

# Can Europe Run Greece?

## Lessons from U.S. Fiscal Receiverships in Latin America, 1904-31

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### Abstract

In 2012 and again in 2015, the German government proposed sending German administrators to manage Greece's tax and privatization authorities. The idea was that shared governance would reduce corruption and root out inefficient practices. (In 2017 the *Boston Globe* proposed a similar arrangement for Haiti.) We test a version of shared governance using eight U.S. interventions between 1904 and 1931, under which American officials took over management of Latin American fiscal institutions. We develop a stylized model in which better monitoring by incorruptible managers does not lead to higher government revenues. Using a new panel of data on fiscal revenues and the volume and terms of trade, we find that revenue fell under receiverships. Our results hold under instrumental variables estimation and with counterfactual specifications using synthetic controls.

“President Roosevelt has undertaken to give the island of Santo Domingo an honest government, economically administered. Philadelphia next!”

— *The Philadelphia Public Ledger, 1907*

“The wealthy in Greece must play their part, the tax base broadened, the efficiency of the tax administration needs to be improved, corruption must be vigorously confronted. I repeated my offer ... years ago I got the [German] state finance ministers to provide [Greece] up to 500 tax officials.”

— *Wolfgang Schäuble, 2015*

How easy is it to improve a country’s institutions from the outside? In the recent battles over Greece’s debt, the German government twice demanded that German officials be allowed to take over direct management of Greek fiscal institutions. In 2012, the German government mobilized 160 tax collectors to serve inside the Greek tax administration. The Greek government was positive at first — one official stated, “Such assistance with upgrading the quality and efficiency of the Greek public administration is very welcome”— but the plan floundered over concerns that the Germans would tie it to the appointment of an European budget commissioner with authority over all Greek public spending (Kirschbaum 2012; Bryant and Hope 2012; Spiegel and Hope 2012). In 2015, Minister Wolfgang Schäuble twice publicly suggested that Greece accept 500 German officials to help collect taxes (Stewart and Mill 2015). The Greeks rejected that offer, but the final settlement placed the Greek privatization fund under the super-

vision of European officials (CNN 2015). This proposed strategy was not limited to Europe. A May 2017 column in the *Boston Globe* suggested that Haiti should turn over much of its governance to foreigners, in this case Canadians (Albert 2017).

Lost in these suggestions was any evidence as to whether management by foreign officials would actually improve the functioning of domestic institutions. The underlying principle guiding these suggestions was the need to replace “extractive” with “inclusive” institutions — as Acemoglu and Robinson (2013) would prescribe. Acemoglu and Robinson generally argued that attempting to reform extractive institutions from the outside was difficult, but in work with Davide Cantoni and Simon Johnson they presented evidence that it was *possible*: French armies imposed lasting reforms in the areas they occupied during the Napoleonic Wars (Acemoglu et al. 2011). In 21<sup>st</sup> century Greece, however, the German government was proposing something much more limited: management of Greek fiscal institutions by European officials *without* taking over the entirety of the state.

There existed theoretical support for the belief that foreign management of (say) Greek state functions could help even without a formal transfer of sovereignty. Krasner (2005) forcefully argued the case. “Shared-sovereignty entities are created by a voluntary agreement between recognized national political authorities and an external actor such as another state or a regional or international organization. Such arrangements can be limited to specific issue areas like monetary policy or the management of oil revenues. ... Shared sovereignty involves the creation of institutions for governing specific issue areas within a state.”

In this paper, we test whether shared governance actually works by analyzing the experience of U.S. interventions in Latin America between 1900 and 1931. We build a stylized model to outline the incentive compatibilities between the foreign and domestic actors under shared governance, in which foreign officials take over the management of state institutions but leave the judicial system and legislature in domestic hands. Empirically, as these interventions targeted the main source of fiscal revenue, customs, we identify their effects using a new dataset spanning a panel of 19 Latin American economies. We introduce instruments not directly related to customs revenue to assuage endogeneity concerns. These instruments — distance and shipping costs from the main Latin American port and the U.S. main economic center, New York City — represent the degree of economic integration between the U.S. and these countries. (Unlike many papers that use distance as an instrument, our identification strategy takes advantage of the opening of the Panama Canal to make our instrument time-variant.) Their validity rests on their correlation with the existence of a receivership while being uncorrelated with customs revenue. In addition, as a robustness check, we construct synthetic controls for most intervened countries.

All the evidence points to a failure of the customs receiverships. In fact, we find that customs revenues fell when U.S. officials took over fiscal institutions. Not only did contracting fail to solve the problems facing revenue collectors in Latin America, it made those problems worse. Corruption was not stamped out; nor did the Americans introduce better technologies to improve collection. In one of the clearest possible tests of the contracting hypothesis, it failed. Hence, we find that shared governance failed to fulfill its promises.

Why did shared governance fail? Our model shows that the introduction of better monitoring is consistent with a reduction of embezzlement and extraction by customs officers. The problem is that this strategy also reduced the income of those same officers (or those who took their place after corrupt officers lost their posts). To induce more effort at collection, the Americans had to pay officials more. Nevertheless, they could not pay enough to compensate for the lost income. Had the Americans introduced substantially better technology, this effect could have been compensated for — but the Americans did not have such technology on offer. Moreover, if they had possessed such technology, it is far from clear that direct control of the customs service would have been necessary (let alone sufficient) to insure its adoption. Stasavage and Daubrée (1998), for example, found that successful African customs reforms depended on the decision by internal actors to computerize and reform procedures; foreigners provided advice but did not administer the changes.<sup>1</sup>

This paper proceeds as follows. Section 1 reviews the extant literature on shared governance. Section 2 discusses the history of customs receiverships. Section 3 lays out a model of why better monitoring will fail to raise revenues in the absence of substantial technological improvements. Section 4 explores the relationship between receiverships and revenues using a variety of different identification strategies. Section 5 concludes.

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<sup>1</sup> More specifically, they found that hiring an outside company to inspect and value imports could reduce corruption in customs, but only at considerable fiscal cost and when done in connection with internal reforms.

# 1 Contracting state functions to foreign governments

The German proposals of 2012 and 2015 did not emerge from an intellectual vacuum. In 2002, for example, Caballero and Dornbusch (2002) published an essay in which they called for “foreign hands-on control and supervision of fiscal spending, money printing and tax administration” in Argentina. Stephen Krasner, as mentioned, suggested that foreign control of specific institutions could result in better governance. Cooley and Spruyt (2009) argued that dividing control and use rights over specific domestic assets with other states can reduce conflict although they concluded that the impact on domestic governance was unclear. Mitchener and Maurer (2010) proposed that a state could reduce corruption by adopting external institutions if “it is willing to relinquish sovereignty in some limited, well-defined capacity to either a low-corruption government or a private organization with a strong reputation for honest management.” The proposed mechanism was that foreign managers would risk damaging their high-wage careers if they tolerated corruption; they would therefore improve governance outcomes and limit corrupt behavior.

