O , he chooses

$$G^O = \tau y.$$

The national incumbent politician, in turn, will solve

$$\begin{aligned} & \max_{G^I, t} \pi R \\ & \text{subject to} \\ & \tau y = G^I + t \end{aligned}$$

The first-order conditions for an interior optimum are, using the expressions for S and π , and with λ_g the Lagrange multiplier for the government budget constraint,

$$\begin{aligned} \left[\frac{1}{4\tilde{\theta}} \frac{1}{(1-\tau)y} \frac{1}{\gamma} + 1 \right] u'(G^I) R &= \lambda_g \\ \left(\frac{1}{4\tilde{\theta}} \frac{[1+\mu(\alpha-1)]}{\alpha(1-\tau)y} \frac{1}{\gamma} + \mu \right) R &= \lambda_g \end{aligned}$$

Combining, and summarizing, we find that in the interior solution the equilibrium vector of promised policies is $\{(G^I, t), (G^O)\}$ that satisfies:

$$u'(G^I) = \frac{1}{\frac{1}{\gamma} + 4\tilde{\theta}(1-\tau)y} \left(\frac{1+\mu(\alpha-1)}{\alpha} \frac{1}{\gamma} + 4\mu\tilde{\theta}(1-\tau)y \right) \quad (5)$$

$$t = \tau y - G^I \quad (6)$$

$$G^O = \tau y \quad (7)$$

Note from this solution that the incumbent promises less public goods than the opponent, because the opponent is not passing on transfers in exchange for ballot stuffing and coercion. Moreover, it can be shown that the incumbent's public good offer is increasing in the parameter that captures the marginal cost of ballot stuffing, γ . More interesting, G^I is also increasing in inequality $\tilde{\theta}$ ⁸. Of course, the transfers to the local politician have the opposite comparative statics in these parameters, namely they are decreasing in γ and $\tilde{\theta}$. Regarding overlap, (5) shows that an increase in overlap μ reduces the provision of the public good and thus increases transfers.

⁸To see these results, let $x = \frac{1}{\gamma}$, $z = 4\tilde{\theta}(1-\tau)y$, then (5) is: $u'(G^I) = \frac{1}{x+z} \left(\frac{1+\mu(\alpha-1)}{\alpha} x + \mu z \right)$. Taking the derivative of the right hand side with respect to x , and simplifying, one can show that the condition for it to be positive (and thus for G^I to fall when γ increases) is just $z(1-\mu) > 0$, which is clearly satisfied since $\mu \in (0, 1)$. Similarly, taking the derivative of the right hand side with respect to z , the condition for it to be negative (and thus for G^I to increase when $\tilde{\theta}$ rises) is found to be $x(1-\mu) > 0$, which is also trivially satisfied.

As for stuffing, it will be given by (4) evaluated at the equilibrium values (5)-(7). With some algebra, it can be shown that the indirect effects that the equilibrium values of t and G^I as given by (5)-(7) have on such expression do not change our conclusions on the effects of inequality, overlap, and marginal costs derived before. We can therefore summarize our results in the following Proposition.

Proposition 1 *Consider the electoral game described before between the incumbent national politician, his opponent, the local incumbent politician and the local economic elite. Then, the unique subgame perfect equilibrium of the game features a set of policies $\{(G^I, t), (G^O)\}$ given by (5)-(7), and ballot stuffing S given by (4). Moreover, these equilibrium quantities satisfy:*

$$\begin{aligned} \frac{\partial G^I}{\partial \tilde{\theta}} &> 0, \quad \frac{\partial G^I}{\partial \gamma} > 0, \quad \text{and} \quad \frac{\partial G^I}{\partial \mu} < 0; \\ \frac{\partial t}{\partial \tilde{\theta}} &< 0, \quad \frac{\partial t}{\partial \gamma} < 0, \quad \text{and} \quad \frac{\partial t}{\partial \mu} > 0; \\ \frac{\partial S}{\partial \tilde{\theta}} &< 0, \quad \frac{\partial S}{\partial \gamma} < 0, \quad \text{and} \quad \frac{\partial S}{\partial \mu} > 0. \end{aligned}$$

Proof. In the text and Appendix A ■

Proposition 1 captures the main results of interest. Consider first inequality. It says that higher inequality is associated with more public good provision and less electoral fraud. The intuition for this is that since more inequality implies a richer economic elite, they care more about the costs of disruption and put a check on the local politician's stuffing and coercion, who now puts less effort into committing electoral fraud. In addition, the national politician observes this and is less willing to give transfers to the local politician, focusing instead on increasing public goods to increase its election probability. This strategic effect also reduces the local politicians incentive to commit fraud in search of rents.

The increase in the marginal cost of fraud, which we associate with state strength, has a similar effect on public good provision, transfers, and electoral fraud. Intuitively, buying votes from local politicians becomes more expensive when the marginal cost of ballot stuffing increases. This reduces the transfers that national politicians send to local politicians in exchange for fraud, reducing the equilibrium level of fraud, and enticing politicians to focus on public good provision instead to attract votes.

Finally, greater overlap means that local economic and political elites coincide more,

implying that economic elites put more weight on the rents generated by supplying votes to national politicians. Hence, they are willing to tolerate more of it in spite of the disorder that it brings. In this case, the emphasis for getting electoral support is shifted from public good provision to ballot stuffing. For these reasons, with more overlap we expect more ballot stuffing, more transfers to from national to local politicians, and less public good provision.

3 Historical Background and Context

3.1 Context of the 1922 Election⁹

Colombia has had a long history of elections (Deas, 1993). However, if elections have been traditional in Colombia, fraud has been an electoral tradition. In 1879, the following description could be found in the *Diario de Cundinamarca*:

“elections in Colombia are ... terrible confrontations of press, agitation, intrigue, letters, bribes, weapons, incentives for vengeance, politics, cholera, menace” (Guerra, 1922, p. 608).

The data we use to measure ballot stuffing comes from the 1922 presidential elections which pitted the Conservative Pedro Nel Ospina against the Liberal Benjamín Herrera. The election was unique in the period for featuring an open, competitive contest between the Liberals and Conservatives. Prior to 1914 the election of the President was indirect. In 1914, the first direct elections of President since 1857 “took place with ‘an entire absence of party strife and feeling’” (Posada-Carbó, 1997, p. 261). For the 1918 elections, the Liberals, led by Benjamín Herrera, decided to “try again the old tactic of supporting a Conservative candidate, to promote divisions within the ruling party, which seemed impossible to beat in open confrontation” (Melo, 1995). By 1922, however, Liberals were convinced that their party had good chances of gaining office with fair elections, and fraud accusations were widely publicized in the Liberal press. Finally, the 1926 elections “could be described as the ‘private act of a few public employees’” (Posada-Carbó, 1997, p. 260). This leaves the 1922 elections to examine.

⁹This section draws mainly from Bushnell (1993), Mazzuca and Robinson (2009), Melo (1995) and Posada-Carbó (1997).

3.2 Electoral Legislation and State Strength

Legislative activity between the 1890s and 1916 reveals the ongoing concern of politicians to control fraud and reflects the weakness of the state (see Montoya, 1938). The content of the numerous reform proposals shows that irregularities in the making of voting lists, vote buying, the strategic allocation of voting tables, double-voting, and participation of the armed forces in elections were among the elements that, in the views of politicians, corrupted elections. An indication of the extent of this fraud comes from the fact that in despair at its inability of to stop local party officials and supporters from defrauding the Liberals in congressional elections Conservative elites shared power with the Liberals via the “incomplete vote.” (Mazucca and Robinson, 2009).¹⁰ This system gave Liberals one third of the seats in legislature, no matter how many votes they received.

3.2.1 Laws and Main Reforms, 1888-1916¹¹

There were persistent efforts to control or eliminate electoral fraud for the simple reason that it threatened political stability. Law 7 of 1888 attempted to draft a comprehensive Electoral Code to organize electoral institutions. Though its scope was more limited than that of the Electoral Code to be adopted in 1916, Law 7 established the main electoral institutions and their functions. For our purposes the most important feature of these laws were the *Jurados Electorales* (electoral juries). One such jury was elected for each electoral district by the departmental *Junta de Distrito Electoral*. It compiled the lists of voters, elected the *Jurados de Votación* (voting overseers) to be allocated at each voting table, and counted the votes. The *Jurados Electorales*, therefore, had a great deal of influence over the final vote tallies in a municipality: they could decide whom to exclude from the voter rolls or, if they so chose, they could create official voting tallies that suited their political alliances. Also, since the lower rungs of this bureaucracy (e.g. the *Jurados de Votación*) were political appointees of higher ones, this meant that if a party dominated the national legislature it ultimately controlled the entire electoral system.

