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RESEARCH ARTICLE

Shade-grown authoritarianism? Revisiting coffee as a curse in Latin America and the Caribbean

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ABSTRACT

Studies have shown that, in many cases, natural resources can act as a curse, hindering democratization. However, much of what we know about the resource curse is derived almost exclusively from petroleum. This article builds on a rich body of work and expands those findings by exploring whether coffee yields similar results. The field remains split: some suggest that coffee exports and production restrain democracy by strengthening authoritarian regimes, while others are skeptical or reject that proposition. We contribute to the debate by examining the relationship between coffee exports and democracy levels in 17 Latin American and Caribbean countries from 1962 to 2010. Our two-way fixed effects model, instrumental variable design, difference-in-difference estimations, and dynamic effects for staggered treatments reveal an insightful non-finding. Echoing the claims of coffee curse skeptics, coffee has not had a significant impact on democracy in the region.

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KEYWORDS Democracy; dictatorship; resource curse; coffee; Latin America; Caribbean

Introduction

In 1932, thousands of peasants staged an uprising in El Salvador. The revolt had its epicenter in the coffee-growing regions. Orchestrated by the *Partido Comunista Salvadoreño* (Communist Party of El Salvador), it sought the overthrow of the autocratic landowning elites that had ruled the country for decades during an era known as the *República Cafetalera*, or Coffee Republic. The regime responded by cracking down on the population. The result was a slaughter: 10,000–40,000 people died in a killing spree that lasted over a month. The event, known as *La Matanza* (The Massacre), was particularly brutal for the Pipil indigenous people. In the wake of *La Matanza*, El Salvador's coffee-growing elite delegated government control to the military. The military, in turn, ruled with an iron fist until a new insurgent wave broke out. When the dust settled, the civil war (1979–1992) had claimed the lives of 75,000 people.[1]

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This article has been corrected with minor changes. These changes do not impact the academic content of the article.

The tragic events in El Salvador are one side of the story concerning coffee, political regimes, and violence in Latin America. In nearby coffee-rich Costa Rica, a disputed presidential election was the last straw amid spiralling tensions between the government and dissidents, triggering a civil war in 1948. After forty days of fighting, the rebels led by José Figueres won. During the next eighteen months, a de facto government presided over by *Don Pepe* drafted a new constitution that served as the foundation of Costa Rica's famed democracy. Coffee elites and their influence over the government were pivotal to understanding the conflict. In contrast to El Salvador, coffee elites – represented by *Don Pepe* and the *Liberacionistas* – played a pivotal role in ushering in a new era of democracy.[2]

The gap in the political trajectories of coffee-rich countries, such as El Salvador and Costa Rica, has long divided scholars.[3] Some view coffee production as a driving force behind dictatorships[4] and violence,[5] while others are more skeptical[6] or reject this premise.[7] This article seeks to contribute to the debate by situating coffee exports within the natural resource curse literature and providing an exploratory analysis of the link between coffee and democracy levels in Latin America and the Caribbean.

The next section discusses the theory, formulates the study's hypotheses, justifies our case selection, and outlines the theoretical contribution. Then, in the third section, we summarize our research design. The fourth section presents the results of the statistical analyses. The fifth and final section presents the primary findings and provides guidelines for future research.

Theory

Scholars have discussed the natural resource curse for decades. In this article, we follow Ross' definition of the curse as "the adverse effects of a country's natural resource wealth on its economic, social, or political well-being."[8] As Ross outlines, most empirical findings surrounding the natural resource curse centre on a single commodity: petroleum. The evidence indicates a strong relationship between petroleum and "less democracy and worse institutions."[9] While, as we discuss below, scholars have disputed this link,[10] several studies show how oil exports, dependence, and revenues have contributed to strengthening autocracies – sometimes playing a role in reversals to full dictatorships.

Much of the debate on the natural resource curse, particularly that focusing on oil, has highlighted the rentier effect as a causal mechanism. Ross defines the rentier effect as "the government use of their oil returns to relieve social pressures that might otherwise lead to demands for greater accountability."[11] Indeed, access to rents derived from natural resources, such as petroleum, enables autocratic rulers to reduce the tax burden on citizens and dodge accountability. Studies have also documented how autocrats utilize those resource rents to consolidate their power by bolstering the security apparatus and patronage networks.[12] Scholars have noted that those mechanisms expand to rents beyond natural resources.[13] It is not a stretch to argue that a similar dynamic can occur with other commodities, including coffee. After all, coffee was essential in the building of state institutions and the funding of regimes.[14] In his examination of the political economy of Central American nations, Bulmer-Thomas elaborates on this symbiotic relationship, "the establishment and development of the coffee trade could not have been possible without strong state support (…) at the same time, a rising level of trade could generate the increase in government revenue."[15]

However, the rentier effect is one of many ways scholars have probed the existence of a resource curse. Smith and Waldner summarize this point by indicating that "the political resource curse has been defined and measured in diverse ways, not all of which are mutually consistent with each other."[16] In some instances, scholars focus on rents derived from resources.[17] But even those studies recognize the need to test alternative measurements. In addition to rentierism, Gurses uses oil export dependency and fuel exports.[18] Gurses expands on this by examining commodity exports as a share of GDP and of total exports.[19] Haber and Menaldo primarily focus on fiscal reliance on resource revenues but also rely on total oil income per capita, viewing it as a "theoretically second-best metric."[20] In fact, a large body of work explores measurements beyond fiscal revenues, including export values as fractions of GDP or incomes per capita.[21] Murshed outlines five primary ways through which scholars have measured the resource curse, including the proportionate contribution of the resource to national income, exports in GDP, resource abundance in stocks, ratios of total stocks, and resource rents.[22] In other words, *there is no single way to test for the existence of a resource curse*. Each metric has its strengths and weaknesses.

Notwithstanding petroleum's evident dominance in the natural resource curse debate, scholars have examined other commodities to gain a more comprehensive understanding of their effects. Studies have examined potential curses associated with non-fuel minerals[23] and commodity prices.[24] Yet, it is essential to note that scholars have not always situated agricultural commodities within the broader debate on the natural resource curse. Ross notes, "agricultural products are rarely seen as part of the curse – both because they are produced, not extracted (and hence fail to meet standard definitions of natural resources), and because they are seldom correlated with unfavorable outcomes."[25]

Still, there is a case in point for situating agricultural commodities *within* the resource curse. Coffee stands out as one of the most traded commodities worldwide. The similarities between coffee and mineral commodities are such that coffee has been branded as "black gold."[26] Still, it is worth noting that the petroleum industry has properties that distinguish it considerably from the coffee industry. First, petroleum tends to be more monopolistic. State-owned companies have been common in countries such as Saudi Arabia and Iran. One could make a similar claim about monopolies in Latin America, although regulatory frameworks have changed over time. Coffee, in turn, has historically varied in its production and supply, ranging in Latin America from small landowners in Costa Rica and Colombia to Brazil's large-scale *Fazendas*. Second, the petroleum industry is considerably more profitable than the coffee industry. According to MIT's Observatory of Economic Complexity, in 2022, the global coffee trade was worth US$ 45.4 billion (equivalent to 0.19% of total world trade). That same year, the crude petroleum trade was worth US$ 1.45 trillion (leading world trade at 6.1%).