The view that domestic governance can be improved by external actors had some empirical support. A 2014 survey article discussed the literature on foreign intervention and domestic governance outcomes and concluded that “contracting [state functions to a foreign government] often works” (Krasner and Weinstein 2014). This view found the strongest support in the literature on the effect of foreign election monitors. Hyde (2007), for example, found that monitors randomly assigned to voting places in Armenia lowered the incumbent’s vote-share by 2% to 6%. A similar experiment in Afghanistan in 2010 produced even more dramatic results (Callen

and Long 2015). More generally, Kelley (2012) found that monitored elections were fairer and led to more alternation in office; moreover, the effect was stronger the greater the authority vested in the monitoring bodies. Proponents of shared governance also presented evidence from foreign takeovers of law enforcement agencies: Matanock (2014) found that crime fell when Australia took control of the Solomon Islands' justice system (although she found no such pattern for similar interventions in Papua New Guinea and Guatemala).

Other scholars argued that foreign intervention has been generally incapable of improving governance. Easterly (2006) was the most trenchant of these critics. He argued that earlier colonial occupations served only to empower autocrats, create artificial nation states, and fuel later conflicts. His findings regarding colonialism are consistent with other studies showing that more limited foreign interventions intended to promote democracy have rarely had the desired effect. Pei and Kasper (2003) and Peceny (1999) found that the United States succeeded in imposing democratic institutions in less than a third of its overseas interventions. Pickering and Peceny (2006) found that hostile intervention by the United States increased the chances of democratization by 18%, but their result was driven by three cases: the Dominican Republic in 1965, Panama in 1989, and Haiti in 2003. Bueno de Mesquita and Downs (2006) found similarly depressing results when examining foreign interventions more generally, as did Downes and Monten (2013).<sup>2</sup>

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<sup>2</sup> For additional works in this literature, see Lo, Hashimoto, and Reiter (2008) and Owen (2010). Nomikos et al. (2013/14), in a note published in *International Security*, took issue with Downes and Monten's conclusion, contending that foreign-imposed regime changes became significantly more likely to result in lasting democratization after World War II.

These findings, however, applied to large-scale occupations or military invasions putatively intended to promote democratization rather than the targeted contracting proposed by Stephen Krasner and others. In fact, it is not even clear that the current empirical literature says much about the efficacy of regime change: as Bueno de Mesquita and Downs (2006) have pointed out, democratization was not the main goal of most of these foreign-imposed regime changes over the past century. Moreover, historical work focused on outcomes other than democratizations found positive results from occupation and colonization. As mentioned, Acemoglu, Cantoni, Johnson, and Robinson (2011) found that reforms implemented by French occupiers after 1792 brought long-lasting positive effects. Similarly, Ferguson and Schularick (2006) argued that British colonies were able to borrow in London at significantly lower interest rates compared to similar countries outside the British Empire. Given their radically-different goals and scope, it is unclear what the debate over foreign-imposed regime change or European imperialism can tell us about the efficacy of shared governance.

In short, the hypothesis that contracting state functions to foreigners will improve governance has not been adequately tested. The cross-country studies focus on forcible regime change, whereas the micro studies examine institutions where success is hard to define, let alone measure. The exception is the literature on election monitoring, which does show a mild positive effect on governance outcomes. There is, however, some evidence that election monitoring simply displaces fraud and leads governments to engage in other forms of electoral manipulation (Krasner and Weinstein 2014, 132). A direct test of shared governance using an easily-observable outcome variable is needed. American fiscal receiverships during the early 20<sup>th</sup> century provide that test.



## 2 Customs receiverships

In the early 20<sup>th</sup> century, American administrations adopted the theory that insufficient government revenue was the root cause of political instability and insecure property rights in Latin America. In turn, these American policy-makers believed that corruption and managerial inefficiency explained low fiscal revenues. It followed from that analysis that placing U.S. officials in charge of Latin American fiscal institutions would decrease corruption. American officials would be outside local patronage and political networks. With control over personnel decision and administrative rules — and facing a very different set of incentives than their foreign counterparts — the American agents would increase collections. More revenue, in turn, would allow the local government to borrow at lower interest rates. The funds could then be used to provide public goods, increasing growth, and further increasing government revenue. The virtuous cycle would end with a stable government in charge of its own territory and with no need to confiscate property — especially American-owned property (Maurer 2013).

Customs receiverships have an advantage over other institutional reforms in that success is easy to measure: did revenue rise controlling for changes in the volume and terms of trade and tariff rates? If revenues rose, then the American receivers accomplished one or both of two goals: (1) reducing corruption and (2) introducing more efficient technology. If revenue did not rise, adjusting for the relevant factors, then the American reform would have to be counted as a failure on both counts.

Between the creation of the first fiscal receivership in 1904 and the onset of the Great Depression, the United States rolled out receiverships in eight different Latin American countries

(plus Liberia): the Dominican Republic, Cuba, Nicaragua, Haiti, Panama, Peru, Bolivia, and Ecuador. In roughly half the cases (Cuba, Haiti, Panama, and Bolivia) they also took control of some or all internal revenues. In seven cases the national government retained titular sovereignty and the ability to set customs and tax rates; Cuba was the exception.<sup>3</sup> In the D.R., Nicaragua, Peru, Bolivia, and Ecuador, enthusiastic national governments invited the United States; in Cuba and Haiti, U.S. officials intervened after local governments lapsed into instability.<sup>4</sup>

The American receiverships would seem to have been primed for success. In most cases, they had political support from the governments of the nations which received them. They were administered by American officials who did not have any long-term relationships with the countries in which they were operating. The U.S. government had every reason to hope for their success, as did American private investors operating in the intervened nations (Maurer 2013). The receiverships appear to be canonical cases of shared governance in Stephen Krasner's sense.

## 2.1 History

“True stability is best established not by military but by economic and social forces. Financial stability contributes perhaps more than any other one factor to political stability.”

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<sup>3</sup> Article IX of the Haitian-American Convention of 1915 removed the ability of the Haitian legislature to reduce tariff rates without American approval. It retained other authority.

<sup>4</sup> Panama was an intermediate case: the government asked the United States to send an advisor to help reform the fiscal system; at the suggestion of the State Department, the Panamanian government agreed to give him executive authority subject only to the Panamanian president.

The strategy began under the administration of Theodore Roosevelt. In 1904, the Dominican Republic was entering its fifth year of civil war. American sugar plantation and railroad owners put pressure on the Roosevelt Administration to do something to end the chaos. They feared violence, of course, but they also feared that the Dominican government, under pressure from insurgents, would expropriate their properties or impose a confiscatory tax on sugar exports. In addition, the U.S. government feared that the government might offer Germany the use of Dominican territory for a naval base in return for arms or financial support. During 1903, the U.S. consul reported on multiple occasions that President Alejandro Woss y Gil's foreign minister supported such a scheme. Carlos Morales overthrew Woss y Gil in November, but that only shifted the locus of American concern: in February 1904, U.S. agents captured a letter from an insurgent leader to the German consul openly requesting military aid (Rippy 1937, 431-32).

