

The Fiscal Cost of Conflict: Evidence from La Violencia in Colombia

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The Fiscal Cost of Conflict: Evidence from *La Violencia* in Colombia

Diana Carolina Ricciulli Marín *

Abstract

This paper studies the effect of internal conflict on local fiscal capacity using evidence from Colombia's political conflict in the mid-20th century, better known as *La Violencia*. Following a difference-in-differences strategy, I find that internal conflict has negative long-term consequences in local fiscal capacity. More precisely, municipalities affected by *La Violencia* experienced an average reduction of 10.3% in their tax revenue and a fall of 2.8 percentage points on their ratio of taxes to total revenue. Effects lasted for more than a decade and are only partially explained by a population and economic activity downturn. These results are consistent with previous evidence indicating a negative effect of violence on tax collection efficiency at the local level.

Keywords: Fiscal capacity; Internal conflict; *La Violencia*; Colombia

JEL: D74; H20; N26

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El costo fiscal del conflicto: evidencia para *La Violencia* en Colombia

Diana Carolina Ricciulli Marín*

Abstract

Este trabajo estudia el impacto del conflicto interno en la capacidad fiscal de los gobiernos locales usando evidencia del conflicto político de mediados de siglo XX en Colombia, más conocido como *La Violencia*. Usando una estrategia de diferencia-en-diferencias, se encuentra que el conflicto interno genera consecuencias negativas y significativas de largo plazo en la capacidad fiscal local. En particular, los resultados señalan que los municipios afectados por *La Violencia* experimentaron una reducción promedio de 10,3% en el recaudo de impuestos y una caída de 2,8 puntos porcentuales en la proporción de impuestos sobre ingresos totales. Estos efectos se mantienen por más de una década y son solo parcialmente explicados por las menores dinámicas económicas y poblacionales de la época. En general, los hallazgos son consistentes con evidencia previa que señala efectos negativos de la violencia en la eficiencia en el recaudo de impuestos a nivel territorial.

Palabras clave: Capacidad fiscal; Conflicto interno; *La Violencia*; Colombia

JEL: D74; H20; N26

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I Introduction

During the last century, the prevalence of civil wars has significantly thwarted development worldwide (Collier, 2004). Since 1960, twenty percent of nations have experienced at least ten years of civil war with devastating economic and social consequences (Blattman & Miguel, 2010). The more visible effects involve the destruction of physical and human capital, while others less evident are related to the collapse of state and institutions (Ayres, 1998; UNDP, 2008). The latter are particularly difficult to recover from and are likely to impact generations of people (Collier et al., 2003). Understanding the mechanisms leading to such adverse conditions is imperative to mitigate and reverse the long-term consequences of conflict.

Among the legacies of civil war, the deterioration of fiscal capacity stands out as particularly important. Contrary to the contention of Tilly (1990) that “states made war, and war made states,” Centeno (2003) and Besley and Persson (2010) argue that civil wars dampened fiscal capacity by increasing political fragmentation and physical capital destruction. Cárdenas (2010), Thies (2005) and Lu and Thies (2013) empirically support this argument using cross-country evidence from Latin America and the Middle East. Likewise, Barrett (2018) and Jibao, Prichard, and Van den Boogaard (2017) find the same adverse effects of conflict using within-country data from Afghanistan and Sierra Leone, respectively. While the former uncovers a negative impact of conflict on provincially-collected central government revenues, the latter present evidence of weak fiscal institutions in the aftermath of civil war.

Although most empirical evidence agrees on a negative impact of civil war on fiscal institutions, the mechanisms involved in this relationship are less understood. Furthermore, the bulk of the literature has focused on central government revenues with few systematic research efforts aimed at understanding the impact of conflict on local tax systems. These last ones are particularly relevant in highly decentralized countries like Colombia, where approximately 40% of total public expenditures are in the hands of subnational governments (Porto, Pineda Mannheim, & Eguino, 2018).

In this paper, I study the impact of internal conflict on local fiscal capacity in Colombia using evidence from a period of political violence in the mid-20th century, better known as *La Violencia*. Specifically, I estimate the effects of violence on subnational tax revenues and explore the possible causal mechanisms underlying this relation. To do so, I collect and code historical data of subnational public finances for the period between 1940 and 1964, and information of municipalities affected by conflict during the most intense years of *La Violencia* (1948-1953).

Two traits make *La Violencia* an ideal setting for studying the relationship between civil conflict and local fiscal capacity. First, starting in the mid 1940s and until the early 1950s, this period was characterized by the violent confrontation of the two traditional parties in Colombia, Liber-

als and Conservatives. Available estimates indicate a death toll of between 100,000 and 200,000 (Guzmán, Fals, & Umaña, 1962; Oquist, 1980; Romero & Meisel, 2019), while other consequences included the partial collapse of the state and its physical absence from large areas of the country (Oquist, 1980). Second, tax and non-tax income (own-source revenues) of municipal governments at the time represented around 25% of national own income, higher than the actual share of approximately 20%. Moreover, local authorities during *La Violencia* had relative freedom to shape fiscal institutions by choosing tax rates, impeding cadastre updates or selecting revenue collection methods.

In this context, and based on available theoretical and empirical evidence, I expect municipalities affected by *La Violencia* to experience lower fiscal capacity through two main channels. First, by a tax base deterioration due to physical capital destruction, forced migration, mortality, and economic activity decline. All these dynamics have been largely documented in historical studies of *La Violencia* (Guzmán et al., 1962; Oquist, 1980). Additionally, a second channel is through lower tax collection efficiency, resulting from reduced citizens' willingness to pay taxes and lower government investments in fiscal institutions. Besley and Persson (2008) support these mechanisms through a theoretical model in which the probability of internal conflict reduces the incentives to invest in revenue-raising institutions. Moreover, available empirical evidence for Colombia confirm these findings, showing that the incidence of violence is related to lower enforcement of the tax regime by the government (i.e., low investment in cadastre) and reduced willingness of the population to comply with tax obligations (Fergusson, Molina, & Riaño, 2019; Ch, Shapiro, Steele, & Vargas, 2018; Cardenas, Eslava, & Ramirez, 2016).

Identifying the causal relationship between conflict and local fiscal capacity is challenging. First, violent and non-violent municipalities may differ in many additional variables that are correlated with the incidence of conflict and also affect fiscal institutions (i.e., political affiliation, legal institutions, and corruption). Thus, computing a simple difference in fiscal capacity between both types of municipalities, aside from capturing the impact of *La Violencia*, reflects other differences that are visible even in the absence of conflict. Second, civil war can be both a determinant and an outcome of future and past state capacity (Besley & Persson, 2010), and so it is difficult to disentangle the specific impact of violence on local fiscal capacity.

I address these potential sources of endogeneity bias using a difference-in-differences methodology. I approximate the omitted variable bias using the difference in fiscal capacity between violent and non-violent municipalities before the start of *La Violencia* (Angrist & Pischke, 2008). This approach is convincing as long as the increase of fiscal capacity in non-violent municipalities is similar to what would have happened to violent municipalities in the absence of *La Violencia*. I present evidence that both groups of municipalities trended together in the absence of conflict, which gives credibility to this idea.

Following this empirical strategy, I find that internal conflict has negative long-term consequences in fiscal capacity. In particular, in a sample covering the period 1940-1953, estimates reveal that municipalities affected by *La Violencia* experienced an average reduction of 10.3% and a fall of 2.8 percentage points on their ratio of taxes to total revenue. In contrast, other primary sources of local revenue, including intergovernmental transfers and non-tax income, remain unchanged. Also, when extending the sample to 1964, I find that the negative effects on taxation lasted for at least eighteen years following the outbreak of conflict.

These findings survive a series of robustness exercises. First, I control directly for differential trends based on observable municipality characteristics, including historical institutions' proxies, historical conflict, political and geographical variables. Results are largely unchanged, ruling out the possibility that results are driven by differential trends based on these observables. Second, I exclude capital cities to verify that results are not explained by secular changes in tax revenues that are specific to these places. Third, I run the main specification on a balanced subsample. Given the absence of information on subnational revenues for some municipalities on specific years, this last exercise allows me to check that results are not biased by the unbalanced nature of the sample.

To further explore how violence can affect fiscal capacity, I run additional specifications controlling for population growth and local economic activity proxied with livestock production data at the municipality level. I find that the effect is only partially explained by these variables, suggesting an impact of violence on other more structural variables.

These results are consistent with previous evidence indicating an effect of internal conflict on tax collection efficiency. Cardenas et al. (2016) and Fergusson et al. (2019) find that conflict affects collection efficiency by promoting a negative reciprocity of tax-payers towards a state that fails to guarantee their security and protect their private property. Also, Ch et al. (2018) argue that violence deters fiscal capacity as it enables groups with *de facto* power to build fiscal institutions consistent with their preferences.

The findings of this paper contribute to three different strands of existing literature. First, they add to the literature studying the effects of civil war on fiscal capacity. In general, evidence on this area has focused on the impact of conflict on central government revenues (Chowdhury & Murshed, 2016; Cárdenas, 2010; Lu & Thies, 2013), while efforts to analyze the consequences on local tax systems remain scarce. This paper adds to this literature by studying the causal impact of internal conflict on local fiscal capacity and exploring the possible mechanisms involved.

Second, this work contributes to the literature of state-building in the developing world. Understanding how internal conflict affects the consolidation of tax systems can help us understand how state capacities are built and how they can be transformed. In particular, evidence in this area has so far led to conflicting results. While some authors conclude on a negative link between civil wars and state building (Cárdenas, 2010; Centeno, 2003), others argue on a positive association

(Soifer, 2015; Bellows & Miguel, 2006).