An important reform was Law 85 of December 31 of 1916, proposed by the government to counter a Liberal project, was opposed by Liberal senator Fabio Lozano on the basis that

¹⁰Other scholars have emphasized as well the unruliness of these political bosses. Deas (1993, p. 213) notes “A conservative governor admitted in 1854 that though these [caciques] were ‘friends’ he could have no control over them” and Reyes (1978) concurs, and argues that, in the early twentieth Century, “it was still hard for the Central government to confront a regional *cacique*” (p. 118).

¹¹This section draws mainly from Montoya (1938) and Registraduría Nacional del Estado Civil (1991).

it would not stop

“the outrageous scandal of the prodigious multiplication of Conservative votes to drown the Liberal majorities in the most important centers of the country ... In election time we will still have what specialists call *chocorazos* in Magdalena; *canastadas* in Boyacá and Cundinamarca; *milagros de Santa Isabel* in Tolima” (AS, 1917: 1117).

In spite of its deficiencies, Law 85 included several clauses aimed at reducing electoral corruption. Apart from stipulating that voting lists should be published, article 179 declared null elections in which the number of voters exceeded the number of those inscribed in the electoral census. Fines were also established for Police and Army officials influencing their subordinates in electoral matters, and imprisonment was established as the punishment for some electoral practices such as falsification of electoral documents and violence against electoral authorities.

Before the 1922 elections, two Laws were adopted that reformed some aspects of Law 85 of 1916: Law 70 of 1917 and Law 96 of 1920. A very illustrative article in Law 70 in terms of the politicians’ concern about ballot stuffing was added over the course of the debate by Senator Arango and other senators (AS, 1917: 386, 392). The article disenfranchised municipalities where the number of votes *exceeded one third of the total population of the respective municipality*.¹² To this end, the municipalities’ population would have to be computed from the latest civil census available or, in its absence, from the latest national census available.¹³

In 1920, a group of Liberal politicians proposed a new modification of the Electoral Code of 1916, which included the introduction of a *cédula*, an electoral ID, and a lowered threshold for disenfranchising municipalities. The proposed threshold was 15% of the municipality’s population for elections of members of Local Councils and Departmental Assemblies (in which all males older than 21 years old could participate) and 10% of the population for presidential and congressional elections (in which male citizens had to fulfill the age requirement plus one of the following: being literate, owning property of \$1,000 pesos or more, or earning a yearly income of over \$300 pesos). Most of these modifications were derailed by Conservatives, but Law 96 of 1920 ultimately did include measures such as mandating

¹²As will be shown below, this rule became a binding constraint on the behavior of politicians rigging the election. In spite of the record magnitude of ballot-stuffing across the country, only six municipalities exceeded this upper bound.

¹³Unfortunately, there are no records of the debates on these articles in the *Anales del Congreso*.

publication of the electoral census in a visible place and within time frames that facilitated protests from citizens.¹⁴

It was against the backdrop of this institutional framework and ongoing debate on the electoral organization that the 1922 elections took place. We now review some key aspects of the 1922 presidential election and fraud episode.

3.3 The 1922 Episode and the Convención de Ibagué

The presidential contest between Ospina and Herrera in 1922 was very competitive. Herrera won in every major city. Ospina obtained high vote shares in the countryside. The elections were obscured, however, by fraud accusations, which were so widespread that they led Liberal elites to actively challenge the result. As Deas (1993) puts it, “In 1922 the Conservative divisions were exploited by an independent Liberal coalition, and the situation was saved by the use of force at the local level and a general reliance on fraud” (p. 218).

Liberal representative to the national electoral council, Luis de Greiff, demanded upon completion of vote counting that the following be added to the record: “the Liberal representative’s ... conviction [is] that such verdict is not the genuine expression of popular will, but the result of the most scandalous fraud, tolerated by authorities and facilitated, in many cases, by government agents” (quoted in Blanco et al, 1922, p. 403). The Conservative majority rejected the proposition and proclaimed Ospina as President without any mention of the fraud denunciations.

Following the elections, Herrera decided to call for an extraordinary Liberal convention in the city of Ibagué, to decide, among other things, on the posture that the party would take regarding the new government. According to Pedro Juan Navarro, after the 1922 elections and with the Convención de Ibagué “the nation’s horizon was tragically obscured by the possibility of a Civil War” (Navarro, 1935, p. 46). The threat gradually disappeared, however, and General Herrera’s motto at the time “The Nation before the parties” became famous. The Convención de Ibagué left a very complete record of Liberal complaints both in the official summary of the convention and in a book commissioned by the convention to demonstrate Conservative abuses.¹⁵

¹⁴The debate over each of the elements of the reform was extremely animated. The spirit of the discussion may be illustrated with Conservative congressman Sotero Peñuela’s closing comment in one of his interventions: “When you in a family find an unruly young man, arrogant, vicious, if he is not Liberal, sooner or later he ends in that party. Doctor Tirado Macías once told us in the House that the women of certain life are all Liberal: the reason is clear” (ACR, 1920: 500).

¹⁵Several Conservative commentators attacked the Liberal claims (e.g. Guerra, 1922, Peñuela, 1922, p. 4).

The irregularities denounced include the alteration of the electoral registry, the political activity of the clergy, and the homicide of Liberals. It is worth reproducing the following passage from *Los Partidos Políticos en Colombia*, where Liberals summarized their view on the tools that Conservatism used to remain in power:

“Conservatism takes shelter in a castle of illegal strengths ... The electoral law, interpreted and executed by an ad-hoc power of eminently political origin, autonomous only in appearance, yet docile mirror in reality of the executive will. It has been impossible to introduce, into this law, the reforms that Liberalism has requested over and over, except when those reforms are innocuous and do not effectively threaten the Conservative hegemony ... if we add the combative and at times implacable attitude of priests it is clear that we find ourselves, as a nation, witnessing maybe a unique problem in the world” (Blanco et al, 1922, p. 15, 17).

Even considering some degree of exaggeration in the Liberal discourse, it is clear that Conservatives used diverse fraudulent methods during the elections. Ballot-stuffing and coercion seemed to follow regional patterns. Regarding ballot stuffing, Liberals accusations claimed that the “fraudulent multiplication” of votes was largest in Cundinamarca and the Santanderes (the departments of Santander and Norte de Santander), where there were Liberal majorities and hence

“it was necessary ... to rely on the greatest fraud ever registered. The multiplication of votes caused vertigo” (Blanco et al, 1922, p. 27).

Regarding other departments, Liberals claimed that in Valle, Antioquia and Caldas, fraud consisted mostly of inscribing Conservatives in the voting lists even when they did not meet the legal requirements, and obstructing the registration of Liberals. Apparently, fraud was less widespread there, “where, if there were irregularities, at least the scandalous ‘chocorazos’ of other departments were not observed” (Blanco et al, 1922, p. 399). In Atlántico and Magdalena, the substitution of voting lists with fake ones is regarded as the most common fraud, and finally in Nariño and Boyacá, where Conservatism was the norm amongst “illiterate farmers,” Conservatism “multiplied votes appallingly, and hence the two illiterate Departments lead the number of voters” (Blanco et al, 1922, p. 27). These claims are basically consistent with our data in Table 1. We indeed find very high levels of ballot stuffing in Cundinamarca and the Santanderes, but much less in Antioquia, Valle and Caldas.

3.4 Corroborating the Mechanism¹⁶

Having described the background, context, and immediate aftermath of the election, we now turn to a more detailed discussion of fraud itself.

3.4.1 The Rewards of Fraud

Though we cannot directly observe the political kickbacks received by politicians who helped the Conservative party carry the election, the historical record has circumstantial but compelling evidence that those who stuffed the ballot dramatically benefited from a greater share of the economic rents.

As late as the end of 1921, Ospina lacked any significant political presence in Cundinamarca.¹⁷ At the same time, local Conservative Alfredo Vásquez Cobo controlled five of six representatives to the department's assembly (Colmenares, 1984, p. 38). Using this power, Vásquez Cobo had granted himself a monopoly over the department's liquor rents and with those funds had created a formidable electoral machine in the region (Vélez, 1921, p. 17, 41, 75). Vásquez seems to have used his machine to support Pedro Nel Ospina in 1922, so Cundinamarca was ultimately one of the provinces that delivered the greatest number of fraudulent votes to Ospina's election. Tellingly, the first foreign loan processed by the Ospina administration (for five million dollars or one fifth of the entire indemnity payment) was destined to Vásquez's pet public works project: the Pacific railroad, in Vásquez's home region.