Yet, despite the inherent differences between the two industries, coffee is the non-fuel commodity that scholars have most closely linked to a resource curse. Bates elaborates on their comparable traits, "coffee stands next to oil as the most valuable commodity exported from the tropics." In what follows, we provide an overview of the literature debating the existence of a coffee curse in Latin America and the Caribbean.[27]

Two views of coffee as a curse

The literature suggests two relationships, at odds with each other, between coffee and political regimes in Latin America and the Caribbean. The first links coffee production and exports to authoritarianism and violence – two of the most prevalent symptoms of the natural resource curse.[28] This view stems from the premise that to be profitable, coffee often requires large-scale production. That drove an emergent class of coffee elites to amass land ownership and exploit workers. Guatemala's vagrancy laws, which forced poor peasants to work on large coffee estates, would be an example of this extractive policy.[29] Bulmer-Thomas, who focuses on the political economy of Central America, discusses how the region's export-oriented economies – where coffee played a fundamental role – led to the rise of *caudillos* or military strongmen.[30] Coffee-growing elites also ramped up state-building by investing in a coercive state apparatus that enforced the supply of cheap labour.[31]

Before proceeding, however, it is necessary to pause for a historical note. Europeans introduced the coffee bean to the region in the late seventeenth and early eighteenth century.[32] Extractive institutions were the norm under colonial rule *before* coffee began to grow in the Americas. Scholars have linked coffee production to sugarcane plantations, which relied on African slave labour. Wild argues that in the Caribbean, "When coffee arrived in the eighteenth century, it became quickly established, not only because of the fertile soil of the islands but also because the plantation economy, and the slave infrastructure, was already in place."[33] Hence, situating the introduction of coffee within a pre-existing extractive institutional framework is crucial. If anything, coffee production and exports reinforced, rather than caused, the autocratic and repressive regimes found throughout the region.

Nonetheless, scholars agree that the introduction of coffee forever changed the socio-political landscape of the Americas. This outcome was perhaps most evident in Central America, where studies have shown that coffee contributed to state-building.[34] Williams distinguishes pre-coffee state institutions from those that flourished after coffee's arrival.[35] The author also notes how the emerging coffee-dependent states created "effective instruments of coercion,"[36] allowing autocratic elites to strengthen their grip on power. The economic power harvested by coffee elites inevitably expanded to the political arena. As shown by Williams, many presidents in Guatemala, El Salvador, Nicaragua, and Costa Rica were coffee owners or exporters in the nineteenth and twentieth centuries, an era marked by power struggles and authoritarianism.[37] Brazil's "coffee presidents"[38] also provide a useful example.

Scholars have also extended these trends to South America. Isham et al. provide one of the most exhaustive studies examining the political ramifications of exporting agricultural commodities. In their view, dependence on crop-based economies explains development differences separating North American (e.g. the United States) from South American nations.[39] Isham et al. argue that, in South America, "crops such as sugar, coffee, and cocoa were grown on large plantations, cultivable land was relatively scarce, decolonization occurred late, and property rights were weak. Landed elites were able to amass great personal fortunes, resist more democratic reforms, and consolidate power."[40] Similarly, Pendergrast discusses how coffee became a curse for most Latin American countries where it grew, "In Latin America [coffee] created vast wealth next to dire poverty, leading the repressive military dictatorships, revolts, and bloodbaths."[41]

Studies have also demonstrated a link between coffee and violence. Latin America's coffee-producing countries experienced some of the highest violence levels during the twentieth century. El Salvador's *La Matanza* (1932) took place in the country's coffee-growing regions. Decades later, the country would suffer a decade-long civil war. Neighbouring coffee-producing countries, such as Nicaragua and Guatemala, suffered similar fates. Dube and Vargas examine Colombia's prolonged armed conflict and find that "a sharp *drop* in the price of coffee during the 1990s increased violence disproportionately in municipalities cultivating more coffee (…) Taken together, these results are consistent with an account in which the coffee shock increased violence by lowering the opportunity cost of joining armed activity."[42]

There is, however, a different take on the subject. This second interpretation is more skeptical or rejects the assumption that coffee has acted as a curse. Wood provides one of the most renowned explanations of insurgent transitions to democracy, drawing many of her observations from El Salvador.[43] She stressed that coffee was not to blame for the dictatorships and violence that wreaked havoc in the country. Instead, that responsibility fell upon the ruling coalition that grouped economic elites and the military, "Nothing about the economy's dependence on coffee made this configuration of classes and labor-repressive institutions inevitable; coffee flourishes under a variety of class structures."[44] Echoing canonical work on the subject,[45] this research branch brings class composition and alliances to the forefront of the analysis.[46] Paige argues that agrarian elites tend to be more authoritarian, regardless of the agricultural commodity exported.[47] In many Latin American countries, that commodity *happened* to be coffee, which created a "coffee elite." But elites change. For instance, in Central America's coffee-rich countries, a dominant agrarian (coffee) elite witnessed the rise of an agro-industrial faction. Although linked by family networks, political differences existed between the two. Paige states, "The agrarian fraction has been a bulwark of authoritarian politics throughout the region. The agro-industrial fraction is less closely tied to the authoritarian order and, under some circumstances, more open to democratic initiatives."[48] Following the civil wars and economic crises of the 1980s, the agro-industrial factions gained the upper hand and agreed to transition to democracy,[49] a point also noted by Wood.[50] More recently, scholars have revived the idea that coffee alone does not fully account for the divergent paths of nations. In their comparison of the coffee-producing countries of Guatemala and Costa Rica, Acemoglu and Robinson argue that, more than coffee, what really mattered was the "balance between states and society" that ultimately led to extractive outcomes in Guatemala, and a "functioning democracy" in Costa Rica.[51]

Scholars often highlight one powerful counterfactual: Costa Rica. Stanley argues, "were it not for the presence of Costa Rica among the coffee producers, one might conclude that coffee was the economic foundation of repression."[52] Even Pendergrast who stressed the harmful consequences of coffee production in Latin America, views Costa Rica as the "singular hopeful exception to this rule."[53] For centuries, Costa Rica has been growing and harvesting coffee. Coffee wealth, however, did not prevent democracy from flourishing in the country. After a civil war in 1948, the country transitioned to democracy, a status it has retained ever since.[54] Some scholars view egalitarian conditions in coffee production as the foundation for the country's democracy. In Costa Rica, small producers cultivated the bulk of the coffee, giving them a distinct status.

Stanley summarizes this shift, "much of the coffee production was in the hands of smaller producers (…) and permitted the development of a more broadly based political system that became increasingly democratic during the twentieth century."[55]

Hence, scholars remain divided in their views of coffee as a curse in Latin America and the Caribbean. One branch links coffee to detrimental outcomes.[56] A Brazilian farmer perhaps best summarized the coffee curse by stating in the 1930s that "coffee is our national misfortune."[57] However, a second branch is more skeptical of this relationship[58] or even rejects it.[59]

Indeed, our preliminary descriptive evidence reveals that a puzzle exists. Figure 1 presents four plots. The two plots on the left illustrate the relationship between the percentage of Latin American and Caribbean countries labelled as democratic by Miller et al., the mean percentage of coffee in total exports,[60] and the mean log of coffee exports per capita.[61] In turn, the two plots on the right display the mean score of the liberal democracy index.[62] As Figure 1 reveals, in 1962, most of the Latin American and Caribbean countries examined here were democratic (nearly 60% of all sampled countries).[63] The quality of liberal democracy, however, was poor – as measured by the liberal democracy index.[64] The political and economic headwinds of the 1960s and 1970s led to the breakdown of democracy regionwide. In fact, democracy reached its lowest levels from 1975 to 1977. Only a handful of the countries examined in this study, like Colombia, Costa Rica, and Jamaica, remained democratic. In the 1980s, the third wave of democracy expanded throughout the region. Still, civil wars and dictatorships raged on, particularly in the coffee-dependent countries of El Salvador, Guatemala, and Nicaragua. In the mid-1980s and early 1990s, countries transitioned to democracy *en masse*, and democratization peaked in