Finally, this paper contributes to the understanding of economic and political dynamics during *La Violencia* in Colombia. In this area, Chacón (2004) and Chacón, Robinson, and Torvik (2011) focus on the study of its determinants, and recently, Fergusson, Ibáñez, and Riaño (2020) examine its long-term impacts on educational attainment and aggregate development. To the best of my knowledge, this is the first paper to quantify the effects of *La Violencia* on local fiscal capacity in Colombia.

The rest of the paper is organized as follows. Section 2 presents a historical background of *La Violencia* and local fiscal capacity in the mid-20th century in Colombia. Section 3 clarifies the conceptual framework used to measure fiscal capacity. Section 4 describes the data sources and empirical strategy. Section 5 presents the main results and robustness checks. Finally, section 6 explores the possible causal mechanisms and the last section concludes.

2 Historical background

2.1 *La Violencia*

Since the middle of the 19th century and throughout the first half of the 20th century, political party struggles were at the center of internal conflicts in Colombia. Liberals and Conservatives confronted each other in all the civil wars of the 19th century, in the War of the Thousand Days from 1899 to 1902, and during *La Violencia* in the middle of the 20th century (Oquist, 1980).

One of the historical moments that preceded *La Violencia* was the 1930 presidential election, when Conservatives lost power after almost three decades of leadership. The reformist projects of Enrique Olaya Herrera (1930-1934) and especially of Alfonso López Pumarejo (1934-1938), increased resistance of Conservatives that did not accept the construction of Liberal hegemony. In 1938, the election of Eduardo Santos from the moderate Liberal wing attenuated the Liberal reformist spirit. However, López Pumarejo was elected president again in 1942. The opposition made this last administration particularly weak, leading to the forced resignation of López in 1945 and the subsequent election of Conservative Mariano Ospina Pérez in 1946 (Guzmán et al., 1962; Oquist, 1980).

With the end of the liberal hegemony in 1946, a period of intense political violence between Liberals and Conservatives began (Oquist, 1980; Bejarano, 1987). Liberals' attempts to overthrow the constitutionally-elected government of Mariano Ospina Pérez led to continuous confrontations between the two parties. The division and confrontations took place at the national, regional, and local levels. In fact, partisan rivalries at the national level had direct repercussions at the local levels, as governors were appointed by the president and mayors were elected by governors (Sánchez & Meertens, 1983). These local partisan struggles were deepened by plenty of interests that surrounded

the competition over local power structures. For instance, being politically connected could be a determinant for winning a legal battle over land limits, having protection from government officials, or going or not going to jail (Oquist, 1980).

Although historians disagree on the exact timing and more intense years of *La Violencia*, the majority coincide on a first period of intense confrontation from 1948 to 1953. More precisely, beginning with the assassination of Liberal leader Jorge Eliecer Gaitan in 1948 and ending with the arrival of the military government of Gustavo Rojas Pinilla in 1953. Five years after the end of this period, in 1958, the National Front Regime legislated the rotation of power between Liberals and Conservatives for a period of four presidential terms (Oquist, 1980).

One of the most catastrophic consequences of this period was the number of casualties. Oquist (1980) estimates around 194,000 deaths between 1948 and 1966, Guzmán et al. (1962) calculate that approximately 200,000 people died up to 1962, while Romero and Meisel (2019) estimate a maximum number of 113,032 deaths in the period 1949-1966. Furthermore, violence also resulted in significant economic losses, forced migration, and illegal land seizure. In Tolima, a department profoundly affected by conflict, around 34,753 farms were abandoned because of political coercion or military action (Guzmán et al., 1962). A quantitative survey from this state in 1960 reports that 59% of migrants identified violence as the leading cause of their relocation (Pineda, 1960). All in all, the collapse of government and its physical absence from large areas of the country facilitated illegal activities and the concession of large amounts of wealth to local elites (Guzmán et al., 1962).

2.2 Local public finances in the mid-20th Century

During the first decades of the 20th century, municipalities in Colombia experienced an increase in fiscal autonomy. Although the Colombian Constitution of 1886 transformed the country from a decentralized federal system to a centralized system, a series of reforms promoted fiscal decentralization during the first half of the 20th century. For instance, the *Código de Régimen Político y Municipal* of 1913, increased the degree of discretionality of local governments over their tax institutions. In particular, this code established that departmental assemblies were allowed to tax new goods or services, as long as these were free from taxation at the national level. It also established that these new sources should be spent exclusively in municipalities.¹

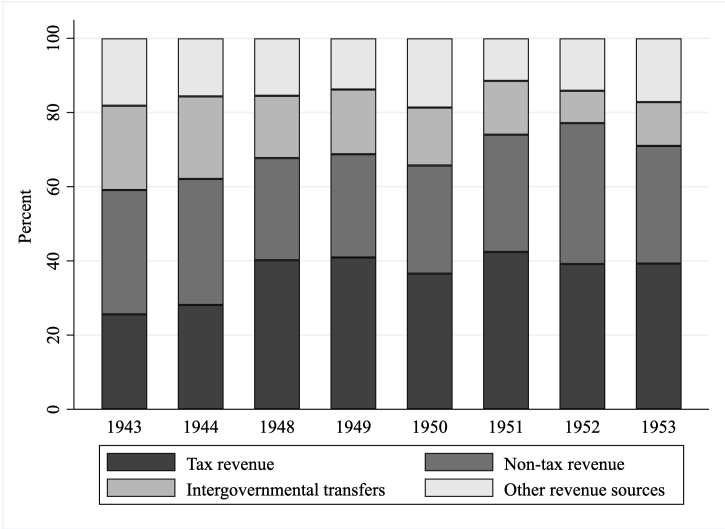
Following these new guidelines, Law 34 of 1920 established a maximum property tax rate for municipalities of two pesos per thousand of property valuation (Calderón, 1989). Subsequently, Law 25 of 1921 created the Colombian valorization tax. Through this last system of taxation, the cost of public interest projects at the local level was allocated to properties in proportion to the benefits conferred. Altogether, these two taxes, followed by the industry and commerce tax, became the

¹See *Diario Oficial*, Year XLIX, N. 15012, October 6 of 1921, p.1.

most important local taxes levied at the municipality level in the mid-20th century and conferred a high degree of fiscal autonomy to subnational governments ((Bird, 1981; Banco de la República, 1990).²

Figure 1 shows the composition of municipality revenues during the period 1943-1953. Own-source revenues (tax and non-tax income) prevailed throughout this decade. In particular, while the share of intergovernmental transfers represented between 9% and 23% of total revenue, own-source revenues ranged between 59% and 77%. Besides from taxation, own sources included sales and rents of municipal public goods, and fees on local public services such as energy, water, and sewage (DANE, 1954).

Figure 1: Composition of municipality revenues (1943-1953)



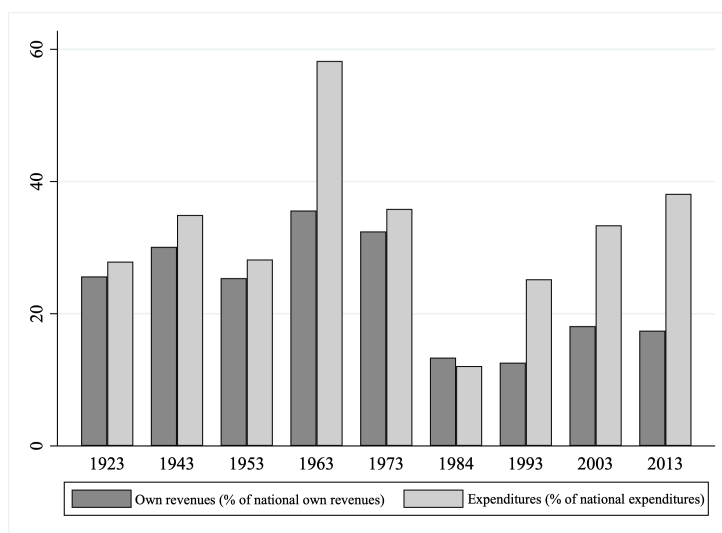
Source: Authors’ calculations using information from *Informes Financieros del Contralor*. Notes: This graph shows the participation of each source of municipal revenue on total revenue.

This fiscal autonomy was also relevant when compared with the national level. In the first decades of the 20th century, municipal tax and non-tax revenues represented between 25% and 30% of national own-source revenues, and municipal expenditures fluctuated between 28% and 35% of total national expenditures (Figure 2). As shown in Figure 2, while local expenditures regained similar importance following the decentralization reforms of 1991, own sources never returned to the levels observed in these decades. In particular, regarding expenditures composition, Ocampo (2015) and Ramirez and Téllez (2007) highlight the elevated responsibilities of subnational governments in terms of social expenditures at the time, which included education and health expenses, as well

²See *Diario Oficial*, Year LVII, N. 17978, November 12 of 1921, p.1.

as public investment.

Figure 2: Municipal revenues and expenditures (1923-2013)



Source: Authors' calculations using information from *Informes Financieros del Contralor*; *Estadísticas Fiscales DANE*; *Ejecuciones Presupuestales DNP*. Notes: This graph shows municipal own-source revenues as percentage of national own-source revenues (in dark grey), and municipal expenditures as percentage of national expenditures.

3 Conceptual Framework

Fiscal capacity represents the ability of governments to raise revenues from a broad tax base (Ricciuti, Savoia, & Sen, 2019). It is not an absolute phenomenon but a relational one that depends on government investments in tax institutions and citizens' willingness to pay taxes (Levi, 1988). Following this concept, finding a measure of fiscal capacity in terms of observable outcomes is challenging. Existing studies have proxied this variable using tax revenues, tax-to-GDP ratio, the percentage of taxes on total revenues, taxes per cápita, among others (Besley & Persson, 2008; Cárdenas, 2010). However, all these definitions reflect more than just the government's ability to raise taxes. Specifically, and by construction, these indicators depend on other factors such as the tributary base and nominal tax rates, which are in turn related to economic activity and laws and regulation of a specific area.