Probably the most apparent instance of Ospina's political indebtedness was toward the Boyacá *caciques*. Boyacá, an impoverished, fervently Catholic, rural department, was another epicenter of Conservative ballot stuffing in 1922. Ospina appointed several of these *caciques* to important political jobs for which they were not qualified. One, Aristóbulo Archila, was made the Treasury Minister, even though he was "as slow in financial matters and economic science, as he was experienced, sagacious, and domineering in the intricate small-town politicking of the Conservative party" (Navarro, 1935, p. 103). Moreover, Ospina appointed him in spite of well-founded rumors that the person could not speak English.¹⁸

¹⁶This section draws largely from Chaves (2008).

¹⁷In a last ditch effort to court Cundinamarca voters, Ospina started appearing in public dressed in the traditional garb of *Cundinamarques* peasants, a move that earned him repeated mockery from the national press (Colmenares, 1984, p. 102).

¹⁸Political cartoonist Ricardo Rendon gave the sharpest commentary on naming an unprepared, if politically powerful, rural boss for this office. Rendon's cartoon shows Archila talking to Edwin Kemmerer, the Princeton economist who advised and supervised Colombia's financial transformations during Ospina's

3.4.2 Ballot-stuffing and *Jurados Electorales*

As we discussed above, ballot-stuffing was generally the work of Conservative-dominated *Jurados Electorales*. Liberals filed thousands of complaints detailing the many delays and irregularities in the formation of voting lists. A couple of examples, from Barranquilla, Atlántico (a historically Liberal city) and from Chiquinquirá, Cundinamarca, suffice to illustrate the type of legal and bureaucratic maneuvering used to tamper with vote tallies. Liberals in Barranquilla griped that “Here, all sorts of obstructions are being placed in front of Liberal voters, and the [electoral] census record has been distorted, once sealed and signed, to inflate it in the last minute with nine hundred additional names, and in spite of protests, it appears that this scandal will not be rectified” (Paz and Solano, 1922, p. 54, from a telegram by the Liberal Committee in Barranquilla). Similarly, reports surfaced from Chiquinquirá claiming that “In this city inscription activity involved only Liberals, who are the majority and reached one thousand names. However, in the definite lists six thousand Conservatives appeared also, filling the allowed legal space” (quoted in Paz and Solano, 1922, p. 65, from Liberal Committee in Chiquinquirá).

4 The Data

4.1 Dependent Variables

4.1.1 Ballot Stuffing

Our measure of ballot stuffing - the extent of fraudulent votes - relies on the comparison of the total number of votes cast in each municipality with a reasonable estimate of the size of the franchise from information of the 1918 National Census. This measure is imprecise since we do not have accurate data on the real level of turnout. The arbitrary exclusion of voters from the electoral registries, which historical evidence suggests was common, is especially problematic, as several of the municipalities that reveal no ballot stuffing in our database might have experienced stuffing nonetheless. In spite of this caveat, that should be kept in mind, ballot stuffing was perhaps one of the most prevalent forms of fraud (indeed, it was so common that there were colloquial names for the practice of it, as shown in the quote from Lozano above). Finally, our measure of ballot stuffing is not likely to be influenced

tenure. Instead of discussing bonds, interest rates, or money supply, Kemmerer is giving a primary school English lesson: “Pencil, book, ruler, paper, box pen,” he says, pointing at the objects on the desk (quoted on Colmenares, 1984, p. 197).

by the strategic effects of other measures of electoral fraud based on testimonies of party followers.¹⁹

To estimate ballot stuffing we proceed as follows. As explained above, under the 1916 Electoral Code, suffrage rights were restricted to adult males (over 21 years of age), and for presidential elections male citizens had to fulfill the age requirement plus one of the following: being literate, owning property of \$1,000 pesos or more, or earning a yearly income of over \$300 pesos. The income and wealth requirements implied by these thresholds are fairly restrictive. For example, nominal GDP per-capita in Colombia in 1922 was about \$84 (GRECO, 2002) so that to qualify to vote using the income criterion an illiterate person would have had to earn almost 3 times average income. Given that around 50% of adult males were literate in 1918, it is plausible that very few illiterates could have earned such high incomes. Using data on land ownership for the department of Cundinamarca in 1890 (see below) and adjusting for prices suggests that if one owned \$1,000 worth of land one would be in the top 21% of landowners. Hence, it seems very unlikely that an illiterate male would have been able to qualify to vote on the basis of wealth holdings either. In consequence we assume that everyone who could qualify to vote on the basis of land ownership and income were also literate. This assumption implies that landowners and earners of income over \$300 are subsets of the literate males, and that the number of adult literate males is a reasonable estimate of the franchise.

We therefore use the 1918 National Census to compute the number of males over 20 years of age in every municipality (the census does not report males over 21), and multiply this number by the literacy rate of men in each municipality. Since the presidential election was held in 1922 and the Census was made in 1918, we may be underestimating the franchise. Hence, assuming a rate of population growth consistent with the information from the 1918 and 1928 National Censuses, we also adjust our estimate of the adult literate male population to allow for population growth. This constitutes our measure of the size of the franchise in each municipality. It is clear that this measure of the franchise is an overestimate since it assumes a 100% voter turnout and since only people older than 21 could vote. This will

¹⁹The idea of constructing a measure of ballot stuffing based on reasonable estimates of the real size of the franchise is not new. As soon as the 1922 elections were over and the official count was released, Liberals soon noticed that General Benjamín Herrera obtained around one thousand more votes than the ones obtained by Marco Fidel Suárez, the winning conservative candidate, in the 1918 elections (see, e.g., Navarro, 1935, p. 37). In *Los Partidos Políticos en Colombia*, where Liberal complaints were summarized, Liberals used the available statistics to draw some calculations in the spirit of the ones we construct in this section showing results for each department and the country as a whole, and attributing the “multiplication of votes” to the conservative party (see Rodríguez, 1922).

therefore tend to create relatively conservative measures of electoral fraud.

We combine our estimate of the franchise with the total number of votes cast in each municipality according to the official electoral registries sent by local authorities to the *Gran Consejo Electoral*.

4.1.2 Public Goods

We used two measures of public goods. Unfortunately the 1918 census only has one such measure, the percentage of people vaccinated. We supplement this with data from the 1937 census. This records for each municipality the total number of buildings and also the number of buildings which lack access to electricity, water and sewage. We therefore constructed the fraction of buildings without access to all public services by combining these two pieces of information, which provides us with another interesting measure of public good provision.

4.2 Explanatory Variables

4.2.1 State Strength

One of the most important hypotheses we wish to investigate in our paper is that the state of the state reduced the extent of ballot stuffing and coercion. The simplest proxy for this is a measure of the presence of the state in different dimensions and for this we use data from the 1918 population census on the number of public employees and the number of agents of the armed forces in each municipality. Ideally, we would like to examine the impact of the police and the army separately. Unfortunately, the 1918 Census does not distinguish between the two.

4.2.2 Land Inequality

Data on land inequality comes from Acemoglu et al. (2008). These authors collected cadastral (land census) data collected by the state of Cundinamarca in 1879 and 1890. We use a very standard measure of land inequality from their paper - the *land gini* coefficient, which measures land inequality among landowners. For each municipality at each date, we construct the gini coefficient using the standard formula

$$g_{mt} = \frac{1}{n_t^2 \bar{y}_t} \sum_{i=1}^{n_t} \sum_{j=1}^{n_t} |y_{i,t} - y_{j,t}| \quad (8)$$

where $i = 1, \dots, n_t$ denotes the total number of land owners at time t , $y_{i,t}$ is the value of land owned by individual i at time t , and $\bar{y}_t = \frac{1}{n_t} \sum_{i=1}^{n_t} y_{i,t}$ is the average value of land at time t . Throughout most of our analysis, we average the gini coefficients across the two dates for each municipality to arrive to our measure of (average) *land gini*. The average gini over this entire period was 0.65 (see Table 2 below).