The problem was that with memories of the Philippine War (1898-1902) still fresh, there was no domestic support for intervention. Marines briefly landed in January-February 1904 and the Navy shelled insurgent positions from offshore, but Roosevelt was reluctant to order an open-ended occupation. A solution came from U.S. naval officials on the ground: put the customhouses under American control, to insure a steady stream of income for the government.

President Morales thought that was an excellent idea, but U.S. government refused to move until President Morales explicitly asked the U.S. to take over customs.<sup>5</sup>

On January 20<sup>th</sup>, 1905, the U.S. and the D.R. concluded an agreement to place customs collection under American management. American officials assumed control over the customs agency, reporting directly to the Dominican president. The U.S. promised to divert no more than 55 percent of the revenues to debt payments, remitting the remainder to the government. Santo Domingo agreed to refrain from issuing new debt or changing tariff rates without American approval (Munro 1964, 101). The U.S. concurrently began to broker debt renegotiations with the D.R.'s creditors, leading to a 57% haircut on the country's foreign debt.<sup>6</sup> Roosevelt submitted the agreement to the Senate on February 7th. The Senate, however, rejected the measure. On March 24, therefore, the Dominican finance minister proposed that the United States take over customs without a treaty. On March 31<sup>st</sup> a retired American colonel, George Colton, took over the administration of the country's customs agency.

The Americans promptly reorganized a new customs and frontier service under five American officials. (The number of American officials would eventually approach fifty.) They raised

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<sup>5</sup> See particularly Dawson to Hay (including inclosures), September 27, 1904, *Foreign Relations of the United States* (1904), pp. 280-82; Secretary of State to Commander Dillingham, January 5, 1905, *Foreign Relations of the United States* (1905), pp. 300-01.

<sup>6</sup> As one might expect from a process that resulted in such a steep haircut for American creditors, the receivership was not designed to protect American creditors. Haircut calculated from data in Wynne (1951, 258).

local wages substantially: Dominican enlisted personnel received \$300 per year — more than their equivalents in the Dominican army or police, who received only \$97 and \$133 per year respectively (United States 1904, 88 and 92).<sup>7</sup> The Americans ordered deputy receivers to immediately send samples of all cargoes to the central office for verification. The new system failed to speed payments, but it was intended to prevent Dominican officials from embezzling funds or cutting side deals with importers.<sup>8</sup>

Over the next quarter century, the American government rolled out the receivership model on multiple occasions when confronted with the need to stabilize or support Latin American states. Of the eight receiverships ultimately established, all but two fit the model of voluntary contracting between the host government and the United States. The partial exceptions were Cuba (1906-09) and Haiti (1915 onwards), where receiverships came about in the wake of political instability. In Cuba, Tomás Estrada's fraudulent re-election provoked a rebellion followed by extreme disorder. Roosevelt dispatched Secretary of War Taft to Havana. When Taft discovered that the Cuban government had essentially lost control of everything save a few cities, he printed up his own letterhead reading "Office of the Governor, Republic of Cuba, under the Provisional Administration of the United States" and assumed control over government functions, including customs.<sup>9</sup> In Haiti in 1915, Jean Vilbrun Guillaume Sam gained power in what was ef-

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<sup>7</sup> Dominican police and army salary data from the 1902–3 fiscal year.

<sup>8</sup> Of thirty-six rulings in the first twenty months, only one went against the receivership. See Office of the Controller and General Receiver (1907, 342).

<sup>9</sup> See Schoultz (2009, 25-28).

fectively a coup. The subsequent repression culminated in the massacre of 167 political prisoners, which provoked angry mobs to lynch Sam and drag his body through the streets. When the resulting disorder threatened American interests, President Wilson ordered the Marines to re-establish order. The U.S. helped re-install a Haitian government; in September 1915 that government signed the Haitian-American Convention establishing U.S. management of the Haitian customs service.<sup>10</sup>

The other six receiverships (including the first one in the Dominican Republic) followed the contracting model. In Nicaragua, the Americans acceded to requests by the Nicaraguan government to establish a customs receivership along Dominican lines in 1911. In 1918, Panama agreed to appoint an American “fiscal agent” to manage the country’s fiscal institutions.<sup>11</sup> In Peru, President Augusto Leguía went so far as to tell the American embassy in 1921, “My hope is to put an American in charge of every branch of our government’s activities.” He pestered the State Department through September, when Secretary of State Charles Evans Hughes finally agreed to nominate William Cumberland, an economics professor from the University of Minnesota, to take over customs. The contract gave Cumberland the power to reform the administration and collection of customs as he saw fit, including appointment power over all Peruvian employees and the right to hire American citizens to serve as auditors, customs inspectors, statisti-

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<sup>10</sup> The Convention also provided for American control over the appointment of officers to the Haitian gendarmerie and management of all sanitation and infrastructure projects.

<sup>11</sup> See Major (1993, 139–40).

cians, and private secretary.<sup>12</sup> Similarly, the idea of an Ecuadorean receivership came from Quito. In 1925, a military junta overthrew the elected government; as a result, the U.S. withdrew its recognition. Two years later, as part of a general effort to improve its international standing, the Ecuadoreans invited American officials to take control of its customs service. The U.S. extended recognition on August 13<sup>th</sup>, 1928.<sup>13</sup> Perhaps coincidentally, the Ecuadoreans introduced a new constitution in 1929 which removed American authority, although the American head of the customs service stayed on as an adviser (FRUS 1928, 117-8). Bolivia followed a similar course. U.S. officials reported that the finance minister “personally retained” — that is, stole — 20% of all tax collections (Contreras 1990, 274). The Bolivian head of customs estimated that 25% of customs revenue disappeared between collection and delivery to the central government (Gallo 1991). With the approval of the Harding administration, Bolivia agreed to a 1922 refinancing that placed most Bolivian revenue collection under the control of an organization called the *Comisión Fiscal Permanente* (CFP). The CFP’s executive board consisted of one Bolivian and two Americans appointed by the New York banks (Contreras 1990).

Customs receiverships, it should be noted, were not necessary to collateralize sovereign loans. In fact, there is no evidence that the United States acted directly on behalf of bondholders. First, receiverships could be easily terminated by the local government — as Tomz (2012)

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<sup>12</sup> The agreement also gave Cumberland a weekly meeting with President Leguía and a salary of \$16,000 — slightly less than \$215,000 in 2016 dollars (FRUS 1921, 657-8).