In this paper, I use total tax revenues and the ratio of taxes to total revenue as proxies of fiscal capacity. Given the mentioned limitations, these variables could be capturing more than just the tax collection efficiency of governments. To better isolate the effect of interest, I control for changes in the tributary base. Specifically, I present additional estimations including population growth and economic activity, and using taxes per cápita as the main dependent variable. Moreover, the

inclusion of municipality fixed effects controls for the impact associated with different nominal tax rates. In particular, as exposed in the previous section, structural reforms on local tax rates didn't occur during the period of analysis, giving credibility to this approximation.

4 Empirical Approach

4.1 Data and key variables

To estimate the impact of *La Violencia* on local fiscal capacity, I build a municipality-year level panel combining data from different sources. The main dependent variables of the analysis come from *Informes Financiero del Contralor*. These books contain detailed information on revenues and expenses in Colombian municipalities for nine years from 1940 to 1953.³ This data is only available for municipalities that were already part of departments⁴ in 1940 and excludes territories of *Intendencias* and *Comisariás*. However, and given that most of the *Intendencias* and *Comisariás* areas were unsettled at the time, the first group represents 97% of total municipalities.

From *Informes Financieros del Contralor*, I code information on the main sources of municipal revenue (taxes, intergovernmental taxes and non-tax income) for the period 1940-1953. Moreover, I extend these series using information from the publication *Estadísticas Fiscales* of the National Administrative Department of Statistics (DANE). From these books, I digitized municipal level data of taxes from 1957 through 1964. I also transform all these variables to constant Colombian pesos of 1940 using inflation data estimated by GRECO (1998).

Regarding the main independent variable, I use information from the first and second volumes of *Revista de Criminalidad*, an annual publication in which the National Police Department of Colombia recorded the areas that were more affected by bipartisan conflict during 1948-1953. This information has been used in several studies of *La Violencia*, including Chacón (2004), Chacón et al. (2011) and Fergusson, Ibáñez, and Riaño (2020). Using this source, I build a dummy variable that equals 1 if the municipality was affected by bipartisan conflict between 1948 and 1953 and 0 otherwise. Moreover and to address violence persistence, I construct a municipality dummy variable that indicates the presence of violence between 1958 and 1963. I code this last variable from Guzmán et al. (1962).

Furthermore, to evaluate mechanisms underlying the main effect of interest, I use information from *Anuarios Generales de Estadística* published by DANE, and the Colombian Census of 1938, 1951 and 1964. From these sources, I obtain statistics of livestock slaughter and population

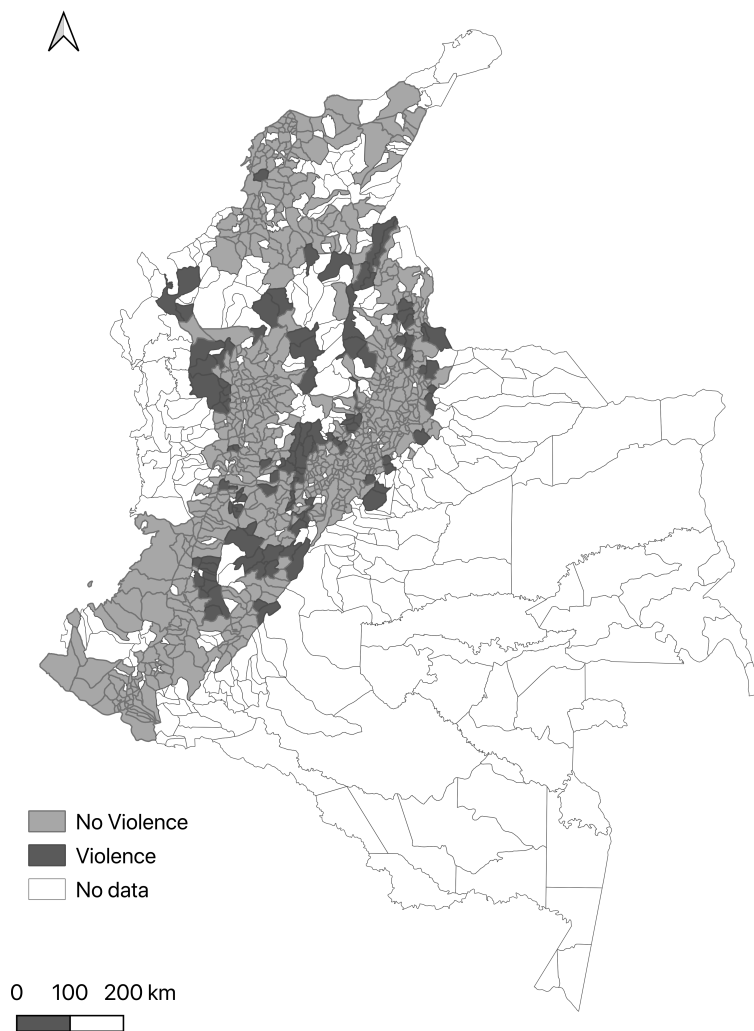
³More specifically, 1940, 1943, 1944, 1948, 1949, 1950, 1951, 1952, 1953.

⁴Departments or *Departamentos* in spanish, is a type of subnational division in Colombia that prior to 1991 Constitution, differed from *Intendencias* and *Comisariás* in their administrative regime. While departments had an important administrative autonomy, the two last groups were more dependent on central government decisions.

growth at the municipality level.

Finally, I complete this set of variables with additional information from the Municipalities Panel data from Universidad de Los Andes Center for Economic Development Studies (CEDE) and *Boletín Mensual de Estadística* of 1973, published by DANE. From the former, I collect measures on colonial institutions, historical conflict, and geographical variables, and from the latter, I code information on the results of the 1946 presidential elections. All of these variables are included as covariates in the difference-in-differences setting.

Figure 3: Map of the main sample

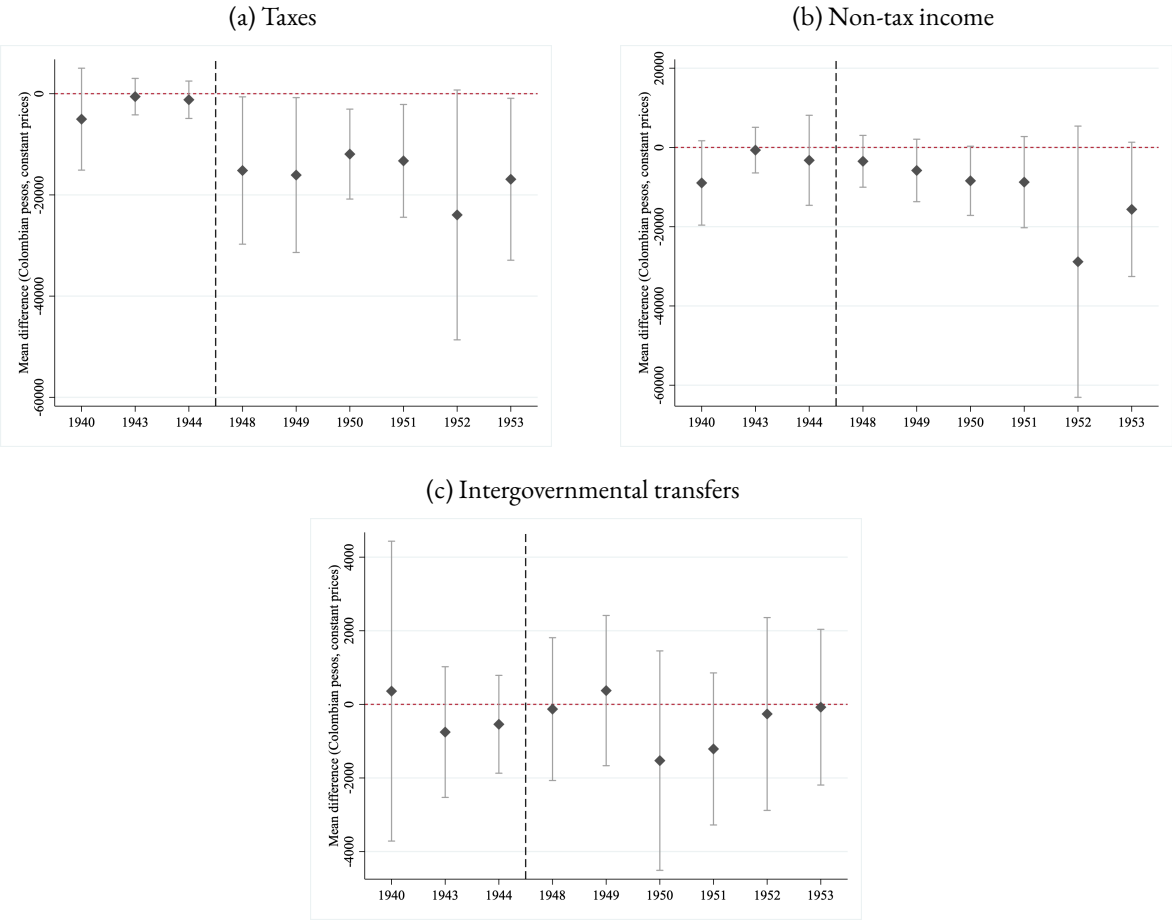


Source: Own elaboration using data from *Revista de Criminalidad*. **Notes:** This map shows the distribution of treated (violence) and control (no violence) municipalities in the main sample. Municipal boundaries represented on the map correspond to their current location and not those of the period under study.

With the aforementioned data sources, I build a panel of 738 municipalities (108 affected by *La Violencia* (“treated”) and 630 not affected (“controls”) from 1940 to 1953. I drop Colombia’s capital, Bogotá, in order to avoid bias due to its unique fiscal structure at the time. Figure 3 depicts the resulting main sample after combining the different data sources.