4.2.3 Overlap

We constructed a measure of the overlap between political officeholding and landed wealth. To do this we classified the individuals in our sample according to whether they were politicians, rich, or both. We define an individual as being both rich and a politician if we can find an exact match of the first and last name in the Cundinamarca cadastral surveys and in the list of mayors *within* each municipality. Acemoglu et. al. (2008) collected data on 2300 politician (mayor) names between 1875 and 1895 from the *Registro del Estado* and *Gaceta de Cundinamarca*, official newspapers which published the names of principal and substitute mayors appointed in each municipality. Naturally, this procedure may lead to an overstatement of overlap if we match two different persons with the same first and last name, though this appears to be unlikely within a municipality. On the other hand, there are various reasons for understating overlap, since rich landowners may be politicians in neighboring municipalities or they may have substantial political influence without becoming mayor's themselves.

To construct our measure of overlap, let us introduce some notation. Let N_{mt} be the set of adult males living in municipality m at time t , L_{mt} be the set of adult males without any substantial landholdings or political power, R_{mt} be the rich, i.e. those with substantial landholdings and finally let P_{mt} be those with political power (mayors). It is clear that:

$$N_{mt} = L_{mt} \cup R_{mt} \cup P_{mt}.$$

Let $\#R_{mt}$ be the number of individuals in the set R_{mt} , and define $\#N_{mt}$, $\#P_{mt}$, $\#(R_{mt} \cup P_{mt})$ and $\#L_{mt}$ similarly. Since we can directly compute $\#P_{mt}$ and $\#R_{mt}$, and observe $\#N_{mt}$, the number of individuals who are neither rich nor politicians can be computed as

$$\#L_{mt} = \#N_{mt} - \#(R_{mt} \cup P_{mt}).$$

For the purposes of our analysis, we define individuals whose land plots are in the top 25%

most valuable plots as “rich landowners”. In these calculations, we compute the thresholds for the entire region (and not for each municipality separately) so as to exploit the variation in the presence of big landowners driven by inequality across regions which we want to take into account.²⁰ In calculating the number of rich landowners in each municipality, we use the cadastral surveys for 1879 and 1890. For politicians, we use neighboring dates to these, so that for 1879, any individual who is a mayor between 1877 and 1882 is considered a politician, and for 1890, we look at the window from 1888 to 1892.

Our measure of overlap in municipality m at time t is computed as

$$o_{mt} = \frac{\#(R_{mt} \cap P_{mt})}{\#(R_{mt} \cup P_{mt})}.$$

Our main measure of overlap is the average of this index for the two dates 1879 and 1890.

4.2.4 Coercion

To measure coercion we coded the information from the proceedings of the *Convención de Ibagué*. In the book there are many accusations of coercion which we sorted into different types of coercion using dummy variables to capture whether or not a particular type of violence was present in a municipality. These are

1. Violence=1 if the municipality had reports of actual violence breaking out: brawls, gun-shots which hit their target, confrontations with injured or casualties.
2. Intimidation/Harassment=1 for reports of incarcerating Liberals, subjecting them to random searches and detainment, coercive measures to prevent Liberal propagandizing or activism.
3. Arms distribution/paramilitary activity=1 for reports of organized armed Conservatives who are not police or army or distribution of arms for these bodies. Reports of intimidation by these bodies.
4. Coercion=1 indicator for the union of violence, intimidation, arms etc. 1 if any of the above happened.

In the empirical work we investigate only Coercion.

²⁰We have also computed an alternative measure where individuals whose land plots are in the top 50% most valuable plots are counted as “rich landowners,” with very similar results. We do not report these results to save space.

4.2.5 Other Covariates

In addition to our main explanatory variables we try to control for other factors which may be correlated with these. We consider three types of controls: geographical, historical, and contemporaneous.

As geographical controls we use the distance (in kilometers) of each municipality to Bogotá and to the Magdalena river (both from *Instituto Geográfico Agustín Codazzi*). The literature suggests that there may be large differences between core and peripheral municipalities, hence it is desirable to control for this directly. Distance to Bogotá is crucial since the city was both the political and economic center of Cundinamarca (and the country), whereas the Magdalena river was key for transportation and trade.

Our historical controls include: state functionaries in 1794, distance to royal roads (in kilometers), percent of slaves in 1843, a dummy variable for whether the municipality was a colonial city, and the earliest foundation date. These variables are from a number of primary sources, originally compiled and used by García-Jimeno (2005). State functionaries are from *Guía de Forasteros del Nuevo Reino de Granada* by Joaquín Duran y Díaz. Duran y Díaz constructed a full account of the Colonial State bureaucracy and fiscal accounts for 1794, coding all the crown employees in each city, and allowing us also to code the dummy variable for colonial city. Percent of slaves are from the 1843 census published by the *Secretaría del Interior* in the *Estadística General de la Nueva Granada*. The earliest foundation date of the municipality is from Bernard and Zambrano (1993). Like our geographical variables, some of these controls allow us to take into account how peripheral each area was. Older municipalities with more state functionaries historically, like municipalities closer to Bogotá, could exhibit different levels of fraud, as the presence of the state is likely to be stronger in such municipalities. The percent of slave population in 1843, on the other hand, may capture other important dimensions, like differences in the types of economic activities historically important and in the social structure of municipalities.

Turning to contemporaneous controls, unfortunately we do not have a good control for the level of economic development at the municipality level. Though the censuses do report data on literacy and schooling we do not use this as a control variable for ballot stuffing since they are mechanically related to our measure of ballot stuffing given that we use the literate male population to construct the number of stuffed ballots. However, the 1918 census does have information on the proportion of the population in skilled occupations and since this is very likely related to income per-capita we use this variable as an imperfect control for income per-capita. In addition, to control for differences stemming from variation in ethnic

composition, we control for the percent of indigenous people and black (Afro-Colombian) population in 1918, also from the 1918 census.

4.3 Descriptive Statistics

Table 2 reports the descriptive statistics. The first row reports the ratio of stuffed ballots to adult males for the 91 municipalities for which we have data. The first row shows that the mean number of stuffed ballots was 29% of the total adult male population. We then split the sample into those municipalities with below median levels of ballot stuffing and those with above median levels. This shows that the average stuffed ballots as a percentage of the adult population was 5% in below median, and 54% in above median municipalities. Rows 3 and 4 then looks at our other main dependent variable, public goods provision. In all municipalities on average 35% of adults were vaccinated. This number is 37% for low ballot stuffing municipalities and 33%, over 10% lower, in municipalities with high amounts of stuffing. Access to public services in 1937 appears little different however across these two groups.

The next panel of Table 2 then looks at our main explanatory variables. There are some quite interesting patterns here. First, average overlap is over 20% higher in municipalities with high levels of ballot stuffing (0.076 as opposed to 0.061). Here the number 0.076 implies that of the entire economic and political elite, meaning rich landowners and people who have been mayor, 7.6% of them are both rich and political office holders. The land gini however is about 5% higher in low ballot stuffing municipalities. The last two rows here show the average number of armed forces or bureaucrats relative to the population of the municipality, so that, for example, on average 0.4% of the population were bureaucrats. These numbers do not seem to be different between high and low ballot stuffing municipalities.

The final panel of the tables examines some of the covariates we use. Most interesting perhaps is our measure of coercion. We see here that this is significantly higher in municipalities with low ballot stuffing, as one might conjecture from a theoretical point of view since it seems likely that coercion and stuffing are strategic substitutes (rather than complements). There are a few other patterns of interest. Surprisingly low ballot stuffing municipalities seem to be further from Bogotá and they also had a larger presence of the state in late colonial times. Otherwise, the two types of municipalities seem quite comparable.

5 Econometric Analysis

5.1 Ballot Stuffing

5.1.1 Basic Results

Having presented the main features of our data we now proceed to the econometric analysis. To do so we estimate simple ordinary least squares regressions. The basic model we estimate is

$$y_m = \alpha g_m + \beta o_m + \gamma p_m + \mathbf{X}'_m \zeta + \varepsilon_m. \quad (9)$$

In (9) y_m is our explanatory variable of interest, either ballot stuffing or some measure of public goods provision. Throughout we measure ballot stuffing as $\log\left(1 + \frac{s_m}{n_m}\right)$ where s_m represents the number of stuffed ballots in municipality m and n_m the adult male population of the municipality. In (9) g_m is the land gini in municipality m , and o_m is our measure of the overlap between the economic and the political elite and p_m is one of our measures of state presence (which we use to proxy strength). Finally, \mathbf{X}'_m is a vector of covariates, such as our measure of coercion, the proportion of skilled workers in the labor force, or the foundation date of the municipality which also includes a constant. The error term ε_m captures all omitted influences, including any deviations from linearity. Equation (9) will consistently estimate the parameters of interest if $\text{Cov}(g_m, \varepsilon_m) = \text{Cov}(o_m, \varepsilon_m) = \text{Cov}(p_m, \varepsilon_m) = 0$. Nevertheless, we emphasize that these covariance restrictions are unlikely to hold in practice, since the presence of the state and political outcomes, such as ballot stuffing are all jointly determined and this is why we are cautious in interpretations our findings as causal.