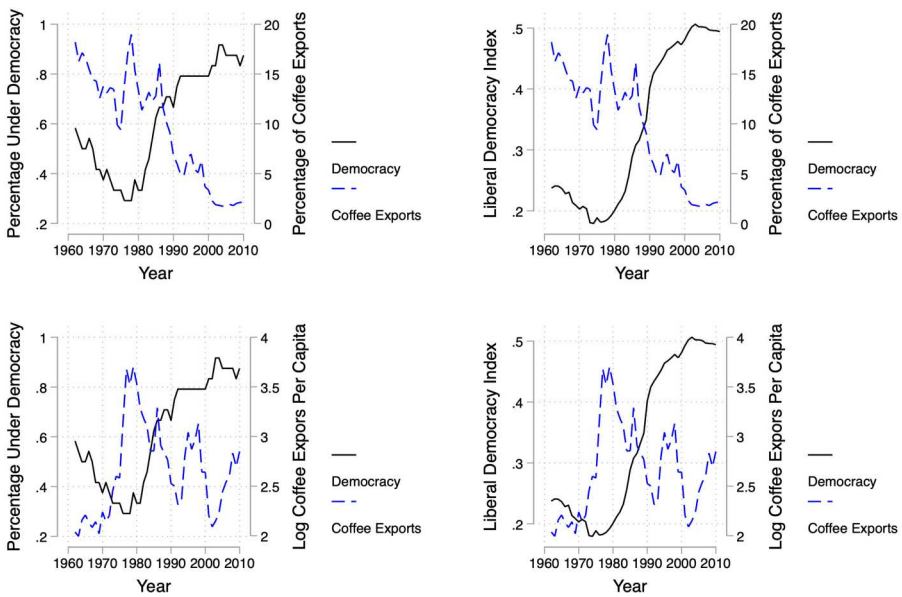


Figure 1. Average democracy levels and coffee exports in 17 Latin American and Caribbean countries, 1962–2010. Source: Authors, based Miller et al., "Boix-Miller-Rosato (BMR)"; Simoes and Hidalgo, "The Economic", and V-DEM, "Liberal Democracy Index".

2005 and 2006. Yet, backsliding in countries like Nicaragua later led to a dip in democracy levels.[65]

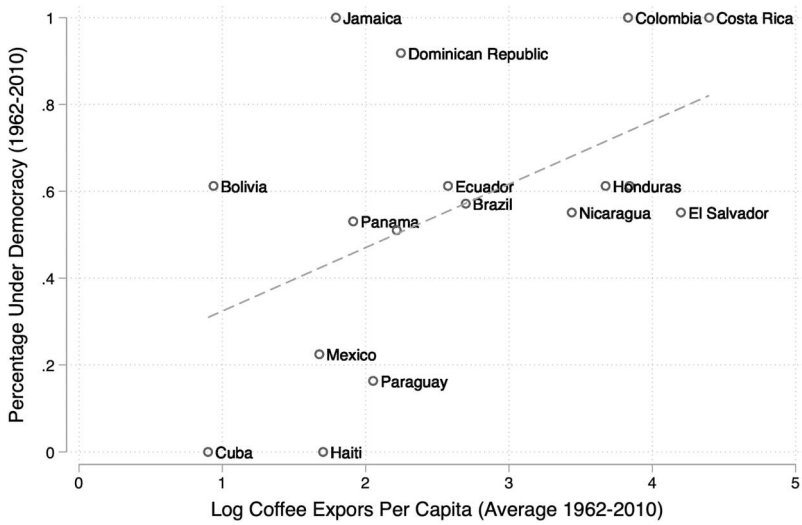
Coffee exports reveal another insightful story. In the early 1960s, coffee exports were at one of their highest levels, reaching close to a mean 18% of total exports in the 17 Latin American and Caribbean countries covered here. Those levels, however, gradually dropped until the mid-1970s. Whereas there was an uptick from 1975 until 1977, coffee exports declined again until the early 1980s. Coffee exports experienced a second surge in 1986, surpassing a mean of 15% of total exports in the selected countries. Yet, following that uptick, coffee exports decreased (except for two exceptions in the 1990s), reaching their lowest point during the period covered, which spanned the late 1990s and throughout the 2000s, and remained below an average of 5% of total exports.

Data on log coffee exports per capita provides additional clues. In the early 1960s, despite a surge in exports, log coffee exports per capita were at one of their lowest levels. Yet, the 1970s marked a new chapter: log coffee exports increased, reaching their highest points by the end of the 1970s. As with total exports, this drastic uptick occurred parallel to democratic breakdowns. The relationship between the two variables changed once more in the 1980s. Log coffee exports per capita declined despite an uptick in 1985. That drop unfolded as countries joined the third wave. In the 1990s, log coffee exports per capita experienced an uptick. Nonetheless, this trend was short-lived and declined again in the early 2000s, reaching its lowest point, coinciding with a surge in democratic levels. Starting in 2002, log coffee exports have risen once again (see Appendix, Figures A2 and A3 for trends of both variables by country).

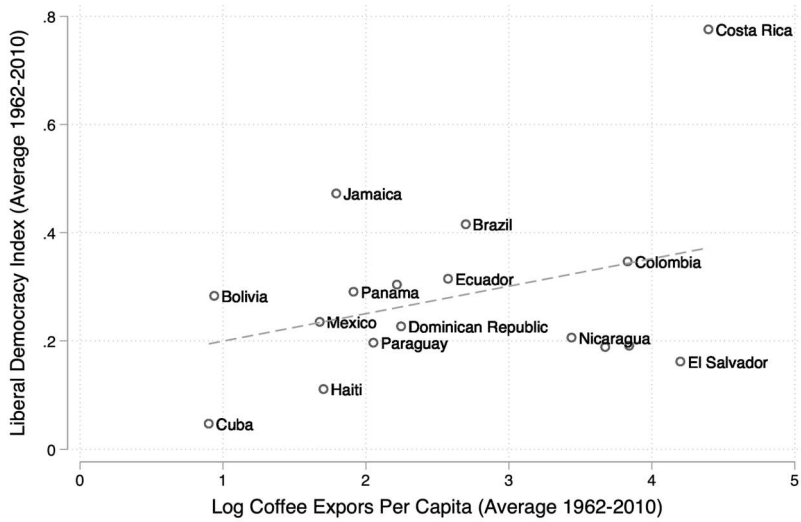
The top panel of Figure 2 plots a correlation between democracy, measured as the percentage of time a country has been democratic in years, and the log of coffee exports per capita from 1962 to 2010. The relationship is positive. Countries with comparatively higher dependence on coffee seem to have spent more time as democracies during the period examined. Figure 2 shows that this is particularly true in Costa Rica and Colombia. We report that relationship even in El Salvador, Guatemala, Honduras, and Nicaragua, home to dictatorships during much of the twentieth century. Still, those countries transitioned to democracy in the 1980s and 1990s and remained democratic despite not having the best-quality democracies.

The bottom panel of Figure 2 plots the correlation between V-DEM's liberal democracy index average per country and log coffee exports per capita from 1962 to 2010. Although mildly positive, the trend is evidently not as strong as reported for the years countries have been democratic. Costa Rica has had high democracy levels during the period covered, notwithstanding having one of the region's highest coffee exports per capita. Yet, the pattern that emerges from Figure 2 is that coffee-dependent countries, such as El Salvador, Guatemala, Honduras, and Nicaragua, tend to have comparatively lower levels of democracy.

In short, the descriptive evidence provides mixed results. On the one hand, Figure 1 suggests that, to some extent, democracy levels are somewhat inversely related to coffee exports. On the other hand, the top panel of Figure 2 suggests a positive correlation between the percentage of countries labelled as democratic and log coffee exports per capita. However, as shown in the bottom panel of Figure 2, the relationship becomes weaker and largely scattered. Correlations using alternative coffee measurements point in the same direction, as shown in the Appendix (see Figure A4).