To illustrate data on local public finances, Figure 4 presents mean differences in the main sources of revenue between municipalities with and without violence for the period 1940-1953. First, notice that there are no significant differences in any of these variables before the start of political violence (1940-1944). In contrast, after the beginning of political violence in 1946, municipalities affected by conflict show significantly lower revenues from taxes (panel (a)). Meanwhile, differences in other sources of revenues remain insignificant.

Figure 4: Mean differences in main sources of local revenue (1940-1953)



Notes: Authors’ calculations using *Revista de Criminalidad* and *Informes Financieros del Contralor*. Panels (a), (b) and (c) show mean differences in taxes, non-tax income and intergovernmental transfers between violent and non-violent municipalities, respectively. Values are expressed in constant Colombian pesos of 1940. 95% confidence intervals are depicted.

Finally, Table 1 compares municipalities with and without violence on several dimensions. In particular, treated and control groups differ in many of the expected ways. For instance, treated municipalities had, on average, a higher liberal vote share in the 1946 presidential elections (73% versus 54%). Also, a higher percentage of municipalities in the control group had indigenous population and Spanish occupation in the first half of the 16th century, consistent with better institutional development in this group. Moreover, the percentage of municipalities that experienced land disputes at the beginning of the 20th century is higher for the treatment group (13%) than among the controls (5%). Finally, geographical characteristics present also significant variations.

Table 1: Differences between Violent and Non-Violent municipalities

Variable	No Violence		Violence		Difference P-value
	N	Mean SD	N	Mean SD	
<i>A. Politics</i>					
Liberal vote share 1946	610	0.539 (0.279)	104	0.737 (0.176)	0.198*** (0.000)
<i>B. Colonial institutions</i>					
Indigenous population	630	0.525 (0.500)	108	0.361 (0.483)	-0.164*** (0.001)
Spanish occupation	630	0.490 (0.500)	108	0.250 (0.435)	-0.240*** (0.000)
<i>C. Historical conflict</i>					
Land disputes	630	0.054 (0.226)	108	0.130 (0.337)	0.076** (0.027)
<i>D. Geographical characteristics</i>					
Altitude (mts over sea level)	630	1,435.879 (1,299.668)	108	1,190.176 (743.405)	-245.703*** (0.006)
Distance to main market (km)	630	103.488 (70.181)	108	83.627 (47.543)	-19.861*** (0.000)
Distance to Bogota (km)	630	298.265 (186.631)	108	230.718 (125.895)	-67.547*** (0.000)

Notes: *** is significant at the 1% level, ** at the 5% level and * at the 10% level.

4.2 Empirical strategy

The ideal experiment to estimate the effect of *La Violencia* on local fiscal capacity will be to compare the evolution of tax revenues in municipalities randomly assigned into conflict with that of a counterfactual group representing the path they will have followed in the absence of conflict. However, this is clearly not the case of *La Violencia*, where geographic variation in the presence of violence was not randomly assigned, and treated and control municipalities were systematically different.

An alternative approach can be to compute the difference in tax collection between treated

and control municipalities. However, this is also problematic because violent and non-violent municipalities differ on numerous variables related to the presence of *La Violencia* that also affect fiscal capacity (i.e., political affiliation, legal institutions, or corruption). For instance, if municipalities affected by conflict have more corruption and worst legal institutions, it can be that differences in tax collection are explained by these variables and not necessarily by the outbreak of conflict. Moreover, the bias can increase if lower fiscal capacity is the cause of conflict and not vice-versa. If this is the case, the difference not necessarily reflects the impact of war on tax collection but a preexisting lower fiscal capacity in violent municipalities. Also, chaos and disorder during *La Violencia* may be a source of measurement error on information reported during this period, also leading to an inaccurate estimate.

Following Angrist and Pischke (2008), I approximate the omitted variable bias with the difference in tax collection between violent and peaceful municipalities before *La Violencia*. This approach is convincing as long as the increase of fiscal capacity in non-violent municipalities is similar to what would have happened to violent municipalities in the absence of *La Violencia*. I show that both groups trended together in the absence of conflict, which gives credibility to this idea. Similarly, Angrist and Pischke (2008) argue that testing for parallel trends resembles a test for causality in the spirit of Granger (1969), as it allows to see whether causes happen before consequences and not vice versa. Therefore, the absence of systematic differences in tax collection before *La Violencia* provides evidence against the channel of reverse causality. Moreover, to cancel measurement error, I use the main dependent variables as a proportion of total revenues. For instance, assuming that there is a measurement error in the income from taxes, this should also be part of total revenue and using the ratio should cancel this potential source of bias.

However, even after controlling for the mentioned sources of endogeneity, bias can persist if the start of conflict in 1946 is also capturing changes in other variables that could have affected tax collection. To address this concern, I control directly for potential differential trends in tax collection explained by all the observable municipality characteristics presented in Table 1.

Hence, the empirical strategy reduces to a difference-in-differences setting that compares the change in the main sources of revenue, before and after the outbreak of conflict, in municipalities with and without violence. More formally, the main specification is given by:

$$y_{it} = \delta_1 (Post_t^{1946} * Violence_i) + \sum_{j \in T} \sum_{k=1}^K \beta_k (\gamma_j * x_i^k) + \gamma_i + \gamma_t + \varepsilon_{it} \quad (1)$$

Where y_{it} is the natural logarithm of taxes, transfers or non-tax income, for municipality i at time t . $Violence_i$ is an indicator equal to one if municipality i was affected by bipartisan violence during the period 1948-1953, x_i^1, \dots, x_i^K are a set of covariates, and γ_i and γ_t are a set of municipality and year fixed effects. Finally, ε_{it} is the error term which is clustered at the municipality level.

The coefficient of interest is δ_1 , which constitutes the difference-in-differences estimator of the average impact of *La Violencia* on revenues y_{it} in municipalities affected by conflict. The term $\sum_{j \in T} \sum_{k=1}^K \beta_k(\gamma_j * x_i^k)$ is included to control for differential trends in treated and control groups parametrized as functions of municipality characteristics. In particular, the inclusion of this element allows municipalities with characteristics that are presumably correlated to violence to behave differentially. Thus, if after allowing for such differential trends, the effects of violence persists, then it is unlikely that they are explained by differential trends based on the included municipality characteristics.

x_i^1, \dots, x_i^K include all the geographical characteristics, political variables, colonial institutions and historical conflict variables presented in Table 1. While geographical characteristics and colonial institutions are relevant to explain local state capacity (Faguet, Matajira, & Sánchez, 2017), historical conflict and political variables are included to capture conflict and local politics dynamics.

In equation (1), although the parameter of interest δ_1 reduces solely to the double difference and covariates explaining violence incidence are included in the model, the key identifying assumption to consider this effect as exogenous is that dependent variable trends would be the same in both types of municipalities in the absence of conflict (Angrist & Pischke, 2008). To test for the plausibility of this parallel trends assumption, I estimate the following equation:

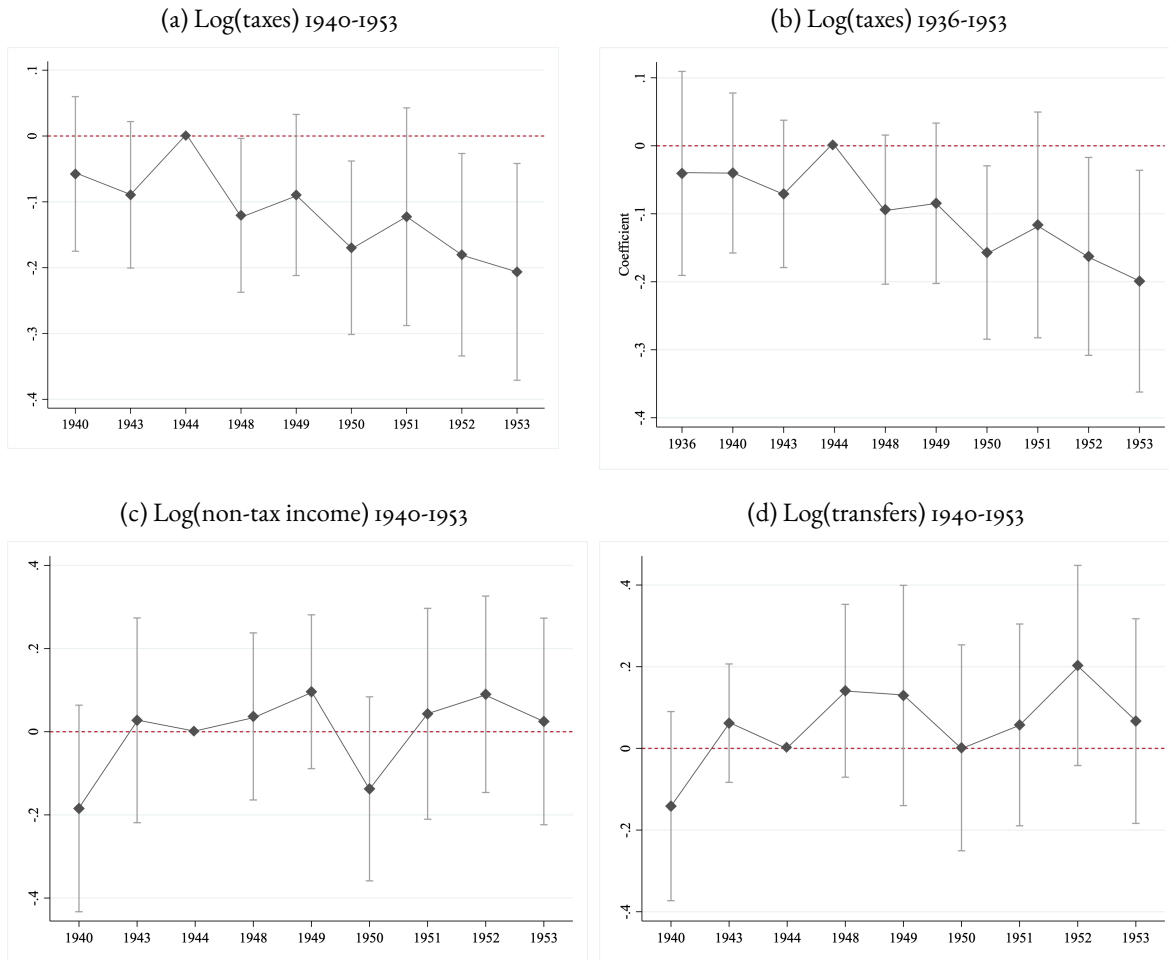
$$y_{it} = \sum_{j \in T} \delta_j(\gamma_j * Violence_i) + \sum_{j \in T} \sum_{k=1}^K \beta_k(\gamma_j * x_i^k) + \gamma_i + \gamma_t + \varepsilon_{it} \quad (2)$$

Where T includes all years of the sample but 1944, which is the year (with available information) right before the start of *La Violencia*.