Table 3 presents the basic results of estimating (9). We split the table into two panels, where the only difference is that in the bottom panel, B, we control for coercion. In this table there are no covariates other than our main explanatory variables. The top panel A starts in column 1 with the most parsimonious model where we regress the dependent variable $\log\left(1 + \frac{s_m}{p_m}\right)$ on the land gini. Here $\hat{\alpha} = -0.615$ with a standard error of 0.205 and highly significant statistically (at the 1% level). This suggests that higher land inequality is correlated with lower ballot stuffing. In column 2 we again run a parsimonious specification where the only explanatory variable is the extent of overlap. Here $\hat{\beta} = 1.282$ (s.e.=0.662) which is significant at the 10% level. This suggests a positive correlation between the extent of overlap in a municipality and the amount of ballot stuffing. Column 3 then uses the presence of the armed forces as a measure of p_m . Here $\hat{\gamma} = -3.135$ (s.e.=1.504). Column 4 instead uses the presence of government bureaucrats as a measure of state strength. In

both cases the estimated coefficient is statistically significant at the 5% level though the quantitative effect of bureaucracy is 5 times larger. In both cases more state presence, which we interpret as strength, is correlated with less ballot stuffing. In column 5 we add both of these measures of state presence at the same time and in this case only bureaucracy is statistically significant. Finally in column 6 we add all of the main explanatory variables together. The coefficients on the land gini and overlap hardly change and they both remain statistically significant. The coefficients of both measures of state presence drop a lot however and neither is significant at standard confidence levels. The evidence on state presence then is less strong and it is possible that the results in columns (3)-(5) are being driven by the fact that state presence is correlated with land inequality and/or overlap.

Panel B reproduces all these regressions with the addition of coercion in all columns. The basic patterns from panel A are very robust to this. Adding coercion does little to change the size of the estimated coefficients or the statistical significance, the one exception being overlap in column 6 when we add all of the explanatory variables, which just loses significance. Coercion itself has a negative sign, as we anticipated, but it is only significant in column 3.

5.1.2 Robustness

We now examine the robustness of the results in Table 3 by controlling for the covariates we discussed above. In Table 4 we focus on the robustness of land inequality and overlap. Table 5 focuses instead on state presence.

In Table 4 panel A examines the robustness of land inequality, while panel B focuses on the robustness of overlap. The different columns are distinguished by the different control variables which they use on the right side of (9). Thus in panel A column 1 the coefficient on Control is the coefficient on the distance from the centroid of the municipality to Bogotá. In column 2 control is the distance to the Magdalena River etc. The main point of panel A is to notice that with the single exception of the distance to Royal Roads, the estimated effect of land inequality on ballot stuffing is very robust. The coefficient changes little and it is usually significant at the 1% level.

Panel B likewise shows that the estimated coefficient and significance level of overlap is similarly robust to the addition of all these different covariates. The one time it just loses significance is in column 8 when we add the proportion of the labor force that is skilled.

The general message here is that the correlations we found in Table 3 between land inequality, overlap and ballot stuffing are very robust to the inclusion of our three sets of

controls: geographic, historical, and contemporaneous variables.

Table 5 then moves to examine the robustness of our two measures of state presence. Panel A focuses on the presence of armed forces and panel B on the presence of state bureaucracy. Both panels again show that the negative correlation between state presence and ballot stuffing presented in Table 3 is very robust. The coefficient changes little and it is usually significant at the 1% level. The single exception occurs in panel B when, while still negative, the correlation between bureaucracy and ballot stuffing is not significant when controlling for distance to Royal Roads.

Table 5 thus reassures the findings of Acemoglu et al. (2008) and our earlier observations about the Colombian state, though subject to the caveats we discussed when analyzing the results from Table 3. Though the Colombian state may have been weak in 1922, where it was present it served to reduce the extent of fraud. Bureaucrats and the armed forces reduced ballot stuffing. This is certainly different from what some have argued. For instance Pinzón (1994) claims that “the official bias of the police during the campaign was clear. On January 13 of 1922, a political demonstration of liberals in Bogotá was violently crashed by armed conservatives with police support (...) For a long time there had been little discussion over the electoral participation of the army, but precisely some of the accusations of corruption in these elections referred to that” (p. 78, 79). Yet Montoya (1935, p. 42) argues, referring to the role of the army,

“It is undeniable that for long time and under different political regimes, the Colombian government used the armed forces as an instrument for fraud, and that members of the army were docile and at times eager agents of such condemnable system; but it is not less evident, to the honor and joy of our Nation, that those practices have disappeared”

Taken together with the results for land inequality and overlap, these results may be interpreted with our theoretical model and contrasted with existing findings. In Cundinamarca landed elites were not competing with the state, as they may have been in 19th century Germany (Ziblatt, 2009) or Chile in the 1950s (Baland and Robinson, 2008, 2012). Instead, they were substituting for it and in doing so reduced the extent of fraud. This explains why high land inequality is negatively correlated with ballot stuffing. Not all elites were traditional however and some had used their political offices and connections to acquire wealth. In these places, municipalities of high overlap, elites needed to supply fraudulent ballots to national politicians to guarantee their power and newly found wealth.

5.2 Public Goods

Tables 3 to 5 are therefore largely supportive of our theory of the interaction between economic elites, political elites, and electoral fraud. Yet to further examine the validity of our framework, we can examine its implications for public good provision. The same logic underlying the positive correlation between overlap and ballot stuffing implies a negative correlation with public goods. Similarly, the negative correlation between inequality and state capacity with ballot stuffing mirrors an expected positive correlation with public good provision.

Tables 6-8 examine this by looking at the vaccination rate in 1918 as our key dependent variable. Table 6 has the same structure as Panel A of Table 3, with columns 1 to 4 running a parsimonious specification for each one of our key determinants of fraud and public good provision: inequality, overlap, and state presence (armed forces and bureaucracy). In column 1, we regress the vaccination rate on land inequality and find, as predicted, a positive and highly significant positive coefficient. The correlation with the extent of overlap, in column 2, is also of the expected negative sign, albeit significant only at the 10% level. Columns 3 and 4 examine the role of state presence measured with armed forces (column 3) and bureaucrats (column 4). Both are positive and significant at the 1% level. Moreover, the coefficients retain significance when both dimensions of the state are included together as regressors, in column 5. Finally in column 6 we add all of the main explanatory variables together. The coefficients on the land gini and armed forces fall slightly but both remain statistically significant. Overlap, which was marginally significant, is still negative but smaller and no longer significant in this fuller specification. The coefficient on bureaucracy also falls, to half its size in columns 4 and 5, and is not significant either.

Hence, Table 6 falls largely in line with the predictions of our model. Where inequality is high, ballot stuffing is not only smaller; we also find that public good provision is higher. While the evidence is somewhat weaker, we also find that more overlap, if anything, is correlated with less public good provision. Finally, and perhaps less surprising, there is more public good provision in places with more state presence.

In Tables 7 and 8 we perform the same robustness tests on our regressions for the vaccination rate as we did for ballot stuffing in Tables 4 and 5. In Panel A of Table 7, we find that the positive correlation between inequality and public goods is very robust to our geographic, historical, and contemporaneous controls. In columns 1-10 the coefficient on land gini is very stable, and typically significant at the 1% level. In Panel B, showing regressions for the vaccination rate on overlap, we constantly find a negative coefficient, yet it is less

stable and is not significant when controlling for state functionaries (column 3), distance to royal roads (column 4), or the percent of the population who are skilled (column 8) or black (column 10). In the remaining 6 columns overlap is significantly correlated with the vaccination rate, typically at the 10% level.

Table 8 examines the robustness of state presence. Both Panel A for armed forces and Panel B for bureaucracy send a very clear message. The positive correlation between both measures of state presence and the vaccination rate is robust to all our controls. Indeed, the coefficient on state presence is significant at the 1% level with a single exception, in column 4 of panel B where significance is at the 10% level.

Finally, Tables 9-11 complement our results on public goods by using an alternative measure of public good delivery. As noted before, while we have no other good measure of public goods in 1918, from the 1937 census we constructed the fraction of buildings without access to all public services (hence a measure of public good underprovision). In Tables 9-11 we repeat the same specifications as in Tables 6-8, using 1 minus such fraction as our measure of public good provision. Reassuringly, the results fall in line with those of Tables 6-8.