<sup>13</sup> There is no evidence that this decision was related to the Ecuadorean decision to establish a customs receivership.

has argued, the USMC did *not* stand ready to swoop down upon a country that did so. (Haiti is a partial exception, because its convention established a ten-year period unilaterally renewable for another ten by the United States.) Second, other mechanisms existed that could have achieved collateralization at lower cost. For example, a 1926 loan to Honduras required the country to impose a dedicated 3 percent export tax. The loan was collateralized via the simple mechanism of collecting the revenue in the United States: exporters needed to purchase special stamps equal to the tax due in order to export, and such stamps were sold exclusively by the National City Bank of New York. The U.S. government agreed to exclude Honduran exports unless they had paid the tax (Jones 1933).

We end our analysis in 1931 because that is the year the United States ceased to seriously attempt to manage customs receiverships. As the Great Depression devastated Latin American finances, the Americans in charge of the D.R.'s customs receivership concluded that the government had no choice but to default on its foreign debt. The Hoover administration concurred, siding with American direct investors who feared higher taxes on their properties more than they worried about default. The Dominican government under Rafael Trujillo, however, did not with this analysis. In a manner reminiscent of Nicolae Ceaușescu fifty years later, Trujillo preferred crushing the Dominican economy over default. In 1931, the American government finally succeeded in pressuring Trujillo into defaulting, effectively ending American fiscal supervision (FRUS 1931, 117-8, Record Group 59, 1931). Other countries rapidly followed. On paper, the Bolivian CFP survived until 1935, and the receiverships in the Hispaniolan countries and Nicaragua limped on until 1941, but in all cases effective control ended around 1931.



### 3 Model

How would we expect the American takeover of customs collection to affect the quality of governance? The main advantage of using customs receiverships as our laboratory is that the goal was to increase revenue. If American intervention was to produce better governance, then it should have (*ceteris paribus*) increased the revenue being generated by the customs service. We therefore modelled the customs service using a principal-agent model with endogenous claim enforcement.<sup>14</sup>

Consider the problem faced by the head of the customs receivership, the principal. Her goal is to maximize the net revenue generated by the customs service. Her objective function is therefore akin to a typical profit ( $\pi$ ) maximizing agent (see equation 1).<sup>15</sup> Her workforce, the agents, however, is corrupt. They extract a share of the customs revenue indirectly as side payments to allow cargoes to enter underinvoiced or steal directly in the form of embezzlement. Before the receivership, monitoring was poor (which allowed corruption to flourish): shirking was therefore also a problem.

How does the head of the customs receivership solve the twin problems of corruption and shirking? The obvious answer is better monitoring. (This is, in fact, what the Americans be-

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<sup>14</sup> Our model follows closely Bowles (1985) and Bowles and Gintis (1992)'s models on contested exchange applied to labor markets.

<sup>15</sup> All our functions are well behaved in terms of continuity, differentiability, and concavity (where needed). We assume that effort (per hour) ( $e$ ) is bounded  $[0,1]$  and that  $R_e > 0$  and  $R_{ee} < 0$ .

lied they brought to the table when the customs receiverships were established.) Unlike local officials, she has few incentives to partake in the bribe-taking: she is well paid, expects future well-paid employment and faces a high probability of being caught if she returns to the United States with any ill-gotten gains. She therefore establishes mechanisms to monitor employee performance and terminate those caught stealing or shirking. She cannot specify the precise level of performance she expects, but she can incentivize her employees — through monitoring ( $m$ ) — to exert the desired effort ( $e$ ).<sup>16</sup> As a result, the variables under her control are the wage ( $w$ ), the number of hours ( $h$ ) and the resources allocated to monitoring ( $m$ ).<sup>17</sup>

$$\pi = R[he(m, w)] - (w + m)h \quad (1)$$

Before her arrival, local customs officers operated with little supervision and faced a low probability of termination ( $t$ ) while their salaries ( $w$ ) represented only part of their total take-home income ( $w+c$ ). The local officers' effort depended on the wage received ( $w$ ), the termination probability ( $t$ ) faced and the extra income ( $B$ ) procured (see equation (2)).<sup>18</sup>

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<sup>16</sup> In this sense, the employment contract is incomplete: the principal cannot specify the effort level but can specify working hours. To induce the agents to apply the desired effort level, the principal incurs additional costs in the form of monitoring.

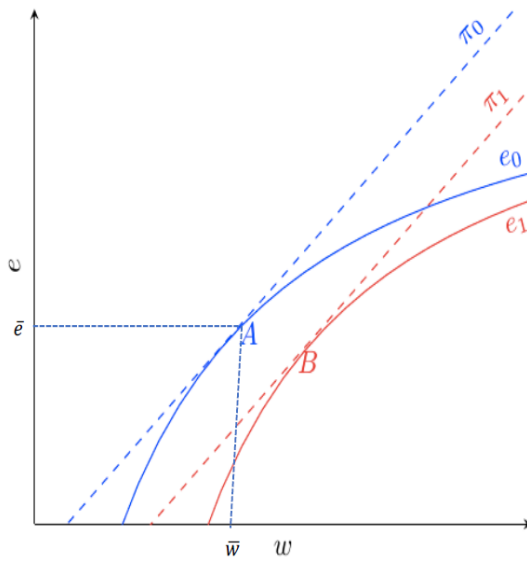
<sup>17</sup> In equilibrium, the marginal productivity of revenue is equal to the marginal cost of effective labor.

<sup>18</sup> Both wages ( $w$ ) and extra income ( $c$ ) generate utility ( $u_w > 0$  and  $u_c > 0$ ) while effort ( $e$ ) causes disutility ( $u_e < 0$ ). The probability of termination,  $t$ , is bounded  $[0,1]$  and inversely related to effort, e.g.  $t=1-e$ .

$$u = f(w, e, c) \tag{2}$$

Now, however, the local officers face a choice. They can continue to steal, in which case they will, most likely, lose their jobs. They can forego stealing and see their take-home income decline. The increase in monitoring reduces the employment rent as the probability of termination is higher at every level of effort than it had been before the Americans arrived.<sup>19</sup> At the new equilibrium wage, the worker will choose to stop stealing, but the reduction of total income will induce a lower level of effort (see Figure 1).

**Figure 1:** The worker’s best response function  $e_0$  shows an effort level of  $\bar{e}$  at the prevailing wage  $\bar{w}$ . When faced with an increased probability of termination, the worker’s response function shifts to  $e_1$  as the employee chooses to forgo the extra income.




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<sup>19</sup> The effect of an increase in monitoring depends on the relative importance of two factors, the reduction in the employment rent and the increase in effort to avoid termination. In this case, we assume that the loss of extra income dominates.

Consider the worker's best response function  $e_0$ . It shows an effort level of  $\bar{e}$  at the prevailing wage  $\bar{w}$ . Effort increases with the wage at a diminishing rate. This represents the situation before the Americans. The customs service's net revenue is represented by isoprofit line  $\pi_0$ . When faced with an increased probability of termination and the loss of illicit income, the worker's response function shifts to  $e_1$  with less effort supplied at any given (licit) wage rate.<sup>20</sup> Net revenue falls to isoprofit line  $\pi_1$ ; the optimal wage rate rises. (See the shift from point A before the Americans to point B thereafter.)