(a) Percent under democracy



(b) Liberal democracy index

Figure 2. Cross-country correlation between democracy levels and coffee exports in 17 Latin American and Caribbean countries, 1962–2010. (a) Per cent under democracy, (b) Liberal democracy index. Panel (a): $R^2 = 0.26$. Slope = 0.14. Panel (b): $R^2 = 0.11$. Slope = 0.05. Source: Authors, based Miller et al., "Boix-Miller-Rosato (BMR)"; Simoes and Hidalgo, "The Economic", and V-DEM, "Liberal Democracy Index".

Mechanism and hypotheses

This article presents a comprehensive cross-country exploratory analysis to answer the following research question: Has coffee, measured in terms of exports and production, impacted democracy levels in Latin America and the Caribbean? We build on a rich

body of scholarly work to elaborate on the potential coffee curse mechanism. In their studies on coffee-producing Central American countries, Paige[66] and Wood[67] explain how agrarian coffee-growing elites have historically resisted democratization. This premise extends more broadly to other Latin American and Caribbean nations. Coffee-growing elites stalled democracy in two ways, mirroring what scholars have revealed about the natural resource curse. First, using the rents from coffee production and exports, elites heavily shaped nation-state building by crafting institutions to their liking. Those institutions, including a repressive security apparatus, were mandated to protect elite interests, particularly against labour movements.[68] Indeed, scholars have discussed the reinforcing relationship between coffee growth and the military.[69] Mahoney summarizes this symbiotic relationship, "Just as the smooth operation of the coffee economy was dependent on the military, this institution was, in turn, dependent on profits from the coffee economy."[70] Second, coffee elites used their immense political influence to block political reform, including democratization.[71] It was only *after* the coffee-growing elite suffered splits within their ranks,[72] transitioned into agro-industrial factions that focused on other economic activities,[73] or were forcefully overthrown in times of crisis[74] that countries experienced regime shifts.

We formulate our study's hypothesis by sketching a historical analogy. Scholars have traced the introduction of coffee to the Americas at the hands of European colonizers as part of the Columbian Exchange.[75] One version claims that Gabriel de Clieu, an eighteenth-century French sailor, recognized the potential of coffee plants and stole one from King Louis XIV's *Jardin des Plantes*. According to this version, Clieu's trans-Atlantic voyage to the Caribbean experienced significant setbacks. The crew's provisions, including water, became scarce. At one point, Clieu decided to split his water ration with the coffee plant he had stolen, hoping it would survive the trip. The decision paid off. Clieu and his coffee plant made landfall and lived on in coffee history. Our exploratory study builds on the theory and draws on Clieu's experience to formulate the hypothesis, as follows:

> H1: Just like Clieu's life was at odds with the survival of his plant, we hypothesize that coffee exports and production have been at odds with the survival of democracy in Latin America and the Caribbean.

Case selection and contribution

Although coffee grows in many countries, particularly within the area surrounding the equator known as the *coffee belt*, our study focuses exclusively on Latin American and Caribbean countries for three primary reasons. The first reason stems from a methodological concern. One of the most crucial lessons from the resource curse literature is that its impact varies considerably by region. Smith and Waldner argue that there is "substantial regional heterogeneity across the developing world since the early 1980s."[76] We believe it is plausible that other resources, including crop-based exports such as coffee, could behave similarly, as underscored by comparative evidence.[77] The second point concerns historical features. With notable exceptions in the Caribbean, most Latin American countries gained independence and sovereignty in the nineteenth century. Export-oriented economies were the norm,[78] and in many instances, crop-based commodities, such as coffee, fuelled the supply side driven by foreign demand. In turn, the export-oriented model overlapped with the

process of state-building, especially in coffee-producing countries[79] which impacted political regime dynamics. Most coffee-producing countries in Sub-Saharan Africa and Southeast Asia gained independence in the second half of the twentieth century and, on average, followed distinct political and economic trajectories. The third reason concerns the variance in democracy levels worldwide. On average, democracy levels in Latin America and the Caribbean have been comparatively higher than in other developing settings. The greater variance in democracy levels found in Latin America and the Caribbean compared to other coffee belt regions, enables us to better understand how coffee wealth impacts democratization.

Hence, focusing exclusively on Latin American and Caribbean countries allows us to mitigate the inter-regional heterogeneity challenges scholars have encountered in examining the resource curse.[80] At the same time, the fact that coffee has often been central to the economies and state-building, and that democracy levels have been higher in the region, further justifies our case selection. While we acknowledge that centering exclusively on Latin America and the Caribbean may limit our observations, we compensate for this by enhancing the quality of our findings.

In turn, exploring the relationship between coffee dependence and democracy in Latin America and the Caribbean enriches the literature on four key fronts. The first reason directly addresses the debate on the natural resource curse. There is a theoretical gap regarding the impact of agricultural commodities within the resource curse literature. Some scholars have been hesitant to view agricultural commodities as part of the curse.[81] However, other studies have linked agricultural commodities to negative outcomes.[82] Since there is little middle ground between the two groups, this article advances a key branch of the resource curse literature.

Second, scholars remain divided over the effects stemming from coffee. One group links coffee to authoritarianism and violence.[83] Yet another group is skeptical or rejects this premise.[84] Much of the literature discussing the relationship between coffee and political regimes offers descriptive evidence.[85] Simultaneously, existing studies provide rich, in-depth, qualitative[86] or quantitative[87] takes, but often focus on a single case or a handful of cases. In turn, large comparisons are scarce. Even those who examine coffee production in numerous countries over time tend to combine coffee production with other crops, such as cocoa.[88] This article utilizes multiple indicators from 17 Latin American and Caribbean countries spanning 48 years to investigate the existence of a coffee curse, offering one of the most comprehensive examinations to date.

Third, a substantial portion of the empirical literature views natural resources as having no effect on democratization.[89] While some scholars argue that oil hinders democracy[90] others challenge this premise by suggesting a positive link between oil wealth and democratization,[91] a relationship that some have even dubbed a resource blessing.[92] This article contributes to the debate by offering additional insights, placing an agricultural resource – coffee – at the centre of the analysis.

Fourth, our study contributes to the understanding of the factors influencing political regimes and transitions in Latin America and the Caribbean, a region characterized by its dependence on commodities and exports. Although previous research has provided valuable insights into democratization in Latin America and the Caribbean,[93] there has been a lack of focus on the role of commodity dependence in shaping political regimes – at least beyond the exceptional studies that focus on specific cases.[94] This article takes a step in that direction.

Research design

This article employs four empirical strategies to test whether coffee impacts democracy in Latin America and the Caribbean: a two-way fixed effects (TWFE) model, an instrumental variable (IV) design, a difference-in-difference (DID) estimation, and a staggered difference-in-difference (DID) model. Democracy is our dependent variable. Our primary models include four measurements. We first use the lexical index plus,[95] which consists of a scale classifying political regimes from zero (0) for non-elected autocracies to seven (7) for polyarchies. Second, we rely on the Polity dataset,[96] which includes a scale ranging from negative ten (−10) to ten (10) for countries that are full dictatorships and full democracies. Third, we utilize the liberal democracy index[97] an interval ranging from zero (0) to one (1) for low and high democracy levels. Fourth, the Miller et al. (BMR)[98] democracy measurement classifies political regimes dichotomously, where one (1) equals democracy and zero (0) non-democracies. We also use the BMR[99] classification to measure the age of democracy in years (see Appendix, Table A1).

We focus on coffee exports and production as a proxy for a country's dependence on the agricultural commodity. More specifically, we aim to test whether coffee, as measured by exports and production, has impacted democratization in the region. First, we rely on the Observatory of Economic Complexity (OEC).[100] The OEC has data on the imports and exports of countries using the Standard International Trade Classification (SITC) dating back to 1962. While we acknowledge that this limitation implies missing out on historical trends predating 1962, it is still relevant to examine the available data for three reasons. First, the data cover an era marked by different political regimes and transitions between those regimes, facilitating greater variance in our dependent variable. Latin American and Caribbean countries scored some of their lowest and highest democracy levels during the time covered.[101] Hence, notwithstanding limitations, the data allows for studying an era of profound shifts in democracy levels.[102] Second, as we show below, our data also covers an era in which coffee exports and prices varied considerably – from high points in the 1960s and 1970s to their decline in the 2000s. Those shifts, in turn, enable us to have a more detailed understanding of how coffee impacted democracy levels in the region. Third, studies on the oil variant of the resource curse have faced similar data constraints. In fact, landmark studies have relied on data dating back to the 1960s and 1970s.[103] Nonetheless, they have provided findings that are indisputably rich and insightful.