6 Conclusions

In this paper we have developed a model to investigate the circumstances in which politicians would use electoral fraud, specifically ballot stuffing, as opposed to making policy concessions, which we measured as public good provision. The model predicted that fraud should be higher and public good provision lower, the weaker is the state, lower in land inequality and the higher is the extent to which economic and political elites coincide (overlap). We tested these predictions using a unique measure of ballot stuffing we constructed from Colombia's 1922 presidential elections. Our findings, summarized above, are quite distinct from existing studies. For one, our focus is very much on the role of the state. Though politics in Colombia was highly partisan, our results suggest that by 1922 some element of a 'Weberian state' had emerged in Colombia and that at least some state officials were focused on reducing, not implementing fraud. For another, we found that land inequality is negatively correlated with ballot stuffing. Contrary to other studies which have found evidence suggesting that landed elites are implicated in fraud, the data from Colombia suggests the opposite. We argue that this is a consequence of state weakness. Though the state might have fought against fraud, its ability to do so was highly limited. Consequently, landed elites in Colombia found it in

their interests to substitute for the state, not undermine it, and as such fought against the chaos and illegality that went along with electoral fraud.

Nevertheless, one should keep in mind the problems with the data sources which we have used to draw these conclusions. Though we have real data on recorded vote totals from the 1922 election we had to estimate the franchise because we have no objective information on turnout. We believe that this means that our estimates are a lower bound on the extent of ballot stuffing, but this obviously introduces potential biases into our estimates that are hard to evaluate because we do not know what influenced the extent of turnout across municipalities or the extent to which it might have been correlated with our explanatory variables. This measure of fraud is complementary to existing measures which only rely on accusations of fraud. Indeed, we used accusations ourselves to construct a measure of electoral coercion. Exploring the determinants of variation in such ballot stuffing is obviously a fascinating research agenda.

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**Table 1: The 1922 Elections in Colombia:
Election Outcome and Estimates of Stuffed Ballots by Department**

Department	Total votes	Votes for Pedro		Votes for Benjamin Herrera (Liberal)		Ospina-Herrera	Stuffed Ballots	Stuffed Ballots/ Total Votes	Total Population, 1918
		Nel Ospina (Conservative)	Benjamin Herrera (Liberal)	Herrera	Herrera				
Antioquia	76,420	47,987	28,403	19,584	11,658	0.15	821027		
Arauca	425	146	278	-132	10	0.02	6070		
Atlantico	9,905	4,840	5,064	-224	1,488	0.15	117915		
Bolivar	49,548	33,650	15,888	17,762	29,207	0.59	416561		
Boyaca	83,764	61,977	21,747	40,230	39,688	0.47	590587		
Caldas	50,186	28,610	21,566	7,044	7,104	0.14	419697		
Caqueta	363	270	93	177	124	0.34	2957		
Casanare	68	10	58	-48	1	0.02	1382		
Cauca	23,024	13,644	9,367	4,277	8,416	0.37	238071		
Choco	7,214	3,467	3,746	-279	2,649	0.37	61371		
Cundinamarca	117,471	76,634	40,723	35,911	48,517	0.41	800439		
Guaajira	1,460	1,063	397	666	1,407	0.96	2908		
Huila	13,864	8,830	4,997	3,833	2,513	0.18	181202		
Magdalena	18,577	11,657	6,918	4,739	7,465	0.40	186254		
Meta	2,477	1,255	1,221	34	808	0.33	10695		
Narino	29,843	23,880	5,959	17,921	4,237	0.14	327367		
Norte de Santander	35,705	26,894	8,804	18,090	17,449	0.49	222552		
Putumayo	850	660	190	470	414	0.49	5009		
San Andres y Providencia	566	465	100	365	0	0.00	5953		
Santander	55,492	37,784	17,699	20,085	23,926	0.43	439161		
Tolima	39,083	19,019	20,057	-1,038	18,485	0.47	320084		
Valle	35,547	17,284	18,249	-965	4,440	0.12	266371		
TOTAL	651,852	420,026	231,524	188,502	230,007	0.35	5443633		

Table 2: Summary statistics

Variable	Overall					Low Ballot Stuffing			High Ballot Stuffing		
	Mean	Std. Dev.	Min.	Max.	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N
Dependent variables											
Stuffed ballots/total adult males	0.294	0.298	0	1.092	91	0.054	0.055	46	0.541	0.236	45
Log of (1+Stuffed Ballots/Adult Males)	0.234	0.218	0	0.738	91	0.051	0.052	46	0.421	0.153	45
Vaccination rate	0.35	0.173	0	0.775	91	0.374	0.17	46	0.326	0.174	45
Frac. of buildings access to public services, 1937	0.079	0.099	0	0.631	90	0.077	0.097	46	0.08	0.102	44
Main explanatory variables											
Average Overlap (Top 25%)	0.068	0.037	0	0.187	91	0.061	0.039	46	0.076	0.035	45
Land Gini (average 1879, 1890)	0.65	0.099	0.409	0.852	91	0.668	0.091	46	0.631	0.106	45
Armed Forces	0.001	0.006	0	0.058	91	0.001	0.008	46	0	0.002	45
Bureaucracy	0.004	0.003	0	0.015	91	0.004	0.003	46	0.004	0.002	45
Controls											
Coercion	0.209	0.409	0	1	91	0.261	0.444	46	0.156	0.367	45
Dist. to Bogotá (kms)	86.22	44.288	15	217	91	91.217	43.767	46	81.111	44.722	45
Dist. Magdalena river (kms)	63.017	36.992	2.055	154.44	91	61.692	37.602	46	64.372	36.732	45
State functionaries, 1794	1.538	12.173	0	116	91	2.826	17.096	46	0.222	0.823	45
Dist. Royal roads (kms)	18.295	14.147	0.438	58.139	91	15.522	15.023	46	21.13	12.74	45
% slaves in 1843	0.002	0.008	0	0.05	91	0.003	0.01	46	0.001	0.004	45
Colonial city	0.022	0.147	0	1	91	0	0	46	0.044	0.208	45
Foundation Date/1,000	1.67	0.104	1.537	1.865	91	1.683	0.111	46	1.658	0.096	45
% skilled	0.104	0.101	0	0.405	91	0.113	0.106	46	0.093	0.095	45
% indian	0.043	0.055	0	0.265	91	0.041	0.062	46	0.045	0.047	45
% black	0.032	0.04	0	0.259	91	0.031	0.044	46	0.033	0.036	45

Table 3: Ballot stuffing: the role of inequality, overlap, and state presence

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable: Log (1+stuffed ballots/adult males)						
<i>Panel A: Stuffed ballots and overlap, inequality, and state presence</i>						
Land Gini (average 1879, 1890)	-0.615*** (0.205)					-0.545** (0.234)
Average Overlap (Top 25%)		1.282* (0.662)				1.087* (0.638)
Armed Forces			-3.135** (1.504)		-2.622 (1.658)	-1.492 (1.639)
Bureaucracy				-15.30** (7.188)	-14.75** (7.168)	-3.684 (8.227)
Observations	91	91	91	91	91	91
R-squared	0.079	0.049	0.008	0.032	0.037	0.123
<i>Panel B: Stuffed ballots and overlap, inequality, and state presence, controlling for coercion</i>						
Land Gini (average 1879, 1890)	-0.580*** (0.207)					-0.521** (0.234)
Average Overlap (Top 25%)		1.225* (0.672)				1.062 (0.642)
Armed Forces			-3.267** (1.611)		-2.793 (1.753)	-1.667 (1.729)
Bureaucracy				-13.71* (7.278)	-13.09* (7.261)	-2.763 (8.255)
Coercion	-0.0636 (0.0495)	-0.0745 (0.0469)	-0.0834* (0.0501)	-0.0704 (0.0517)	-0.0719 (0.0522)	-0.0570 (0.0481)
Observations	91	91	91	91	91	91
R-squared	0.093	0.068	0.032	0.049	0.055	0.134

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 4: Ballot stuffing: the role of inequality and overlap
Robustness tests