At the prevailing conditions, there is *no* equilibrium at which customs revenues increase (see Figure 1). The workers' total income will have declined as they forgo income from corruption. In this new world, they also face a higher probability of losing their jobs. With the allocation of resources towards monitoring, in equilibrium, the result is a rise in real wages and a fall in net revenue. Should the customs receiver refuse to raise wages, then the fall in revenue will be even worse as local officers further reduce their effort.

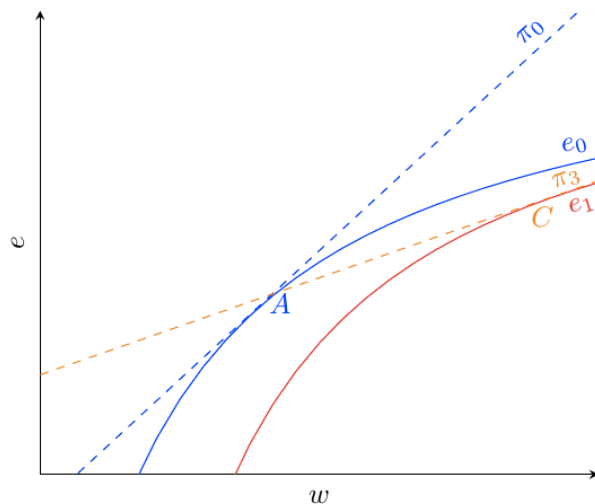
Is there any way to square the circle? Yes, if the receiver brings with her some new revenue-generating technology that increases productivity significantly (see Figure 2). That will cause a shift in the slope of the isoprofit lines. Such technologies, however, will have to be very good to overcome the headwinds suggested by our model ... unless, of course, the receiver chooses to fore-

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<sup>20</sup> Formally, the worker's best response function  $e_0$  depends on embezzlement ( $c$ ) while  $e_1$  does not. The isoprofit lines ( $\pi_0$  and  $\pi_1$ ) exhibit diminishing returns with respect to hours worked ( $h$ ) with the same technology shifter. The difference lies in the existence of monitoring in  $\pi_1$ . As monitoring is costly, the result is a lower level of profit.

go monitoring and instead decides to tolerate the previous level of corruption (see Figure 2).<sup>21</sup> If she has better technology (and higher wages), as depicted in isoprofit line  $\pi_3$ , the head of customs will be able to achieve higher effort to increase revenue collection.

**Figure 2:** Isoprofit line  $\pi_3$  represents the use of a better technology. Paired with higher wages, the head of customs can achieve higher effort to increase revenue collection (point C).



## 5 Empirics

To determine the influence of receiverships on fiscal performance, we built a panel of 19 countries with observations from 1899 to 1931. We included as many Latin American countries as possible and all countries that were under a fiscal receivership. (See Figure 3).<sup>22</sup> In particular, we evaluated the impact of receivership on customs revenue per capita. For most countries, cus-

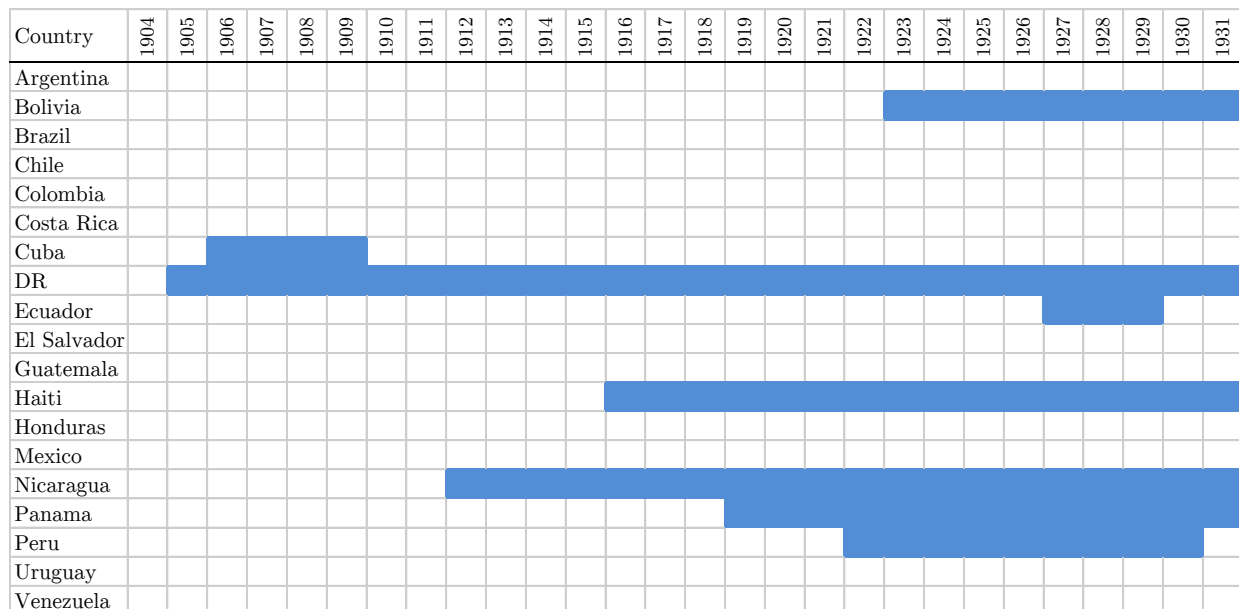
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<sup>21</sup> Operating with the same production function and keeping monitoring constant, the technology parameter would have to increase over 165%.

<sup>22</sup> We excluded Paraguay and Liberia due to data constraints. (Liberia, of course, is not in Latin America.)

toms was the main source of revenue, on average 56% of the total.<sup>23</sup> Customs revenue came from a variety of sources which we expressed in real terms deflated by country-specific import prices.<sup>24</sup>

**Figure 3:** Duration of Fiscal Receiverships



*Sources:* See Appendix A.

With highly export-dependent economies and fiscal systems geared around trade taxes, changes in commercial conditions would be expected to have large effects on fiscal revenue. We therefore included export prices, import prices, and the terms of trade. Such series are not generally available for the countries in our sample during 1900-31. (Nor, for that matter, are GDP statistics for many countries in our sample.) We therefore used a variety of contemporary primary and secondary sources to compile country-specific time series (see Appendix for details).

<sup>23</sup> The correlation between total revenue and customs revenue is 0.90.

<sup>24</sup> Unfortunately, country-specific consumer price indices are not available for all the countries in the sample. See appendix A.

Table 1 provides the summary statistics for the main variables used in the analysis for the entire sample and the non-receivership and receivership groups.