If the trends of local tax collection before *La Violencia* are not different between violent and peaceful municipalities, the coefficients of the years leading to the breakout of violence should not be statistically significant, but the coefficients on the years after the reform should be.

Panels (a), (c) and (d) from Figure 5 show δ_j coefficients obtained from the estimation of equation (2) using total tax revenue, non-tax income and transfers as dependent variables, respectively. Additionally, panel (b) presents results using a subsample of municipalities with available information for 1936. In all cases, prior to 1944, coefficients are statistically equal to zero, indicating the absence of differential trends in all the main sources of local revenue before *La Violencia* and thus, giving credibility to the parallel trends assumption.

Figure 5: Parallel trends assumption test



Notes: Panels (a), (c) and (d) present coefficients δ_j from estimation of equation (2) using the logarithm of total taxes, non-tax income and transfers as main dependent variables, respectively. Panels (b) present the same estimates using a subsample of municipalities with available information for 1936. Controls include: liberal vote share in 1946, indigenous population, spanish occupation, land disputes, altitude, distance to main market and distance to Bogotá. 95% confidence intervals are depicted.

These figures also present a first approach to the main results. In particular, coefficients of tax revenue following the outbreak of conflict point to a negative and statistically significant effect of conflict on local fiscal capacity. In particular, a negative effect is evident in 1948, the first year with available information following the start of *La Violencia*. However, this downturn becomes particularly pronounced starting in 1950, coinciding with the start of Laureano Gómez presidency, considered the most radical leader of the Conservative Party. Conversely, there is no significant effect of violence on revenues from transfers and non-tax income.

For further evidence on parallel trends, I perform one additional exercise. Following Muralidharan and Prakash (2017), I interact a linear trend with the treatment variable and test for the significance

of this coefficient prior to *La Violencia*. Table 2 presents these results using taxes, non-tax income and transfers as dependent variables. As can be seen, I find no evidence for differential trends in these variables before *La Violencia*.

Table 2: Pre-*La Violencia* differential trends

	(1)	(2)	(3)
	Log(taxes)	Log(non-tax income)	Log(transfers)
Linear trend \times Violence	-0.004 (0.008)	-0.027 (0.020)	-0.027 (0.020)
Controls \times Year FE	✓	✓	✓
Municipality FE	✓	✓	✓
Year FE	✓	✓	✓
Observations	2,076	1,947	1,947
R-squared	0.046	0.028	0.028
Number of municipalities	714	705	705

Notes: Robust standard errors are clustered at the municipality level and presented in parenthesis. Controls include: liberal vote share in 1946, indigenous population, spanish occupation, land disputes, altitude, distance to main market and distance to Bogotá. *** is significant at the 1% level, ** at the 5% level and * at the 10% level.

5 Main results

Table 3 presents the main findings following the estimation of equation (1). Columns 1 and 2 show coefficients using the logarithm of taxes as the dependent variable, 3 and 4 using the logarithm of non-tax income, and 5 and 6 using the logarithm of transfers. While Columns 2, 4 and 6 show regressions with interactions of covariates with full-time dummies, 1, 3 and 5 omit this term. Standard errors clustered at the municipality level are presented in parenthesis.

Results using tax revenue as dependent variable show that municipalities affected by *La Violencia* experienced an average reduction of 10.3% in their fiscal capacity (Column 2). This effect is statistically significant and is robust to including controls. Conversely, the equivalent models using non-tax income and transfers reveal no-significant impact of conflict in these sources of revenues (Columns 4 and 6).

For further robustness, I perform three additional exercises. First, I would like to corroborate that the main findings are not driven by large changes in tax revenues specific to capital cities. To rule

out this possibility, I re-run the most demanding empirical specification excluding these main cities from the analysis. Second, another concern is that results are driven by the absence of information on tax revenues for some municipalities in specific years. To address this last issue, I perform an additional exercise on a balanced subsample. Furthermore, to control for measurement errors in historical data, I also use the main dependent variables as a proportion of total revenues.

Table 3: Main sample results

	(1)	(2)	(3)	(4)	(5)	(6)
	Log(taxes)		Log(non-tax)		Log(transfers)	
Violence \times Post 1946	-0.092*	-0.103**	0.103	0.081	0.001	0.128
	(0.049)	(0.052)	(0.080)	(0.089)	(0.077)	(0.086)
Controls \times Year FE	-	✓	-	✓	-	✓
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Observations	6,558	6,348	6,205	6,012	6,418	6,212
R-squared	0.176	0.207	0.018	0.037	0.052	0.119
Number of municipalities	738	714	738	714	738	714

Notes: Columns (1), (3) and (5) present estimation results of equation (1) using the logarithm of total taxes, non-tax income and transfers as main dependent variables, respectively, and without including controls. Columns (2), (4) and (6) present the same estimations including controls. Covariates include: liberal vote share in 1946, indigenous population, spanish occupation, land disputes, altitude, distance to main market and distance to Bogotá. Robust standard errors are clustered at the municipality level and presented in parenthesis. *** is significant at the 1% level, ** at the 5% level and * at the 10% level.

Results for the first two additional exercises are shown in panel (a) of Table 4. As can be seen, results are largely unchanged after running these two alternative specifications. In particular, coefficients excluding main cities and using the balanced subsample point to an average reduction of 9.3% and 9.9% in total tax revenue, respectively. Estimates for the alternative dependent variables continue showing no significant effects. Moreover, when using taxes as proportion of total income the effect remains negative and statistically significant, indicating an average fall of 2.8 percentage points in this variables in municipalities affected by conflict.

Finally, I also check whether the negative effect found for taxation is driven by a particular treated municipality. To test this, I run additional estimates for the main specification excluding one treated municipality at the time. Coefficients from these estimates also remain stable and statistically significant (Appendix A).

Table 4: Robustness exercises

(a) Subsample estimations						
	(1)	(2)	(3)	(4)	(5)	(6)
	Log(taxes)		Log(non-tributary)		Log(transfers)	
	Excluding main cities	Balanced panel	Excluding main cities	Balanced panel	Excluding main cities	Balanced panel
Violence × Post 1946	-0.093* (0.052)	-0.099* (0.053)	0.111 (0.089)	0.094 (0.092)	0.141 (0.086)	0.117 (0.089)
Controls × Year FE	✓	✓	✓	✓	✓	✓
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Observations	6,193	5,724	5,833	5,452	6,037	5,599
R-squared	0.203	0.222	0.038	0.040	0.124	0.111
Number of municipalities	694	636	694	636	694	636

(b) Dependent variables as proportion of total income			
	(1)	(2)	(3)
	Taxes/total income	Non-tributary/total income	Transfers/total income
Violence × Post 1946	-0.028** (0.014)	0.001 (0.009)	0.015 (0.012)
Controls × Year FE	✓	✓	✓
Municipality FE	✓	✓	✓
Year FE	✓	✓	✓
Observations	6,348	6,348	6,348
R-squared	0.158	0.052	0.190
Number of municipalities	714	714	714

Notes: Columns (1), (3) and (5) of panel (a) present estimation results of equation (1) using the logarithm of total taxes, non-tax income and transfers as main dependent variables, respectively, and excluding capital cities. Columns (2), (4) and (6) present the same estimations for a subsample balanced panel. Panel (b) present estimations using as dependent variables, taxes, non-tax income and transfers as a proportion of total revenues. Covariates include: liberal vote share in 1946, indigenous population, spanish occupation, land disputes, altitude, distance to main market and distance to Bogotá. Robust standard errors are clustered at the municipality level and presented in parenthesis. *** is significant at the 1% level, ** at the 5% level and * at the 10% level.

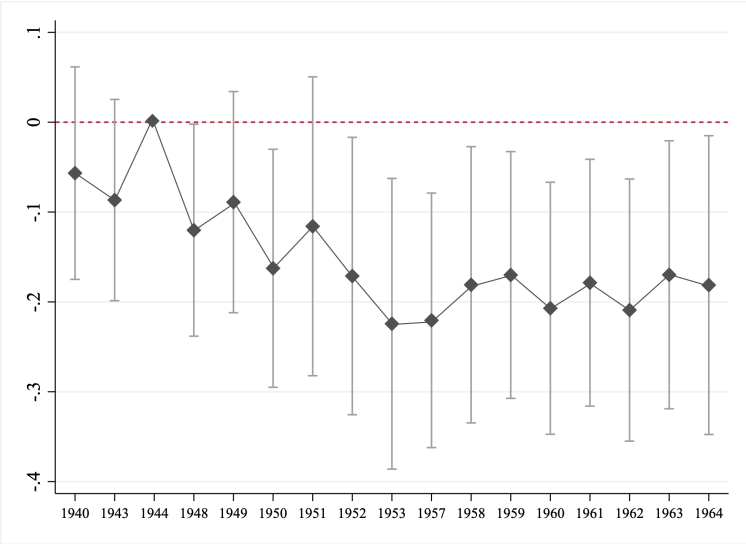
Altogether, these results reveal a negative and significant effect of conflict on tax revenues. Moreover, the absence of an impact of violence in non-tax income suggests that the mechanisms explaining the fall in taxation go beyond a fall in the tributary base. For instance, if it is true that a fall in economic activity and population is driving the main results, we should have also observed

a reduction in non-tax revenues, which include income from sales and rents of municipal public goods, and payments on local public services.