For a potential curse to exist, coffee exports must represent an important share of the economy. Hence, we decided to include only those countries with a percentage of coffee exports higher than 1% in our analytical sample, based on the average between 1962 and 2010 (see Appendix, Figure A1). The countries included in our sample are Bolivia, Brazil, Colombia, Costa Rica, Cuba, the Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, and Peru. In turn, we excluded Argentina, Chile, Guyana, Suriname, Trinidad and Tobago, Uruguay, and Venezuela. In other words, we have 833 country-year observations for Latin American and Caribbean nations spanning the period from 1962 to 2010. The robustness checks replicate the models with the full sample of 24 countries to avoid problems arising from selection bias. Those results confirm our findings. We selected the yearly dollar values of coffee exports from 1962 to 2010 for 17 Latin American and Caribbean countries. Using this indicator, we followed

Ross[104] in focusing on exports on a per capita basis. Thus, we selected the yearly dollar amount of coffee exports and divided it by the country's total population using data from the World Bank. We then transformed the variable using a logarithmic scale: $\log(1 + (\textit{coffee exports pp}))$.[105] We rely on the OEC data to use an additional metric focusing on coffee as a percentage of yearly total exports per country. For example, if the indicator for Costa Rica in 1970 is 30, it means that coffee accounted for 30 per cent of the country's total exports that year. Second, we employ the Montevideo-Oxford Latin American Economic History Database MOxLAD[106] to determine the price of coffee exports over time, which we use as an instrument in some specifications.

Two-way fixed effects

We first examine the relationship between coffee and democracy using a two-way fixed effects (TWFE) model. These models regress democracy on the log coffee exports per capita in US dollars and the percentage of coffee exports. Forty-eight years of data allow us to include five treatment leads and lags. The coefficient of a lead variable represents the effect of the log coffee exports per capita in year t on democracy in year $t - 1$. The inclusion of the treatment leads is equivalent to testing for parallel trends since we observe the gap between the treatment and control – or the treatment effect – *before* the treatment.[107] In turn, the lagged treatment variable corresponds to the effect of the log coffee exports per capita in year $t1$ on democracy in year $t + 1$, which could be positive if there is an effect. The treatment lags also allow us to determine whether there is an immediate effect (for example, a year after the treatment) or if the effect manifests later. We summarize the TWFE regression as follows:

$$Dem_{ct} = \alpha + \sum_{i=-5}^{5} \beta_i \left(\log(\textit{coffee pp}_i)\right)_{ct} + \gamma_c + \lambda_{rt} + \theta(cov)_{ct} + \varepsilon \qquad (1)$$

Where a democracy indicator in country c in year y is regressed on five treatment leads and lags of the log coffee exports per capita. The coefficient γ accounts for country fixed effects, λ are region*year fixed effects – the regions are Central America and the Caribbean ($N = 11$) and South America ($N = 6$) – and θ represent a vector of pre-treatment covariates, including a log of population, average GDP per capita, log of total exports per capita, and share of the urban population. The main advantage of this model is that it controls for country heterogeneity and common time trends and tests for five years of pre-trends. Admittedly, there is a risk of endogeneity if a third variable affects democracy and coffee exports.

Instrumental variable design

We use an instrumental variable (IV) design as part of our second analytical strategy. In this regard, we instrument coffee exports with the international price of coffee. The first stage of this model is as follows:

$$\log(\textit{coffee pp})_{cy} = \alpha + \beta(Price)_{y-1} + \delta_c + \theta(cov)_{cy-1} + \varepsilon \qquad (2)$$

Where $\log(\textit{coffee pp})$ is regressed on the international price of coffee in year y, country

fixed effects, and a vector of covariates. The second stage is as follows:

$$Dem_{ct} = \alpha + \log(\widehat{coffee\ pp})_{ct-1} + \delta_c + \theta(cov)_{ct-1} + \varepsilon \quad (3)$$

We regress democracy on the predicted value of coffee exports obtained from the first stage. We followed the same logic as in the TWFE models. Hence, we included leads and lag terms in the regression model to observe plausible pre-trends and lagged effects. Our research strategy meets the valid first-stage assumptions to conduct an IV design. We report a high correlation between international coffee prices and the log of coffee exports per capita,[108] implying that countries increase coffee exports in response to higher prices.[109]

The exclusion restriction merits an extended explanation, as it is not empirically testable. In this case, the exclusion restriction assumes that international coffee prices affect democracy exclusively through their effect on coffee exports. A plausible violation of this assumption would be, for example, if international coffee prices impact democracy because they alter the exports of another commodity, which in turn affects democracy. We cannot deny that international coffee prices may be correlated with the prices of other commodities. However, for a violation to exist, it must be that the variation of international coffee prices causes changes in other exports. To minimize this risk, all the IV models include country-fixed effects and adjust for potential within-country changes in the production of other commodities that coffee prices potentially impact. We also use the international coffee price in 1900 as an instrument. If contemporary international coffee prices influence the exports of other commodities, it is less likely that coffee prices from 1900 would have the same effect. Still, we recognize the limitations of our IV models, which is why we use additional empirical strategies.

Difference-in-difference estimation

As a third empirical strategy, we exploit the shock in coffee exports in the 1970s. From 1974 to 1975, there was an average increase of US$14 in the percentage of coffee exports, breaking a stable trend that carried on from the 1960s. We utilize this sudden shift to estimate a difference-in – difference (DID) model, comparing countries affected by the shock with those that were not. We defined a treated country as one above the median in the percentage of coffee exports per capita, whereas control countries are those that fall below. Then, we interacted the treatment variable with the year dummies to compute the DID estimates. This model does not include country-fixed effects since the treatment is permanent – or collinear with the country. The regression equation is as follows:

$$Dem_{ct} = \alpha + \delta(50th)_c + \sum_{t=70}^{86} \beta_t(t)_t + \sum_{t=70}^{86} \beta_t(t)_t * (50th)_m + \gamma_r + \varepsilon \quad (4)$$

Where $(50th)_c$ indicates whether country c is above the median in percentage of coffee exports. The term $\sum_{t=70}^{86} \beta_t(t)_t$ indicates the years covered in the estimation: we included six years for pre-trends and ten years for post-treatment. The interaction term between the two terms computes the DID estimator.

We use the median as the treatment variable to quantify the shock as a discrete and irreversible event. If the shock between 1974 and 1975 affected democracy, then it would not matter if coffee exports normalized the following year. What matters is knowing whether the event impacted democracy, as it altered coffee exports. Hence, the interpretation of these coefficients differs slightly because the reference category is always year zero (or 1976). The models present treatment leads in all figures to support the parallel trends assumption. Regarding anticipation effects, it is unlikely that countries would have changed their democratic institutions in response to an anticipated change in coffee exports.