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependent variable: Log (1+stuffed ballots/adult males)										
	<i>Geographical controls</i>				<i>Historical controls</i>			<i>Contemporaneous controls</i>		
“Control” is...	Dist. Bogotá	Dist. Magdalena river	State functionaries, 1794	Dist. Royal roads (kms)	% slaves, 1843	Colonial city	Foundation Date	% skilled	% indian	% black
<i>Panel A: Inequality, robustness</i>										
Land Gini (average 1879, 1890)	-0.700*** (0.212)	-0.616*** (0.205)	-0.601*** (0.207)	-0.377 (0.264)	-0.599*** (0.207)	-0.616*** (0.206)	-0.641*** (0.206)	-0.590*** (0.213)	-0.669*** (0.211)	-0.621*** (0.209)
Control	-0.000746 (0.000563)	-9.22e-05 (0.000609)	-0.00154*** (0.000320)	0.00305 (0.00185)	-2.166** (0.991)	-0.0324 (0.0255)	-0.170 (0.214)	-0.202 (0.256)	0.444 (0.478)	0.274 (0.546)
Observations	91	91	91	91	91	91	91	91	91	91
R-squared	0.101	0.079	0.086	0.106	0.085	0.079	0.085	0.088	0.091	0.082
<i>Panel B: Overlap, robustness</i>										
Average Overlap (Top 25%)	1.248* (0.666)	1.282* (0.665)	1.231* (0.667)	1.090* (0.629)	1.221* (0.672)	1.281* (0.667)	1.274* (0.669)	1.167 (0.736)	1.271* (0.667)	1.313** (0.642)
Control	-0.000189 (0.000503)	1.21e-05 (0.000618)	-0.00153*** (0.000368)	0.00415*** (0.00151)	-2.008* (1.032)	-0.00363 (0.0234)	-0.0553 (0.209)	-0.139 (0.273)	0.128 (0.448)	-0.117 (0.722)
Observations	91	91	91	91	91	91	91	91	91	91
R-squared	0.050	0.049	0.056	0.120	0.053	0.049	0.049	0.052	0.050	0.049

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 5: Ballot stuffing: the role of state presence
Robustness tests

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
Dependent variable: Log (1+stuffed ballots/adult males)											
	<i>Geographical controls</i>			<i>Historical controls</i>				<i>Contemporaneous controls</i>			
“Control” is...	Dist. Bogotá	Dist. Magdalena river	State functionaries, 1794	Dist. Royal roads (kms)	% slaves, 1843	Colonial city	Foundation Date	% skilled	% indian	% black	
<i>Panel A: State presence -armed forces, robustness</i>											
Armed Forces	-3.586** (1.602)	-3.148** (1.501)	-2.915* (1.659)	-2.746** (1.212)	-3.199** (1.473)	-3.147** (1.513)	-3.039* (1.537)	-3.331** (1.449)	-3.112** (1.471)	-3.036* (1.544)	
Control	-0.000420 (0.000549)	-4.44e-05 (0.000622)	-0.00182*** (0.000350)	0.00446*** (0.00149)	-2.953*** (0.972)	-0.0220 (0.0269)	-0.0612 (0.218)	-0.280 (0.256)	0.171 (0.455)	0.131 (0.647)	
Observations	91	91	91	91	91	91	91	91	91	91	
R-squared	0.015	0.008	0.018	0.092	0.019	0.008	0.009	0.025	0.010	0.009	
<i>Panel A: State presence -bureaucracy, robustness</i>											
Bureaucracy	-16.44** (7.327)	-15.47** (7.290)	-14.13* (7.262)	-8.687 (7.036)	-15.26** (7.361)	-15.31** (7.231)	-15.14** (7.319)	-14.71** (7.344)	-15.87** (7.242)	-15.18** (7.176)	
Control	-0.000474 (0.000527)	-0.000121 (0.000614)	-0.00140*** (0.000395)	0.00405*** (0.00152)	-2.885** (1.362)	-0.0218 (0.0255)	-0.0468 (0.214)	-0.250 (0.251)	0.252 (0.438)	0.135 (0.641)	
Observations	91	91	91	91	91	91	91	91	91	91	
R-squared	0.041	0.032	0.038	0.095	0.042	0.032	0.032	0.045	0.036	0.032	

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 6: Public goods-vaccination rate: the role of inequality, overlap, and state presence

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable: vaccination rate						
Land Gini (average 1879, 1890)	0.743*** (0.169)					0.627*** (0.169)
Average Overlap (Top 25%)		-0.858* (0.488)				-0.513 (0.478)
Armed Forces			4.260*** (0.629)		3.562*** (0.551)	2.574*** (0.551)
Bureaucracy				20.82*** (6.758)	20.08*** (6.739)	10.19 (6.826)
Observations	91	91	91	91	91	91
R-squared	0.183	0.034	0.023	0.093	0.109	0.235

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 7: Public goods-vaccination rate: the role of inequality and overlap
Robustness tests

Dependent variable: vaccination rate	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	<i>Geographical controls</i>			<i>Historical controls</i>			<i>Contemporaneous controls</i>			
“Control” is...	Dist. Bogotá	Dist. Magdalena river	State functionaries, 1794	Dist. Royal roads (kms)	% slaves, 1843	Colonial city	Foundation Date	% skilled	% indian	% black
<i>Panel A: Inequality, robustness</i>										
Land Gini (average 1879, 1890)	0.596*** (0.180)	0.774*** (0.156)	0.735*** (0.170)	0.433** (0.203)	0.765*** (0.170)	0.739*** (0.170)	0.707*** (0.170)	0.656*** (0.141)	0.703*** (0.169)	0.759*** (0.168)
Control	-0.00129*** (0.000341)	0.00189*** (0.000498)	0.000870*** (0.000187)	-0.00397*** (0.00130)	-3.066*** (0.671)	-0.0641*** (0.0193)	-0.232 (0.149)	0.714*** (0.215)	0.322 (0.245)	-0.674* (0.362)
Observations	91	91	91	91	91	91	91	91	91	91
R-squared	0.285	0.346	0.186	0.256	0.201	0.186	0.202	0.354	0.193	0.207
<i>Panel B: Overlap, robustness</i>										
Average Overlap (Top 25%)	-1.169*** (0.440)	-0.817* (0.429)	-0.823 (0.495)	-0.607 (0.443)	-0.943* (0.498)	-0.875* (0.492)	-0.906* (0.468)	-0.227 (0.475)	-0.911* (0.472)	-0.753 (0.528)
Control	-0.00178*** (0.000320)	0.00178*** (0.000550)	0.00106*** (0.000254)	-0.00544*** (0.00102)	-2.816*** (0.867)	-0.0907*** (0.0308)	-0.349** (0.156)	0.765*** (0.216)	0.638** (0.310)	-0.392 (0.499)
Observations	91	91	91	91	91	91	91	91	91	91
R-squared	0.238	0.180	0.040	0.230	0.049	0.040	0.078	0.215	0.076	0.042

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 8: Public goods-vaccination rate: the role of state presence
Robustness tests

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependent variable: vaccination rate										
	Geographical controls			Historical controls			Contemporaneous controls			
"Control" is...	Dist. Bogotá	Dist. Magdalena river	State functionalities, 1794	Dist. Royal roads (kms)	% slaves, 1843	Colonial city	Foundation Date	% skilled	% indian	% black
<i>Panel A: State presence -armed forces, robustness</i>										
Armed Forces	2.563*** (0.717)	4.810*** (0.714)	4.117*** (0.531)	3.774*** (0.678)	4.215*** (0.628)	4.219*** (0.634)	4.821*** (0.694)	4.823*** (0.564)	4.341*** (0.650)	3.888*** (0.696)
Control	-0.00158*** (0.000352)	0.00184*** (0.000564)	0.00119*** (0.000220)	-0.00558*** (0.000999)	-2.060*** (0.911)	-0.0762*** (0.0369)	-0.360*** (0.162)	0.803*** (0.200)	0.611*** (0.286)	-0.497 (0.453)
Observations	91	91	91	91	91	91	91	91	91	91
R-squared	0.184	0.178	0.030	0.231	0.032	0.028	0.070	0.243	0.061	0.037
<i>Panel A: State presence -bureaucracy, robustness</i>										
Bureaucracy	17.22*** (6.228)	23.61*** (5.326)	20.33*** (6.928)	12.70* (6.758)	20.85*** (6.676)	20.77*** (6.814)	22.13*** (6.542)	19.03*** (6.345)	19.67*** (6.652)	20.40*** (6.798)
Control	-0.00150*** (0.000337)	0.00196*** (0.000516)	0.000586* (0.000296)	-0.00498*** (0.000986)	-2.152*** (0.770)	-0.0764*** (0.0334)	-0.379*** (0.153)	0.763*** (0.183)	0.510* (0.293)	-0.498 (0.440)
Observations	91	91	91	91	91	91	91	91	91	91
R-squared	0.238	0.267	0.095	0.245	0.102	0.097	0.144	0.291	0.119	0.107