5.1 Long-run effects

To evaluate long-run effects, I extend the main sample, adding local tax revenue information from 1957 through 1964. Figure 6 shows the estimation of equation (2) using the logarithm of total tax revenue as dependent variable. An important pattern that emerges from this figure is that the negative effect of *La Violencia* in local fiscal capacity is still visible almost two decades after the outbreak conflict.

Figure 6: Evolution tax revenue (1940-1964)



Source: Figure 6 presents coefficients δ_j from estimation of equation (2) using the logarithm of total taxes as main dependent variable. Controls include: liberal vote share in 1946, indigenous population, spanish occupation, land disputes, altitude, distance to main market and distance to Bogotá. 95% confidence intervals are depicted.

To test the average effect for 1940 through 1964, I ran the main specification with the new extended sample. Panel (a) and panel (b) of Table 5 present estimates using the logarithm of taxes and the ratio of taxes to total revenue as dependent variables, respectively. In both cases, Column 1 refers to the main specification and columns 2 and 3 present additional robustness, excluding main cities and using a balanced panel, respectively. As can be seen, the negative effect found for the sample 1940 to 1953 remains significant and even increases in magnitude when adding information up to 1964. In particular, the average effect of violence on total tax revenue is now of -12.6%, and remains negative and significant in the alternative specifications.

Table 5: Long-run effects

(a) Dependent variable = log(taxes)				
	(1)	(2)	(3)	(4)
	Main specification	Excluding main cities	Balanced panel	Late Violence
Violence \times Post 1946	-0.126** (0.053)	-0.119** (0.053)	-0.124** (0.054)	-0.102* (0.053)
Controls \times Year FE	✓	✓	✓	✓
Municipality FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Late violence \times Post 1946	-	-	-	✓
Observations	11,723	11,400	10,573	11,723
R-squared	0.567	0.566	0.572	0.568
Number of municipalities	694	675	622	694
(b) Dependent variable = Taxes/Total income				
	(1)	(2)	(3)	(4)
	Main specification	Excluding main cities	Balanced panel	Late Violence
Violence \times Post 1946	-0.044** (0.022)	-0.047** (0.023)	-0.046* (0.023)	-0.036* (0.021)
Controls \times Year FE	✓	✓	✓	✓
Municipality FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Late violence \times Post 1946	-	-	-	✓
Observations	11,722	11,399	10,572	11,722
R-squared	0.027	0.027	0.025	0.027
Number of municipalities	694	675	622	694

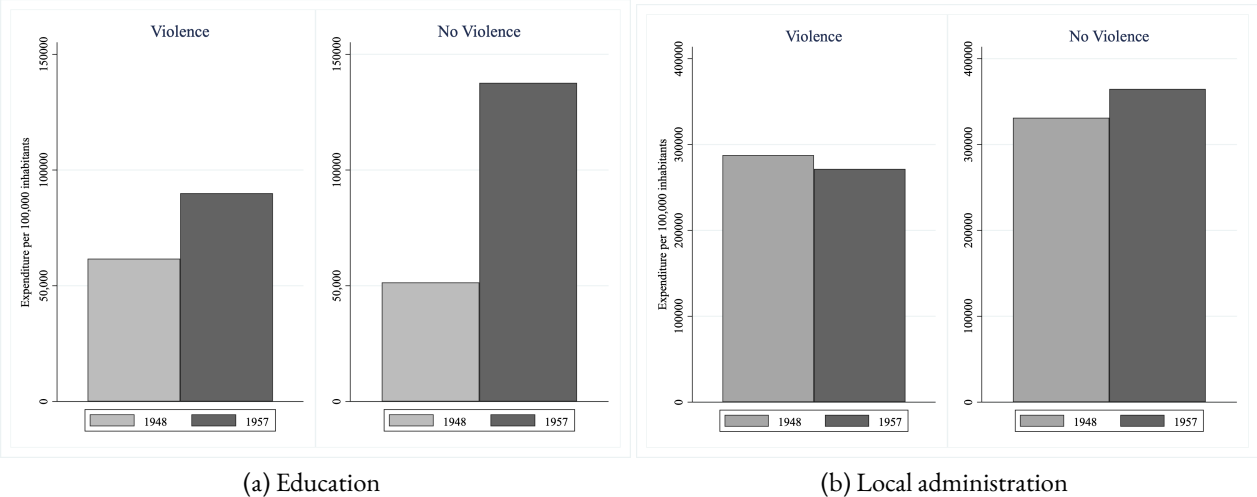
Notes: Columns (1), (2), (3) and (4) of panel (a) present estimation results of equation (1) using the complete long-run sample, excluding main cities, using a sub-sample balanced panel, and controlling for the persistence of violence, respectively. Panel (b) presents the same estimations using as dependent variables, taxes, non-tax income and transfers as a proportion of total revenues. Covariates include: liberal vote share in 1946, indigenous population, spanish occupation, land disputes, altitude, distance to main market and distance to Bogotá. Robust standard errors are clustered at the municipality level and presented in parenthesis. *** is significant at the 1% level, ** at the 5% level and * at the 10% level.

However, one reason not to focus on the previous estimates is that results may be driven by the persistence of conflict in violent municipalities rather than by the one-time extreme violent shock of *La Violencia*. In particular, to test whether long-run effects are explained by the persistence

of violence in treated municipalities, I run an additional specification including an interaction between the dummy variable indicating the start of *La Violencia* and a municipality dummy of the presence of violence between 1958 and 1963 (Column 4). Estimates remain negative and significant, suggesting that the effect found is not explained solely by the persistence of violence in these localities.

The size of these effects is economically meaningful. In fact, given the dependence at the time of sectors such as education and health on municipal own-source revenues, the extent of this fall could have compromised investments in these areas. To illustrate this idea, panels (a) and (b) of Figure 7 show the evolution of expenditures allocated to education and local administration in violent and non-violent municipalities of Tolima, one of the regions most affected by *La Violencia*. As can be seen, while education expenditures per 100,000 inhabitants in 1948 were higher in violent than in non-violent municipalities, the opposite relation is found in 1957. In this last year, education expenses in non-violent municipalities were nearly 50% higher than those of violent municipalities (Panel (a); Figure 7). A similar pattern is observed for expenditures on local administration, which includes expenses on governance and fiscal administration. In this case, while amounts increased in non-violent municipalities between 1948 and 1957, in violent municipalities they decreased (Panel (b); Figure 7).

Figure 7: Expenditures per 100,000 inhabitants in Tolima

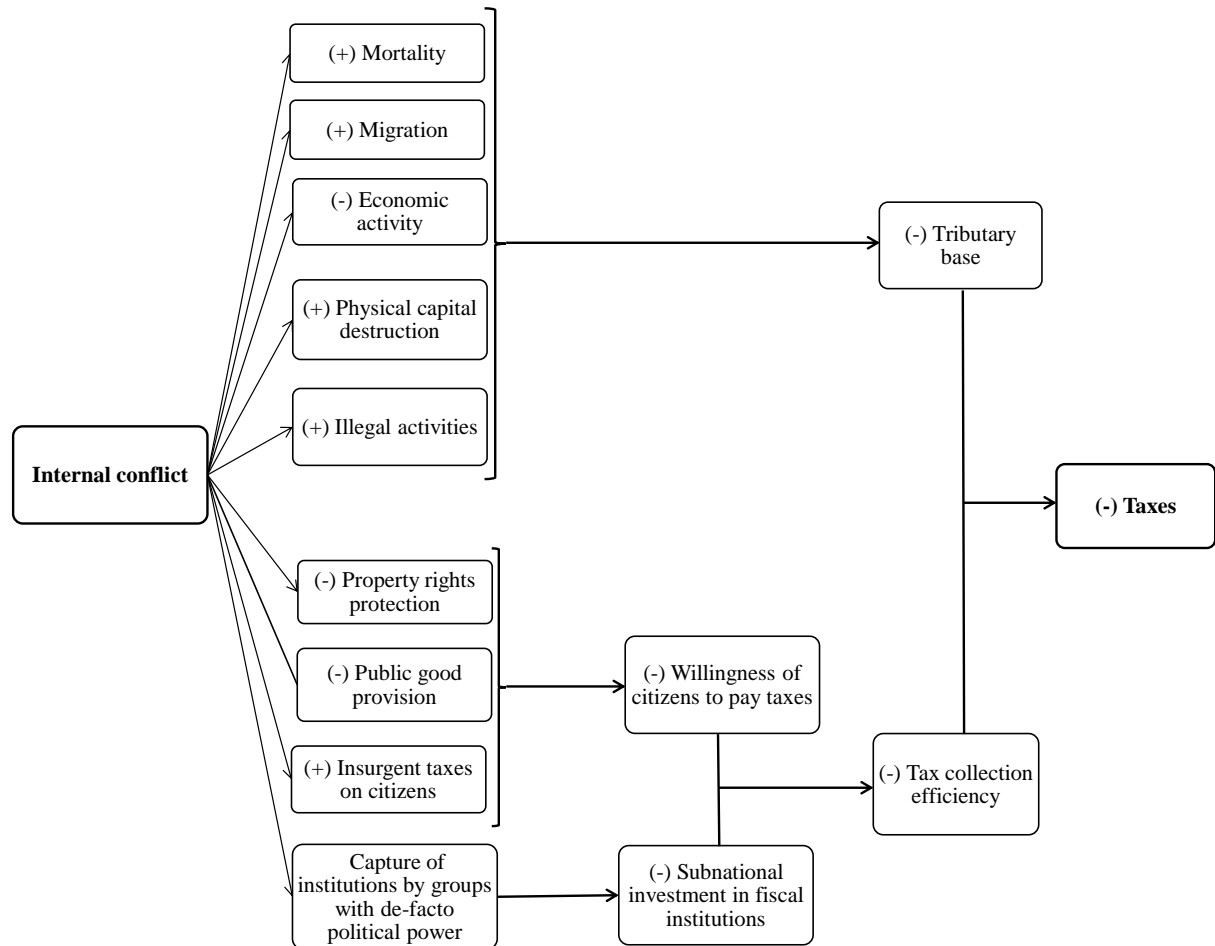


Source: Authors' calculations using *Revista de Criminalidad*; *Informes Financieros del Contralor*; *Estadísticas Fiscales DANE*. Notes: This graph shows the evolution of education and local administration expenditures per 100,000 inhabitants between 1948 and 1957, for treated (violence) and control (no violence) municipalities.