Dynamic effects for staggered treatments

We estimate dynamic effects using the staggered treatment approach.[110] This model defines the treatment in a way that prevents countries from switching status, meaning that the treatment is *permanent*. The model differs from the more conventional difference-in-difference approaches since we do not fix the treatment to a specific period. Instead, a country is defined as treated when it surpasses a given threshold of coffee production. We define the treatment as those countries that, starting in 1962, were above the 50th percentile in coffee production. We specify the regression equation in relative time,[111] which can be summarized as follows:

$$Dem_{ct} = \alpha + \sum_{t=-3}^{7} \beta(50th)_{cy} + \gamma_c + \lambda_{rt} + \varepsilon \tag{5}$$

Alternative measures

The robustness checks rely on two alternative measurements. First, using data from the Food and Agriculture Organization,[112] we estimate a second TWFE model using yearly coffee-bean production in tons per 1,000 inhabitants by country. This metric looks at coffee dependence beyond exports, as it also includes production for domestic consumption. Indeed, this measure captures the raw production volume, a proxy of how important the agricultural commodity is for a country's economy. Hence, we regress coffee bean production in tons per 1,000 inhabitants by country on the four measures of democracy that form part of the primary models. Second, we turn to an alternative measurement of the price of coffee to conduct another IV design. We employed the data by Jacks,[113] processed by Our World in Data, who measured coffee prices relative to real prices in 1900 (in other words, prices in 1900 are equal to 100). We used this as a baseline to more adequately control for fluctuations in the international price of coffee.[114] At the same time, to avoid concerns of selection bias, we run additional TWFE models and IV designs using the entire sample of 24 Latin American countries, including non-coffee exporting nations. The results, shown in Appendix C, reaffirm our findings.

Before discussing the results, we emphasize that our study focuses on the relationship between coffee and democracy levels in Latin American and Caribbean countries, specifically covering the period from 1962 to 2010. The results, in turn, should be read keeping this point in mind. As we discuss below, we do not seek

to make claims about the years preceding those for which we have data, the relationship between coffee (or other agricultural commodities) and democracy elsewhere, or whether coffee has other resource curse symptoms (e.g. violence) in the region. Neither does our work invalidate the rich findings of scholars who embedded their study of coffee economies in a larger theoretical framework about class coalitions.

Findings

We now examine the results of our primary statistical models, starting with the TWFE model. Figure 3 illustrates the impact of coffee dependence, measured as the log of coffee exports per capita, on four democracy indicators. These models include country-fixed effects, indicating that the source of the variation is within countries over time. The empirical evidence points in the same direction: coffee dependence has a null effect on democracy. Although the models reveal the lack of pre-trends, we find no significant effects in the years following the treatment (see Appendix, Figure A5 for the results using the percentage of coffee exports, which also reveals a null result). We include models with one lagged outcome in the Appendix, Figures A6 and A7, confirming the null results. Likewise, in the Appendix, Figures A8, A9, A10, and A11 show the coefficients separated for the Southern Cone and the Caribbean, finding null results in both cases.

In turn, most IV coefficients are consistent with a null finding. Figure 4 shows the IV coefficients five years before and after the treatment. We included the coefficients before the treatment ($t - 1$, $t - 2 \ldots$) to probe whether pre-trends in the

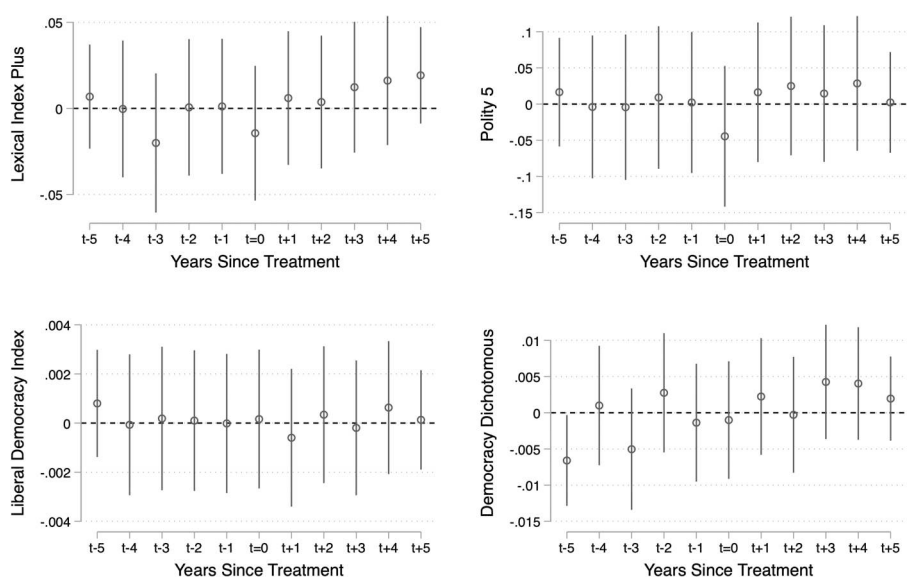


Figure 3. TWFE coefficients. Five-year leads and lags. *Treatment:* Log of coffee exports per capita. Note: 95% confidence intervals. Years: 1962–2010. Source: Authors, based on Miller et al. "Boix-Miller-Rosato (BMR)"; Simoes and Hidalgo, "The Economic"; Skaaning et al., "Political Regime"; Polity, "Democracy", and V-DEM, "Liberal Democracy Index".

data may bias the results. The results indicate a pre-trend, meaning that countries relying on coffee exports had lower baseline levels of democracy. The existence of a pre-trend, however, does not invalidate our results. After all, coffee exports could potentially worsen democracy levels. Yet, we do not observe that in the models. Instead, the coefficients trend upward in the post-treatment years. Hence, we find no evidence suggesting that coffee exports have a detrimental effect on democracy levels. If anything, at least in the IV models, we find evidence suggesting the contrary, that is, a positive effect. For instance, in the top right panel of Figure 4, comparing the coefficient five years before the treatment with the coefficient five years after treatment reveals a difference of approximately two units in the Polity 5 index.

The third set of results corresponds to the event study of the 1976 increase in coffee prices (Figure 5). The coefficient represents the estimated impact of that specific shock on the four democracy indicators in the subsequent years, up to 1985. We included five years of pre-trends. Once more, we observe a null effect, as the coffee price shock did not affect democracy levels.

Results from our staggered difference-in-differences model, displayed in Figure 6, which uses relative time as the treatment variable, indicate no significant effect of the 50th percentile of coffee exports on democracy levels. Perhaps more revealingly, none of the coefficients in the post-treatment period shows a significant deviation from the pre-trend – thus confirming a null finding.

In summary, we tackled the existence of a coffee curse in Latin America and the Caribbean using a strategy consisting of TWFE models, IV design, and DID estimations (including a staggered model). The empirical results point in the same

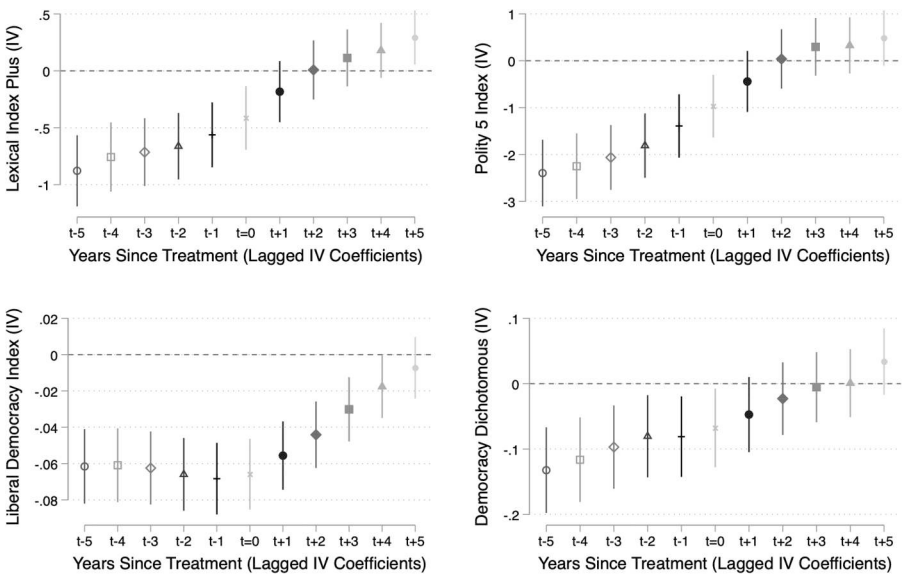


Figure 4. Instrumental variable coefficients. *Treatment*: Log of coffee exports per capita. *Instrument:* International coffee price.