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

**Table 9: Public goods-fraction of buildings with access to public services, 1937:
the role of inequality, overlap, and state presence**

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable: fraction of buildings with access to public services, 1937						
Land Gini (average 1879, 1890)	0.358*** (0.0804)					0.223*** (0.0777)
Average Overlap (Top 25%)		-0.465* (0.251)				-0.128 (0.205)
Armed Forces			5.143*** (1.398)		4.596*** (1.123)	4.265*** (1.117)
Bureaucracy				16.70*** (4.298)	15.75*** (4.117)	12.44*** (4.389)
Observations	90	90	90	90	90	90
R-squared	0.131	0.031	0.105	0.185	0.268	0.315

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

**Table 10: Public goods-fraction of buildings with access to public services, 1937:
the role of inequality and overlap
Robustness tests**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependent variable: fraction of buildings with access to public services, 1937										
	<i>Geographical controls</i>			<i>Historical controls</i>			<i>Contemporaneous controls</i>			
“Control” is...	Dist. Bogotá	Dist. Magdalena river	State functionalities, 1794	Dist. Royal roads (kms)	% slaves, 1843	Colonial city	Foundation Date	% skilled	% indian	% black
<i>Panel A: Inequality, robustness</i>										
Land Gini (average 1879, 1890)	0.280*** (0.0735)	0.354*** (0.0806)	0.337*** (0.0789)	0.304*** (0.104)	0.365*** (0.0830)	0.358*** (0.0807)	0.357*** (0.0876)	0.364*** (0.0796)	0.344*** (0.0865)	0.370*** (0.0789)
Control	-0.000685*** (0.000187)	-0.000207 (0.000319)	0.00230*** (0.000132)	-0.000697 (0.000845)	-1.006 (0.726)	0.00168 (0.0266)	-0.00668 (0.141)	-0.0514 (0.0696)	0.116 (0.152)	-0.519*** (0.175)
Observations	90	90	90	90	90	90	90	90	90	90
R-squared	0.220	0.137	0.212	0.138	0.137	0.131	0.131	0.134	0.135	0.176
<i>Panel B: Overlap, robustness</i>										
Average Overlap (Top 25%)	-0.631*** (0.225)	-0.467* (0.253)	-0.385 (0.244)	-0.388 (0.244)	-0.493* (0.261)	-0.467* (0.254)	-0.476* (0.246)	-0.517* (0.261)	-0.487* (0.246)	-0.363 (0.268)
Control	-0.000926*** (0.000202)	-0.000260 (0.000318)	0.00239*** (0.000160)	-0.00175** (0.000669)	-0.920 (0.789)	-0.0118 (0.0355)	-0.0673 (0.137)	-0.0667 (0.0746)	0.272* (0.155)	-0.382 (0.237)
Observations	90	90	90	90	90	90	90	90	90	90
R-squared	0.201	0.040	0.117	0.093	0.036	0.031	0.036	0.035	0.054	0.054

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 11: Public goods-fraction of buildings with access to public services, 1937: the role of state presence
Robustness tests

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
Dependent variable: fraction of buildings with access to public services, 1937		<i>Historical controls</i>						<i>Contemporaneous controls</i>				
"Control" is...	<i>Geographical controls</i>		<i>State func-</i>		<i>Royal roads</i>		Colonial city	Foundation Date	% skilled	% indian	% black	
	Dist. Bogotá	Dist. Magdalena river	tionaries, 1794	Dist. Royal roads (kms)	% slaves, 1843	% slaves, 1843						
<i>Panel A: State presence -armed forces, robustness</i>												
Armed Forces	4.331*** (1.445)	5.082*** (1.356)	4.859*** (1.107)	4.983*** (1.411)	5.132*** (1.398)	5.142*** (1.405)	5.275*** (1.345)	5.145*** (1.418)	5.178*** (1.364)	4.858*** (1.316)		
Control	-0.000754*** (0.000199)	-0.000213 (0.000307)	0.00236*** (0.000126)	-0.00178*** (0.000641)	-0.473 (0.766)	-0.00104 (0.0385)	-0.0862 (0.133)	0.00342 (0.00683)	0.262* (0.143)	-0.377** (0.188)		
Observations	90	90	90	90	90	90	90	90	90	90		
R-squared	0.218	0.111	0.190	0.170	0.106	0.105	0.113	0.105	0.127	0.129		
<i>Panel A: State presence -bureaucracy, robustness</i>												
Bureaucracy	14.95*** (4.181)	16.50*** (4.127)	15.07*** (4.211)	14.93*** (3.964)	16.71*** (4.300)	16.70*** (4.319)	17.02*** (4.110)	16.79*** (4.315)	16.31*** (4.478)	16.36*** (4.252)		
Control	-0.000727*** (0.000202)	-0.000145 (0.000295)	0.00197*** (0.000232)	-0.00108* (0.000548)	-0.572 (0.584)	-0.00285 (0.0356)	-0.0921 (0.122)	-0.0359 (0.0620)	0.176 (0.158)	-0.409** (0.193)		
Observations	90	90	90	90	90	90	90	90	90	90		
R-squared	0.290	0.188	0.242	0.207	0.187	0.185	0.194	0.186	0.195	0.213		

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

A Appendix: Comparative Static Results

Equilibrium stuffing is given by (4) evaluated at the equilibrium values (5)-(7). Using a star (*) to denote the equilibrium values, taking the derivative, and noting that $\frac{\partial t^*}{\partial \tilde{\theta}} = -\frac{\partial G^{I*}}{\partial \tilde{\theta}}$ from the government budget constraint, we get:

$$\begin{aligned} \frac{\partial S}{\partial \tilde{\theta}} &= -\frac{1}{2\gamma_S \tilde{\theta}^2} \frac{[1 + \mu(\alpha - 1)] t^* - \alpha [u(\tau y) - u(G^{I*})] - \psi}{\alpha(1 - \tau)y} \\ &\quad + \frac{\partial G^{I*}}{\partial \tilde{\theta}} \frac{1}{2\gamma_S \tilde{\theta}} \frac{\alpha u'(G^{I*}) - [1 + \mu(\alpha - 1)]}{\alpha(1 - \tau)y} \end{aligned}$$

Using (5) for $u'(G^{I*})$ and simplifying,

$$\frac{\partial S}{\partial \tilde{\theta}} = -\left(\frac{1}{\tilde{\theta}} S + \frac{\partial G^{I*}}{\partial \tilde{\theta}} \frac{1}{2\gamma_S \tilde{\theta}} \frac{4\tilde{\theta}(1 - \mu)}{\frac{1}{\gamma_S} + \frac{1}{\gamma_C} + 4\tilde{\theta}(1 - \tau)y} \frac{1}{\alpha} \right) < 0.$$

With similar algebra for overlap, we find that:

$$\frac{\partial S}{\partial \mu} = \frac{1}{2\gamma_S \tilde{\theta}} \frac{[1 + (\alpha - 1)] t^*}{\alpha(1 - \tau)y} - \frac{\partial G^{I*}}{\partial \mu} \frac{1}{2\gamma_S \tilde{\theta}} \frac{4\tilde{\theta}(1 - \mu)}{\frac{1}{\gamma_S} + \frac{1}{\gamma_C} + 4\tilde{\theta}(1 - \tau)y} \frac{1}{\alpha} > 0.$$

Finally, for the marginal costs of fraud,

$$\begin{aligned} \frac{\partial S}{\partial \gamma_S} &= -\left(\frac{1}{\gamma_S} S + \frac{\partial G^I}{\partial \gamma_S} \frac{1}{2\gamma_S \tilde{\theta}} \frac{4\tilde{\theta}(1 - \mu)}{\frac{1}{\gamma_S} + \frac{1}{\gamma_C} + 4\tilde{\theta}(1 - \tau)y} \frac{1}{\alpha} \right) < 0, \\ \frac{\partial S}{\partial \gamma_C} &= -\frac{\partial G^I}{\partial \gamma_C} \frac{1}{2\gamma_S \tilde{\theta}} \frac{4\tilde{\theta}(1 - \mu)}{\frac{1}{\gamma_S} + \frac{1}{\gamma_C} + 4\tilde{\theta}(1 - \tau)y} \frac{1}{\alpha} < 0. \end{aligned}$$