6 Mechanisms

So far, I have presented evidence of a negative effect of internal conflict on local tax collection. However, different potential mechanisms could explain this relationship. Following theoretical and empirical literature, Figure 8 summarizes some of these possible mechanisms.

Figure 8: Mechanisms



One alternative is that the impact estimated is coming from a tax base deterioration on violent municipalities. For instance, this could be due to the increased migration and mortality rates, physical capital destruction or the decline in economic activity in places affected by *La Violencia* (Guzmán et al., 1962; Oquist, 1980). Moreover, chaos associated with partisan struggles could have reduced the returns of productive activities and increased that of illegal businesses that do not pay taxes.

Alternatively, results could be driven by lower tax collection efficiency. As argued by Levi (1988) and Centeno (1997), the latter is an outcome of a relational act between government and

citizens that depends on both, the state's ability to enforce tax collection and the willingness of the population to accept these burdens. Besley and Persson (2008) shed light on these mechanisms through a theoretical model in which the probability of internal conflict reduces the incentives to invest in revenue-raising institutions. This last hypothesis, although not quantitatively proven for *La Violencia*, has been supported by historical works of this period (Guzmán et al., 1962), as well as by the literature of recent internal conflict in Colombia (Ch et al., 2018; Cardenas et al., 2016; Fergusson et al., 2019).

Regarding the adverse effects of conflict on citizens' willingness to pay taxes, Fergusson et al. (2019) and Cardenas et al. (2016) argue that inadequate public good provision and deficient property rights protection could be favoring this channel. In particular, and in the context of recent internal conflict in Colombia, Fergusson et al. (2019) find that people are more willing to evade taxes where there is more guerrilla activity and the state fails to provide public goods. Similarly, Cardenas et al. (2016) conclude that civilians are less willing to pay taxes when they feel their security and property rights are threatened. These authors find that tax collection is affected by events that undermine citizens' perception of the state's ability to protect them. In fact, newspapers in years following *La Violencia* revealed the low level of trust that citizens' had on local authorities. For instance, *El Tiempo* reported in June of 1958 that liberals in some areas preferred the authority of guerrilla rather than that of the police, which they considered hegemonic and threatening.⁵

Rodríguez-Franco (2016) acknowledges an additional mechanism in this same line, arguing that the rise in internal conflict can increase civilians' dependence on insurgents, who informally tax citizens as a cost for protection. Olsson, Baaz, and Martinsson (2020) empirically support this argument, showing that independent agents and armed groups maintain control of tax systems in the aftermath of conflict in the Democratic Republic of Congo. In fact, these dynamics are also illustrated in historical studies of *La Violencia*. Guzmán et al. (1962) describe as a common practice that of illegal groups charging *de facto* taxes on people, and even threatening them to death if they didn't comply. In general, the increase in revenues collected by insurgents could have also reduced people's willingness to comply with tax obligations.

Finally, lower tax collection efficiency can also be an outcome of lower investments in fiscal capacity by the government. Ch et al. (2018) study this mechanism, finding that Colombia's internal conflict enables groups with *de facto* power to build fiscal institutions consistent with their own preferences, obstructing greater tax collection efficiency. This includes, for example, impeding cadastre updates or discouraging fiscalization of available resources.

Unfortunately, due to the lack of historical information, I cannot test all the channels depicted in Figure 8. However, I can explore the extent to which the fall in tax collection is driven by a

⁵“Los liberales en algunos sectores prefieren la autoridad de los guerrilleros antes que la de la policía porque la juzgan de hegemónica y amenazadora.” Newspaper *El Tiempo* June 13, 1958.

fall in the tributary base. In fact, the latter approach can give suggestive evidence of the magnitude of the impact driven by lower tax collection efficiency. As mentioned before, initial evidence in this regard is the absence of an effect for non-tax income, which should have probably been affected if lower economic activity or population decline are behind the main results. In order to provide further evidence in favor of this channel, the next subsections empirically evaluate the extent to which population growth and economic activity dynamics explain the fall in taxation in violent municipalities.

6.1 Population

One of the more catastrophic consequences of *La Violencia* was the number of casualties and the high migration rates. Hence, the fall in income from taxes in municipalities affected by conflict could be explained by the lower number of people paying taxes in these areas. To illustrate, Figure 9 relates the percentage of people living in municipalities affected by *La Violencia* in each department with its corresponding population growth between 1938 and 1964. As expected, the graph reveals a negative association between these variables; while departments highly affected by *La Violencia* exhibit lower population growth (Tolima and Norte de Santander), the opposite occurs for regions with a lower incidence of conflict (Atlántico).

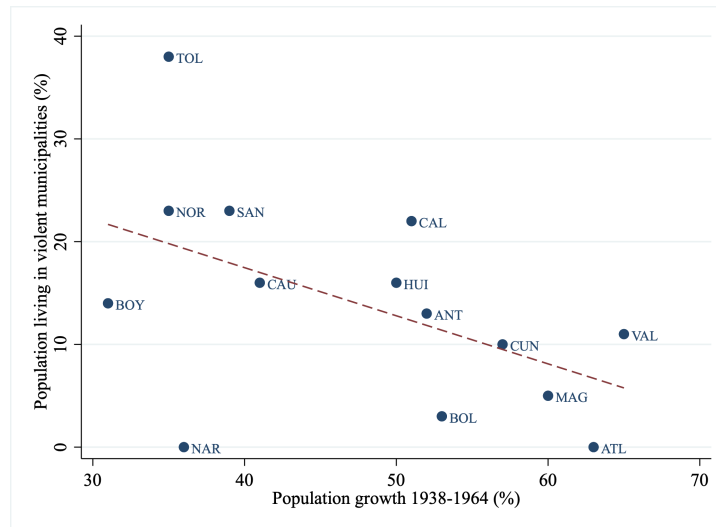
To formally test this hypothesis, I use population data at the municipality level available in the Colombian Census of 1938, 1951 and 1964.⁶ I re-estimate the main specification including population as a dependent variable and also as an additional control. Alternatively, I run the main regression using the logarithm of taxes per cápita as the dependent variable.

Table 6 presents the results of these additional specifications using population (Column 1), the logarithm of taxes (Columns 2 and 3), the ratio of taxes to total revenue (Columns 4 and 5), and the logarithm of taxes per cápita (Column 6) as dependent variables.

First, as it could be seen in Figure 9, *La Violencia* had a negative and significant effect on population. However, a comparison of the coefficient of interest in the specification including population as dependent variable versus the regression including population as a covariate, reveals that demographic changes explain only a reduced portion of the total fall in tax revenue during this period. In particular, when controlling for population, the negative effect of conflict on local tax revenue changes from -10.3% to -8.9%. Similarly, the effect of tax share in total revenue slightly modifies from -2.8 to -2.7 percentage points. Lastly, when using the logarithm of taxes per cápita, the effect indicates an average reduction of 8.5% in taxes per cápita in areas affected by conflict.

⁶Data of population at the municipality level is only available for years 1938, 1951 and 1964. In order to have a measure of population for all the years of the sample, I use a cubic spline interpolation to fill the gaps in this variable.

Figure 9: Population growth and violence



Source: Authors' calculations using *Revista de Criminalidad*; Population Census 1938 and 1964. Notes: This graph shows the relationship between the total population growth between years 1938 and 1964 and the percentage of population living in municipalities affected by *La Violencia* in each department.

Table 6: Mechanisms: Population

	(1)	(2)	(3)	(4)	(5)	(6)
	Population	Log(taxes)		Taxes/total revenue		Log(taxesPC)
Violence × Post 1946	-0.016*	-0.103**	-0.089*	-0.028**	-0.027*	-0.085*
	(0.009)	(0.052)	(0.052)	(0.014)	(0.014)	(0.048)
Population (100,000 inhabitants)			0.419**		0.001	
			(0.194)		(0.017)	
Controls × Year FE	✓	✓	✓	✓	✓	✓
Municipality FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Observations	6,271	6,348	6,271	6,348	6,271	6,271
R-squared	0.062	0.207	0.209	0.158	0.158	0.158
Number of municipalities	711	714	711	714	711	711

Notes: Columns (1), (2), (4) and (6) present estimation results of equation (1) using population measured in 100,000 inhabitants, the logarithm of total taxes, the proportion of taxes to total revenue and taxes per cápita as main dependent variables, respectively. Columns (3) and (5) include population as an additional control. Covariates include: liberal vote share in 1946, indigenous population, spanish occupation, land disputes, altitude, distance to main market and distance to Bogotá. Robust standard errors are clustered at the municipality level and presented in parenthesis. *** is significant at the 1% level, ** at the 5% level and * at the 10% level.