**Table 1:** Summary Statistics

	All			No receivership			Receivership		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Ln customs per capita	482	5.6	1.0	402	5.7	1.0	80	5.3	1.0
Ln trade per capita	349	1.9	1.0	304	1.8	1.0	45	2.2	0.9
Ln terms of trade	593	4.6	0.3	504	4.6	0.3	89	4.7	0.3
Distance	608	4467.0	3416.0	514	4855.4	3561.3	94	2343.1	897.5
Freights	532	325.9	288.9	450	350.4	297.8	82	191.6	184.2

We estimated the following equation:

$$F_{it} = \gamma_{it} + \beta R_{it} + X'_{it}\mu + \epsilon_{it} \quad (3)$$

where  $F_{it}$  is the natural log of real customs revenue per capita for country  $i$  at time  $t$ ,  $R_{it}$  is the indicator variable for the existence or absence of a receivership in country  $i$  at time  $t$ ,  $X'_{it}$  is an array of covariates, and  $\epsilon_{it}$  is a random error term.  $\beta$  is the coefficient of interest as it shows the effect of receivership on per capita fiscal revenue. All specifications include time and country fixed effects.

The OLS regressions show large and significant negative effects from customs receivership on per capita customs revenue. Controlling for the duration of the customs receivership did not affect the results. Controlling for pre-trends reduced the magnitude of the effect just a bit (from an approximate 36% fall in revenues relative to non-intervened countries to 33%) with more precise estimates as the significance is at the 1% level.<sup>25</sup> (See Table 2.)<sup>26</sup>

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<sup>25</sup> Controlling for pre-trends is standard practice in treatment effect studies, as the pre-intervention outcome could be as an anticipation effect. Estimates without accounting for pre-trends could then

**Table 2:** OLS results

The dependent variable is  $\ln(\text{customs revenue per capita})$

	(1)	(2)	(3)
Receivership	-0.4416** (0.1008)	-0.3690** (0.1298)	-0.3962*** (0.0995)
Duration		-0.011 (0.0115)	-0.0123 (0.0126)
R2	0.4174	0.4295	0.4534
N	482	482	454
Pre-trends			X

Robust standard errors in parentheses. (\*), (\*\*), (\*\*\*) significant at 10, 5, and 1 percent respectively. *Receivership* is an indicator variable and *Duration* is the duration of receivership in years. Pre-trends controls correspond to two-lead periods before intervention. All specifications control for the natural log of terms of trade and include time and country fixed effects.

Time series data, however, can display autoregressive properties, where the dependent variable is correlated with the error term. In order to address this concern, we ran our specifications using feasible generalized least squares (FGLS) with an AR(1) process (see Table 3).

**Table 3:** FGLS results

The dependent variable is  $\ln(\text{customs revenue per capita})$

	(1)	(2)	(3)
Receivership	-0.1904*** (0.0690)	-0.1416* (0.0834)	-0.1208 (0.0820)
Duration		-0.0114 (0.0111)	-0.0221* (0.0117)
N	482	482	454
Pre-trends			X

Robust standard errors in parentheses. (\*), (\*\*), (\*\*\*) significant at 10, 5, and 1 percent respectively. *Receivership* is an indicator variable and *Duration* is the duration of receivership in

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under- or overestimate the impact of the treatment. See for example, Bohlmark and Lindahl (2007).

For a general treatment of pre-trends, see Joshua Angrist and Jörn-Steffen Pische (2009), chapter 5.

<sup>26</sup> Our results hold when controlling for import prices and export prices instead of terms of trade.



years. Pre-trends controls correspond to two-lead periods before intervention. All specifications control for the natural log of terms of trade and include time and country fixed effects.

The coefficients on customs receiverships remained large and significant at the 1% level.

When we accounted for the duration of the customs receivership, the impact appears to get worse as the receivership goes along. The coefficient on duration implies a 2% drop in revenue per capita (relative to non-intervened countries) in the first year, compounding with every subsequent year.

A skeptical reader could argue that receiverships are endogenous to falling revenues. It is true that at two receiverships — Cuba and Haiti — were implemented at a time when both countries were experiencing political unrest. It is quite possible that forward-looking governments requested receiverships *before* they entered periods of political or economic upset that negatively impacted revenues. Conversely, forward-looking American officials (or private interests lobbying those officials) might have pressed for intervention before problems materialized. American receivers, in other words, might have been preventing fiscal revenues from falling even more than they actually did.

In order to account for the possibility of a causal link from fiscal performance to receivership, we employed instrumental variable estimation. A suitable instrument would capture the likelihood of the U.S. agreeing to a receivership in a given country without relating to changes in government revenues. Washington was more likely to accede to an intervention the greater the American participation in the local economy. American participation in the local economy was highly correlated with distance: the farther away the country, the less American trade and investment.

Fortunately for our purposes, sailing distance varied over time: the opening of the Panama Canal to commercial traffic in 1921 reduced the distance to the U.S. east coast for all Pacific countries, including Nicaragua, whose main ports faced west. We therefore employed the sailing distance between New York City and the country's principal port as an instrument.<sup>27</sup> We added further variation by using shipping costs from New York City to the country's principal port as an instrument, to represent economic distance. The United States did not open the Panama Canal to increase trade with Latin America. The purpose was to reduce shipping costs between the east and west coasts of the United States.<sup>28</sup> Hence, we can then claim that our instruments are exogenous.

Table 4 presents the reduced-form estimates for both instruments. Instrumentation has noticeable effects on the size of the coefficients. In most specifications, the coefficients on customs receiverships are less precise but they remain negative and significant at least at 10% level.<sup>29</sup> Distance is a stronger instrument than shipping costs as the first stage  $F$  tests indicate.<sup>30</sup>

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<sup>27</sup> For Bolivia, we used the Chilean port of Antofagasta, which was Bolivia's main sea outlet at the time (Bureau of Foreign and Domestic Commerce, 1921, 56)

<sup>28</sup> See Maurer and Yu (2010) for a detailed discussion of American motivations behind the building of the Panama Canal. Our estimates of shipping costs came from the same source.

<sup>29</sup> Coefficients generally expand when using two-stage least squares; we would therefore be reluctant to interpret the size of the coefficient.

<sup>30</sup> As our first stage equation is just-identified –one regressor and one instrument—the F-test is equivalent to the Stock-Yogo test with  $q=1$ .

**Table 4:** I.V., second stageThe dependent variable is  $\ln(\text{customs revenue per capita})$ 

	(1)	(2)	(3)	(4)
Receivership	-1.126*** (0.3640)	-2.839*** (0.9410)	-1.146 (0.7290)	-2.343* (1.3340)
Duration	0.027 (0.0220)	0.018 (0.0290)	0.818** (0.0350)	0.017 (0.0350)
N	482	482	393	365
F (first stage)	16.23	7.01	5.22	2.38
Pre-trends		X		X
Instrument				
Distance	X	X		
Freights			X	X

Robust standard errors in parentheses. (\*), (\*\*), (\*\*\*) significant at 10, 5, and 1 percent respectively. *Receivership* is an indicator variable and *Duration* is the duration of receivership in years. Pre-trends controls correspond to two-lead periods before intervention. All specifications control for the natural log of terms of trade and include time and country fixed effects.