Note: 95% confidence intervals. Years: 1962–2010. Source: Authors, based on Miller et al. "Boix-Miller-Rosato (BMR)"; Simoes and Hidalgo, "The Economic"; Skaaning et al., "Political Regime"; Polity, "Democracy", and V-DEM, "Liberal Democracy Index".

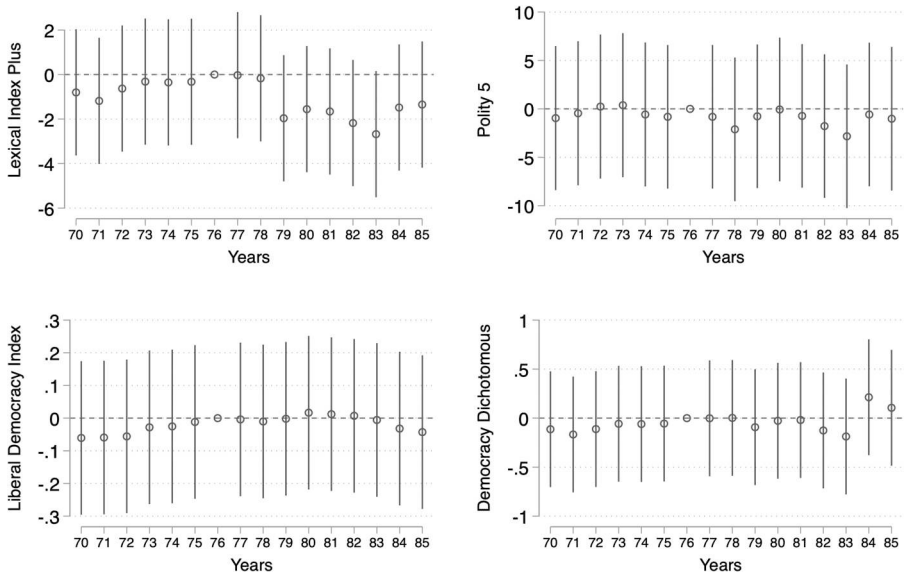


Figure 5. Event study. Difference-in-difference estimates using the 1976 shock.

Note: 95% confidence intervals. Years: 1962–2010. Source: Authors, based on Miller et al. "Boix-Miller-Rosato (BMR)"; Simoes and Hidalgo, "The Economic"; Skaaning et al., "Political Regime"; Polity, "Democracy", and V-DEM, "Liberal Democracy Index".

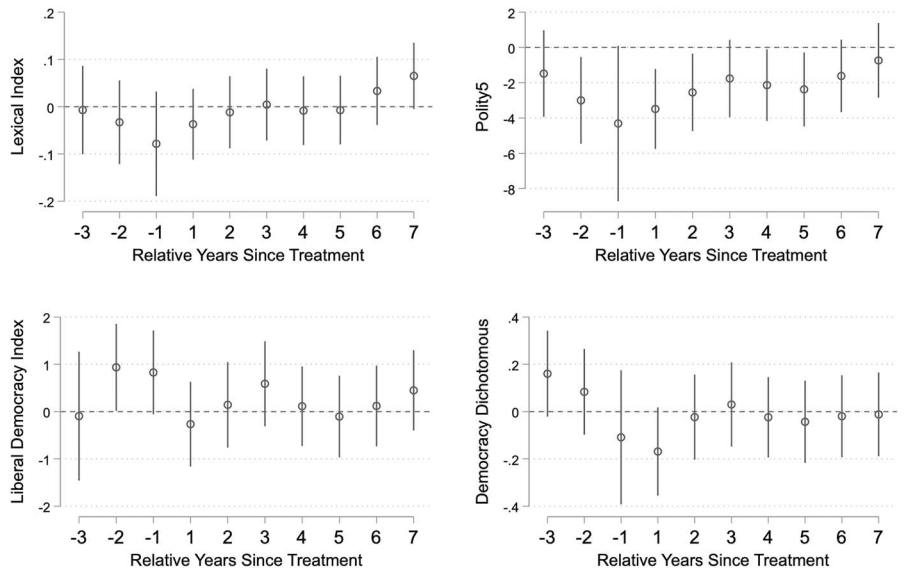


Figure 6. Staggered difference-in-difference estimates.

Note: 95% confidence intervals. Years: 1962–2010. Source: Authors, based on Miller et al. "Boix-Miller-Rosato (BMR)"; Simoes and Hidalgo, "The Economic"; Skaaning et al., "Political Regime"; Polity, "Democracy", and V-DEM, "Liberal Democracy Index".

direction: coffee dependence, measured in the log of exports per capita and coffee exports as a percentage of total exports, does not hinder democracy. Rather, the evidence reveals no statistically significant effect.

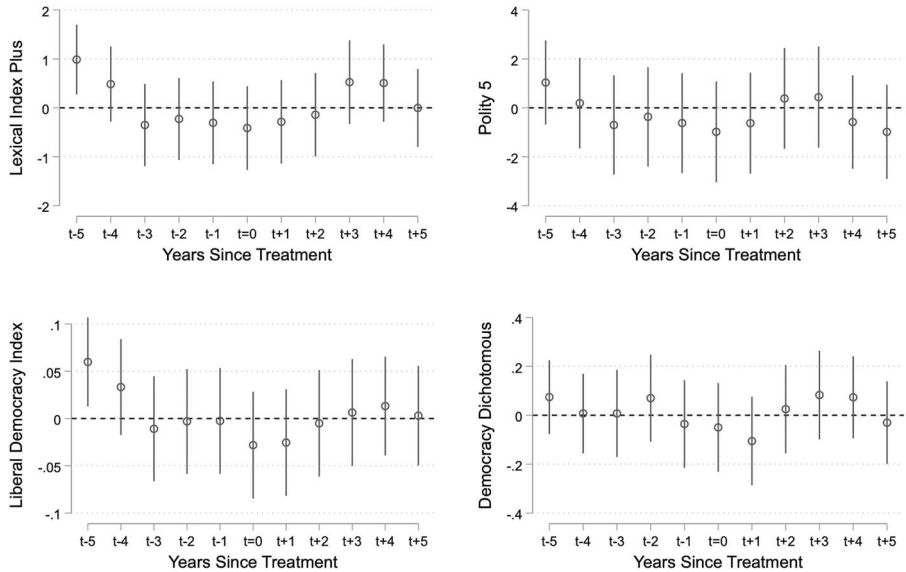


Figure 7. TWFE coefficients. Five-year leads and lags. *Treatment:* Tons of coffee exports per 1000 inhabitants.

Note: 95% confidence intervals. Years: 1962–2010. Source: Authors, based on Miller et al. "Boix-Miller-Rosato (BMR)"; Simoes and Hidalgo, "The Economic"; Skaaning et al., "Political Regime"; Polity, "Democracy", and V-DEM, "Liberal Democracy Index".

Robustness checks

Figure 7 shows the results for the additional TWFE models. The results confirm what we reported before: coffee bean production does not significantly affect the four democracy measurements used in this study. Indeed, compared to the primary models (see Figure 3), the statistical output is strikingly similar. In turn, Figure 8 presents the IV design coefficients using log coffee exports per capita as the treatment and 1900 coffee price as the instrument. Once more, the results essentially echo the output we reported in Figure 4, indicating that log coffee exports have no significant effect on democracy levels.