6.2 Economic activity

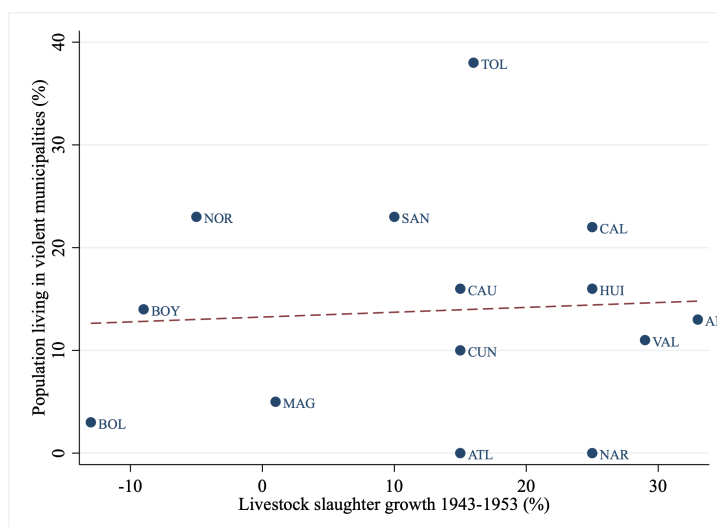
Another way to explore the mechanism of a tax base deterioration is to look at the effect of *La Violencia* in economic activity of places highly affected by conflict. According to Oquist (1980), coffee crops and livestock were the prime economic elements of regions with more severe violence. In fact, the dynamics of production and commercialization of these two products were largely affected by the partisan struggles.

Among other actions and following the intensification of violence in 1951, the Conservative-controlled army prohibited the sale of Liberal cattle and blocked their receipt of supplies. Hence, while Conservative cattle were free to move, Liberal cattle had to be proven to belong to government officials and if not, they were vetoed. This situation gave rise to the first cattle truces, in which Liberal cattle were bought by Conservative businessmen or by army officers at discount prices, and then sold as “Conservative” cattle. Similarly, coffee crops began to be commercialized in an armed fashion and were stolen several times on their way to market (Oquist, 1980).

To evaluate the extent by which an economic activity downturn affected the lower tax incomes perceived by violent municipalities, I use information of DANE publication, *Anuarios Generales de Estadística* for the years 1943, 1944, 1945, 1946, 1948, 1949 and 1953. This last source contains data on livestock slaughter at the municipality level for all the mentioned years. Using this information, Figure 10 relates the percentage of people living in violent municipalities in each department with the growth in livestock production. The association between these variables appears to be more positive than negative; in fact, departments highly affected by *La Violencia* like Tolima, maintain an important growth of livestock production during this period.

To formally test this hypothesis, I re-run the main specification including cattle production as a dependent variable and as an additional covariate. Table 7 presents the main results. Column 1 presents results using cattle production as dependent variable, Columns 2 and 4 present results for the main specification, while columns 3 and 5 include cattle production as an additional covariate. As can be seen, there is no significant effect of conflict on cattle production. Moreover, similar to the role of population, results suggest that an economic downturn only partially explains the effect of conflict on total tax revenues. In this case, the effect changes from -10.3% to -9.2%. In contrast, the effect on the ratio of taxes to total revenue increases when including cattle as control increases from -2.8 to -2.9 percentage points.

Figure 10: Livestock production and violence



Source: Authors' calculations using *Revista de Criminalidad; Anuarios de Estadística*. Notes: This graph shows the relationship between livestock slaughter growth between years 1938 and 1964 and the percentage of population living in municipalities affected by *La Violencia* in each department.

Table 7: Mechanisms: Economic activity

	(1)	(2)	(3)	(4)	(5)
	Cattle	Log(taxes)		Taxes/total revenue	
Violence × Post 1946	-0.001 (0.001)	-0.103** (0.052)	-0.092* (0.051)	-0.028** (0.014)	-0.029** (0.014)
Cattle (10,000 heads)			6.185*** (1.807)		0.215 (0.282)
Controls × Year FE	✓	✓	✓	✓	✓
Municipality FE	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓
Observations	3,497	6,348	3,497	6,348	3,497
R-squared	0.066	0.207	0.257	0.158	0.149
Number of municipalities	712	714	712	714	712

Notes: Columns (1), (2), (4) and (6) present estimation results of equation (1) using livestock production measured in 100,000 cattle heads, the logarithm of total taxes and the proportion of taxes to total revenue as dependent variables, respectively. Columns (3) and (5) include cattle as an additional control. Covariates include: liberal vote share in 1946, indigenous population, spanish occupation, land disputes, altitude, distance to main market and distance to Bogotá. Robust standard errors are clustered at the municipality level and presented in parenthesis. *** is significant at the 1% level, ** at the 5% level and * at the 10% level.

Although suggestive, these findings provide evidence in favor of an effect of violence on tax collection efficiency at the local level. In particular, and as previously mentioned, evidence for the recent internal conflict in Colombia and historical studies of *La Violencia* shed light on the presence of this mechanism through the lower trust of citizens on local government and the obstacles to investments in better fiscal institutions.

7 Conclusions

This paper studies the effect of internal conflict on local fiscal capacity using evidence from *La Violencia* in Colombia. Results show that internal conflict has negative long-term consequences in fiscal capacity. Specifically, municipalities affected by *La Violencia* experienced an average reduction of 10.3% in their tax revenue and a fall of 2.8 percentage points on their ratio of taxes to total revenue. In contrast, other sources of local revenue remain unchanged. Moreover, causal mediation analysis shows that the effect on tax collection is only partially driven by a fall in the tributary base.

The majority of quantitative analysis on the consequences of *La Violencia* in Colombia has so far focused on demographic changes such as mortality and migration. However, the findings of this paper suggest that the economic and social legacies of *La Violencia* go beyond these phenomena. Specifically, the findings of this paper reveal a significant negative impact on local fiscal capacity, from which municipalities failed to recover after more than a decade since the start of the conflict. In fact, given the importance of own revenues in the municipal treasury at the time, this effect could have led to severe consequences in the development of sectors that depended on these sources of revenues such as education, health and local administration. Similarly, the fall in fiscal capacity could have also affected the quality of public spending (Gadenne, 2017; Martínez, 2016).

Finally, this paper draws attention to the importance of promoting tax collection efficiency in post-conflict environments. In particular, weak fiscal institutions can persist and even reinforce in the aftermath of conflict due to the low trust of citizens' in the state and the prevailing capture of local institutions by insurgent groups. While the former promotes tax evasion, the latter obstructs greater investments in fiscal capacity. As argued by Fergusson, Molina, and Robinson (2020), state-building in this context will require breaking this vicious cycle either from the demand or the supply side. In other words, this means making people notice that by evading taxes they undermine the provision of public goods or, from the supply side, by preventing incumbents from shaping tax institutions according to their own preferences and benefits.

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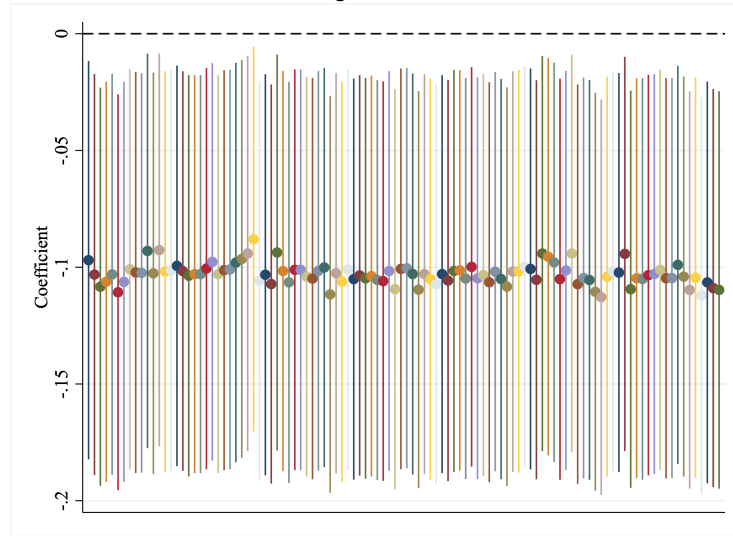
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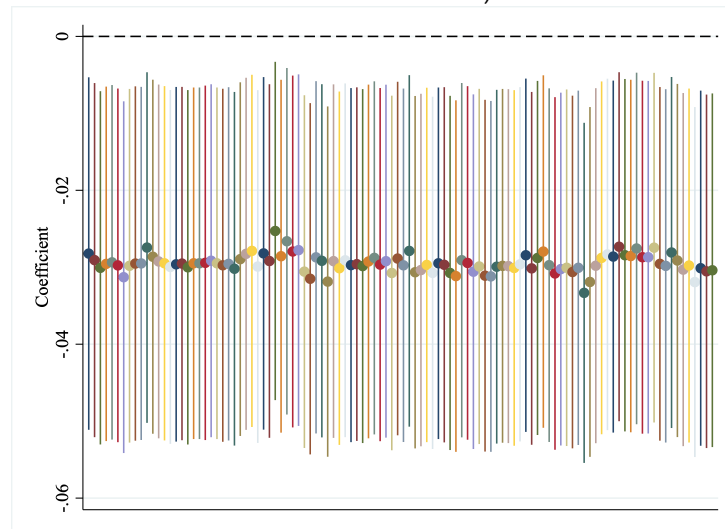
Appendix A

Figure A-1: Robustness to exclude one municipality with violence at a time (dependent variable= $\log(\text{taxes})$)



Notes: This figure presents coefficients δ_j from estimation of equation (2) dropping one of the municipalities affected by *La Violencia* at the time. Covariates include: liberal vote share in 1946, indigenous population, spanish occupation, land disputes, altitude, distance to main market and distance to Bogotá.

Figure A-2: Robustness to exclude one municipality with violence at a time (dependent variable= $\text{taxes}/\text{total revenue}$)



Notes: This figure presents coefficients δ_j from estimation of equation (2) dropping one of the municipalities affected by *La Violencia* at the time. Covariates include: liberal vote share in 1946, indigenous population, spanish occupation, land disputes, altitude, distance to main market and distance to Bogotá.