Less trade under a receivership — a counterintuitive but certainly possible result — would lead directly to lower revenues. After all, the receiverships (and our instruments) may be identifying trade trends. We therefore used the per capita volume of trade (imports plus exports) with the United States as a placebo for customs revenue per head. We calculate U.S. trade with these countries using *American* official statistics, since we would expect local statistics to be affected by corruption. Table 5 presents these placebo regressions. The coefficients on trade are positive and slightly significant. The drop in revenue associated with receiverships was not the result of a fall in trade volumes.

**Table 5:** Placebo resultsThe dependent variable is  $\ln(\text{trade} - \text{exports plus imports} - \text{per capita})$

	(1)	(2)
Receivership	0.2531*	0.2385*
	(0.1445)	(0.1350)
Duration		-0.0033
		(0.0151)
R2	0.5184	0.6729
N	348	348

Robust standard errors in parentheses. (\*), (\*\*), (\*\*\*) significant at 10, 5, and 1 percent respectively. *Receivership* is an indicator variable and *Duration* is the duration of receivership in years. All specifications control for the natural log of terms of trade and include time and country fixed effects.

One potential issue with our IV strategy is that customs receivership is a binary variable. As a result, in the first stage of the 2SLS regressions, we are mapping a continuous instrument to an endogenous binary outcome. We can obtain better mapping through a non-linear specification, such as probit. In theory, we could run a probit first-stage estimation but it would yield inaccurate standard errors.<sup>31</sup> We square this circle using a three-stage least squares (3SLS) specification. The first stage is a probit which exploits the binary nature of the endogenous regressor; it uses our instruments to obtain the predicted probability of a customs receiverships. The second stage projects the instruments to the endogenous regressor and provides more efficient estimation: it runs an OLS using the predicted probability of a receivership and the instruments to obtain fitted values for the endogenous regressor. The third stage uses the projected customs receivership to estimate the effect on per capita customs revenue. The resulting coefficient on the projected endogenous regressor is the most efficient estimator of the average treatment effect (Cerulli 2012, 2015). Table 6 presents the results. The coefficients on customs receiverships are

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<sup>31</sup> See Angrist and Pischke (2009), pp. 190-192.

both negative and significant at the 1% level for both instruments. Note that we work with fewer observations as the first stage fitted values often perfectly predicted the value of the second stage instruments.<sup>32</sup>

**Table 6:** 3SLS – third stage

	(1)	(2)
Receivership	-0.522***	-0.338**
	(0.1570)	(0.1580)
N	150	110

Robust standard errors in parentheses. (\*), (\*\*), (\*\*\*) significant at 10, 5, and 1 percent respectively. *Receivership* is an indicator variable. All specifications control for the natural log of terms of trade and include time and country fixed effects.

Skeptics might be rightfully worried that our results have not fully accounted for pre-existing trends in revenues. In our OLS results, we use a two-period lead to control for pre-trends for the intervened countries. That strategy, however, has its limitations: it compares the intervened countries against *all* non-intervened Latin American countries. Their pre-trends may be dramatically different for a whole host of potential reasons.

In a perfect world, we would be able to compare every intervened country against a country that looked just like it, save that it was not placed under a customs receivership. We would then compare the path of revenues after intervention between the two countries. Unfortunately, no such counterfactual countries exist. Synthetic controls, however, allow us to approximate a counterfactual country by creating a weighted average of non-intervened countries with roughly the same characteristics as the intervened country before the intervention. More formally, the

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<sup>32</sup> Unfortunately, we cannot add duration to our specifications as it perfectly predicts the outcome in the probit stage.

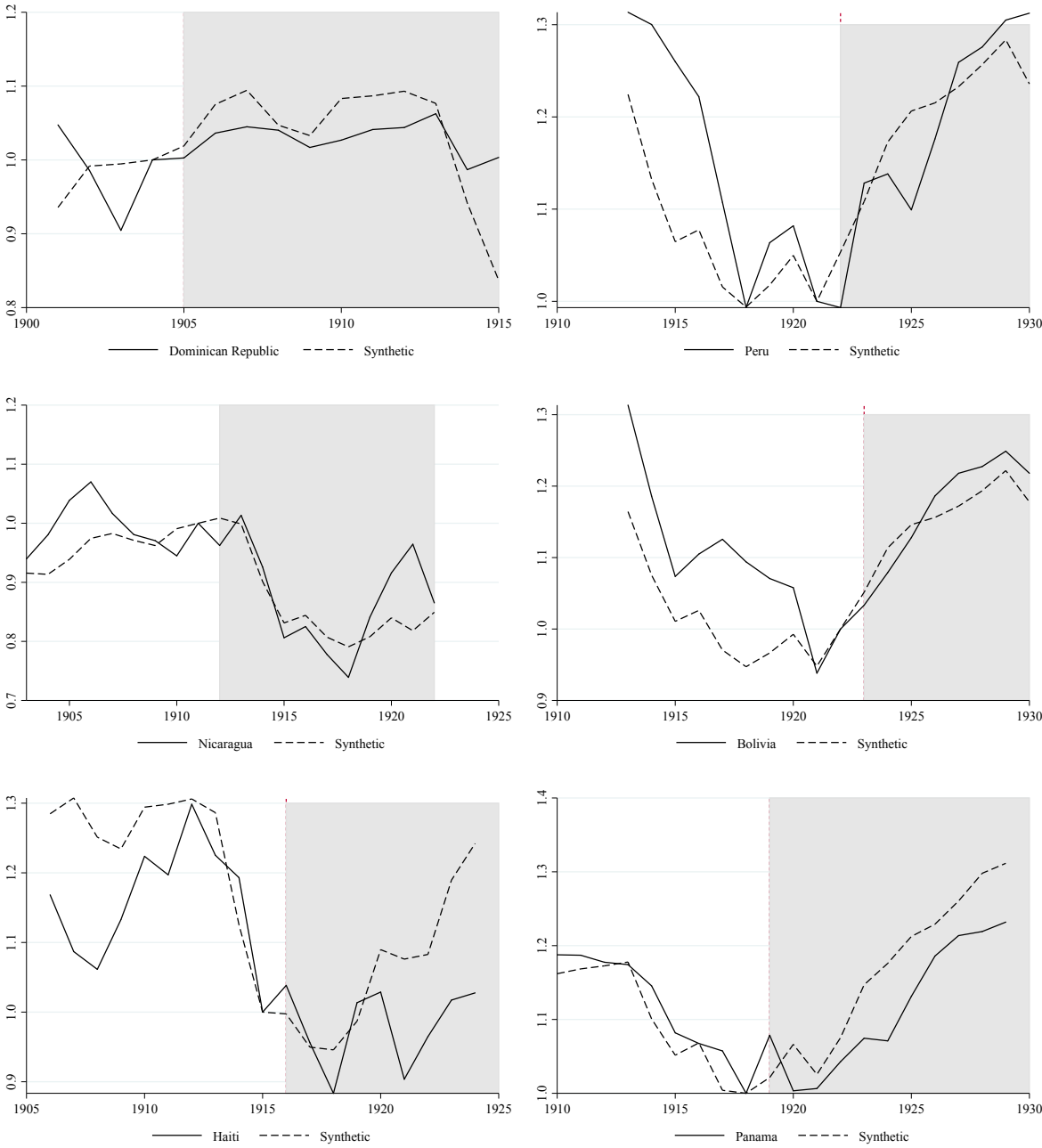
synthetic control method creates a convex combination of comparison countries to approximate the characteristics of the treatment country, in this case the one placed under receivership (Abadie and Haimueller 2010). The synthetic customs revenue per capita for the “control” will be a linear combination of the per capita customs revenue of all control units given their respective weights. The identification assumption on synthetic controls is that the outcome variable (per capita customs revenue) is generated by the same structural process before the intervention. In other words, the synthetic control exhibits the same (or very similar) pre-trends as the intervened country. This method also allows us to cross-check our regression results for every intervention using something as close to an experimental technique as is possible for social scientists to get using actual historical data.

We applied the synthetic control approach to six intervened countries using the never intervened countries as controls (see Figure 4).<sup>33</sup> In every case, the intervened countries underperformed for several years following the intervention. The best that can be said by a rather a generous observer is that the Nicaraguan and Bolivian receiverships performed roughly the same as the non-intervened control over the entire course of the period. There is no sign that any performed better.

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<sup>33</sup> Due to the Mexican Revolution, we lack fiscal data from the years 1914-1917. As we need a balanced panel, having Mexico in the sample resulted in a notable reduction of the dataset. Hence, we excluded Mexico from the control group. Cuba and Ecuador had too many gaps in the data to use synthetic controls.

**Figure 4:** Normalized real revenue per capita, actual vs synthetic (year before intervention=1.0)



## 6. Conclusion

The idea of contracting out state functions to foreign bureaucrats has gained much currency as of late. In 1996, Mozambique placed its customs authority under the direct control of a Brit-

ish development company, Crown Agents, descended from the British colonial service. Angola followed in 2001. In 2003, the government of the Solomon Islands delegated control of law enforcement to police officers from Australia and New Zealand. In 2005, Liberia agreed to the U.N. Governance and Economic Management Assistance Program (GEMAP), which “gave outside experts cosigning authority in key government ministries and state-owned enterprises, provided for the creation of an Anti-Corruption Commission, gave customs collection to an external contractor, and placed an international administrator as head of the Central Bank” (Krasner 2012). In 2006, the Guatemalan government granted the power to investigate and prosecute crime to the U.N.-run International Commission against Impunity in Guatemala (known as CICIG, for its Spanish initials) (WOLA 2015). In 2016, the Honduran government signed an agreement with Organization of American States (OAS) to create the Mission to Support the Fight against Corruption and Impunity in Honduras (MACCIH), in which a group of foreign prosecutors and judges (under Honduran law) will supervise and support Honduran district attorneys and judges specially chosen by MACCIH to prosecute and try selected criminal cases (OAS 2016). The IMF-run Supporting Economic Management in the Caribbean (SEMCAR) missions and the activities of the Fiscal Management in the Caribbean program look remarkably close to the fiscal receiverships of the last century, down to the geographic coverage. Finally, we cannot leave out the other Technical Assistance Missions run by the IMF. Such missions rarely post IMF personnel directly inside the administrative chain-of-command of the target states, but their goals are generally to improve governance (often fiscal collection) and IMF advisors have a great deal of *de facto* authority inside countries receiving IMF assistance.



Our findings cast doubt on the efficacy of these modern experiments with shared governance. *Every* U.S. customs receivership failed to raise revenues. Even in cases where the receiverships coincided with large rate increases (as in Bolivia) or an end to insurgent attacks on customhouses (as in the D.R.) revenues failed to beat their pre-receivership levels.<sup>34</sup> In the case of the Dominican receivership, the ultimate result was tragic. The government failed to gain more income but the insurgents soon discovered that they did not need to sack the customhouses and could raise resources from the countryside. By 1912 the country was back in a state of civil war. Four years later the Dominican state entirely collapsed, forcing a full-scale American occupation.<sup>35</sup> The American theory that shared governance would lead to higher revenues which would in turn lead to political stability had failed.

What we know of these modern experiments in shared governance is consistent with the evidence presented in this paper. Consider, for example CICIG in Guatemala. Despite some spectacular successes in prosecuting high-level government officials, Guatemala's score on Transparency International's corruption perception index has remained unchanged since its founding (100 is the highest score; Denmark scores 91): 28 in 2006 and 28 in 2016.<sup>36</sup> Guatemala also fell back

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<sup>34</sup> Bolivia was the only receivership to impose sweeping rate increases. The rate increases produced a lower-bound of 68% of the absolute revenue increases under the CFP.

<sup>35</sup> We should note that the revenue decline suffered by the D.R. in 1915 was due to the outbreak of World War I; other Latin American countries suffered the same trade shock and similar falls.

<sup>36</sup> The score rose to 34 in 2009 before sliding back down the scale.

on the “rule of law” and “stateness” measures of the Bertelsmann Stiftung’s Transformation Index between 2006 and 2016.<sup>37</sup>

We would suggest that foreign agencies involved in future shared governance arrangement be very clear about what they bring to the table. At least two of the following three conditions should hold for shared governance to have a chance at success. First, the foreigners should bring some new technology or equivalent institutional innovation that can *only* be implemented under their direct control. Second, the foreigners should bring the willingness and ability to spend significantly more on public salaries. Third, the foreigners should increase the punishment for corruption beyond the simple loss of one’s job. This last condition, we note, goes rather beyond shared governance. It implies taking over far more than management of executive institutions: it implies rewriting the legal code, reforming (or transplanting) the judiciary, and taking control of enforcement.

To be clear, we are not saying that foreign intervention can never work or that governance quality is immutable. We are saying, however, that the experience of the 20<sup>th</sup>-century customs receiverships does not give one much confidence in the ability of modern shared governance arrangements to make things better. To return to the European example with which this paper began: it is possible that sending German tax collectors to Greece would help raise revenues, but that is not, to judge from the historical evidence, the way to bet.

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<sup>37</sup> For the Bertelsmann Stiftung’s Transformation Index, see <https://www.bti-project.org/en/index/status-index/>.

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