A final round of robustness checks includes tests replicating the TWFE models and IV design using our entire sample. These tests, shown in Appendix C, expand the number of Latin American and Caribbean countries from 17 to 24, dropping the minimum threshold of having exported a mean of 1% of coffee between 1962 and 2010, which we used as a specification in our primary models. Hence, these tests include coffee-exporting countries and countries that did not significantly export coffee during that period. The results confirm what we reported in the primary models – confirming that coffee exports did not impact democracy levels in the region.

The additional tests, which used alternative measurements– coffee bean production in tons, based on the 1900 coffee price as a baseline, and including countries that did not significantly export coffee– reaffirm our initial findings. We find no evidence of a coffee curse affecting democracy levels in Latin American and Caribbean countries during the period covered in this study.

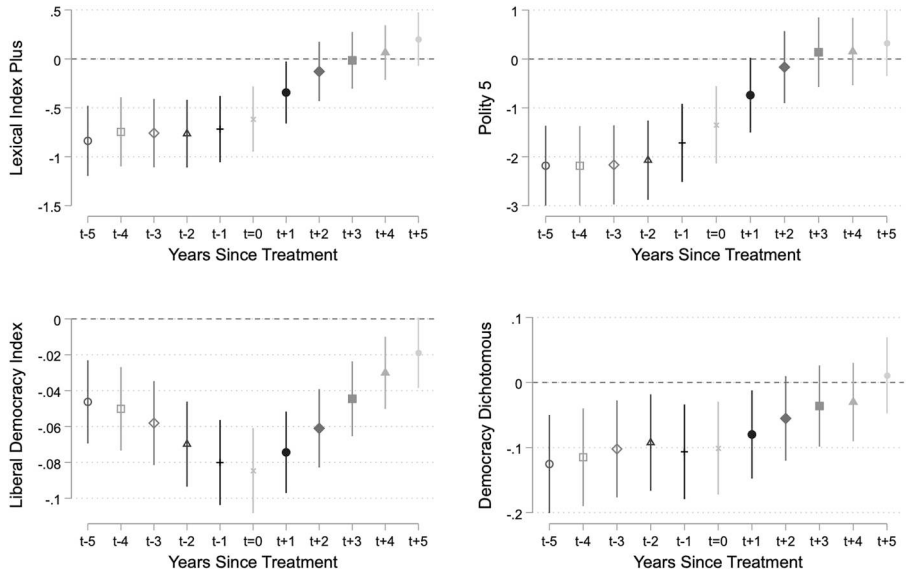


Figure 8. Instrumental variable coefficients. *Treatment:* Log of coffee exports per capita. *Instrument:* Coffee price in 1900.

Note: 95% confidence intervals. Years: 1962–2010. Source: Authors, based on Miller et al. "Boix-Miller-Rosato (BMR)"; Simoes and Hidalgo, "The Economic"; Skaaning et al., "Political Regime"; Polity, "Democracy", and V-DEM, "Liberal Democracy Index".

Conclusion and discussion

This article addresses the debate on whether coffee, as an agricultural commodity, has impacted democracy levels in Latin America and the Caribbean. Currently, there are two opposing sides, with scholars advancing and rejecting the premise that coffee production and exports are to blame for hindering democracy. Using multiple data sources and empirically testing for a relationship in 17 Latin American and Caribbean countries from 1962 to 2010, an era marked by fluctuations in coffee production and regime transitions, we found no significant relationship between coffee exports, production, and democracy levels in the region. Indeed, our primary finding is a non-finding, one that strengthens the claim made by a group of scholars skeptical of a coffee curse in the region.[115]

However, it is essential to acknowledge that our findings have limitations. First, our study is limited to a subset of Latin American and Caribbean countries. Coffee is cultivated in many other countries worldwide, including Africa and Southeast Asia. Therefore, the impact of coffee dependence on democracy levels may be different in other parts of the world, much like the impact of petroleum.[116] A broader cross-country comparison that covers the entire coffee belt is needed to provide a more comprehensive understanding of the subject.

Second, due to data constraints, our study centres on specific metrics and the era spanning from 1962 to 2010.[117] Although we found that coffee dependence did not affect democracy levels during that period, it is entirely plausible that it played a more significant role in the past. The factors that underpin political regimes are not static but rather dynamic and susceptible to change. Future research should take

note of this and examine historical trends as more data becomes available. We also encourage the use of alternative metrics for measuring coffee dependence.

Third, our analysis does not necessarily apply to other crop-based commodities. While coffee exports did not significantly influence democracy in Latin America and the Caribbean from 1962 to 2010, other agricultural economies may exhibit different behaviour. Scholars have demonstrated that inequality associated with fixed assets has been a key factor in impeding transitions to democracy. Perhaps, more than the type of agricultural commodities, the distribution of land – whether it is more or less equal – plays a crucial role in shaping incentives and regime dynamics. We encourage future researchers to build upon the exceptional insights provided by scholars[118] to explore how inequality in agricultural land ownership has influenced political regimes in Latin America and other developing settings.

Fourth, our non-finding does not mean that coffee is unrelated to other symptoms of the resource curse or that other agricultural commodities do not contribute to the resource curse. For instance, studies show how coffee price fluctuation fuelled violence in Colombia.[119] Others have discussed how alternative agricultural commodities have impacted politics.[120] Scholars should continue examining the extent to which coffee is a pathology that drives other natural resource curse symptoms and how other agricultural products might impact political regimes.

Notes

1. Wood, *Forging Democracy from Below*.
2. Winson, *Coffee and Democracy*.
3. Williams, *States and Social Evolution*; Roseberry et al., *Coffee, Society, and Power in Latin America*; Paige, *Coffee and Power*.
4. Pendergrast, *Uncommon Grounds*.
5. Dube and Vargas, "Commodity Price Shocks and Civil Conflict."
6. Williams, *States*.
7. Wood, *Forging*.
8. Ross, "What Have We Learned about the Resource Curse?" 240.
9. Ibid., 241.
10. Gurses, "Elites, Oil, and Democratization a Survival Analysis"; Haber and Menaldo, "Do Natural Resources Fuel Authoritarianism?"; Smith and Waldner, *Rethinking the Resource Curse*.
11. Ross, "Does Oil Hinder Democracy?" 332.
12. Robinson, Torvik, and Verdier. "Political Foundations of the Resource Curse"; Wright, Frantz, and Geddes. "Oil and Autocratic Regime Survival"; Ross, "What."
13. Gervasoni, "A rentier Theory of Subnational Regimes."
14. Bulmer-Thomas, *The Political Economy of Central America Since 1920*; Bates, O*pen-Economy Politics*; Williams, *States*; Paige, *Coffee*.
15. Bulmer-Thomas, "The Political."
16. Smith and Waldner, *Rethinking*.
17. Gurses, "Elites"; Haber and Menaldo, "Natural."
18. Gurses, "State-Sponsored Development."
19. Gurses, "Elites," 172.
20. Haber and Menaldo, "Natural," 5.
21. Ross, "What Have"; Ross, "Does Oil."
22. Murshed, *The Resource Curse*, 48.
23. Sorens, "Mineral Production, Territory, and Ethnic Rebellion"; Andersen and Aslaksen. "Oil and Political Survival."
24. Angrist and Kugler, "Rural Windfall or a New Resource Curse?"

25. Ross, "What Have," 241.
26. Wild, *Black Gold*.
27. Bates, *Open-Economy*, 3.
28. Ross, "What Have."
29. Mahoney, "Path-Dependent Explanations of Regime Change."
30. Bulmer-Thomas, *The Political*.
31. Mahoney, "Path-Dependent."
32. Wild, *Black*. Pendergrast, *Uncommon*.
33. Wild, *Black*, 122.
34. Williams, *States*; Paige, *Coffee*.
35. Williams, *States*, 197.
36. Ibid.. 232.
37. Ibid.
38. Reid, *Brazil: The Troubled Rise of a Global Power*.
39. Isham et al.. "The Varieties of Resource Experience."
40. Isham et al., "Varieties," 149.
41. Pendergrast, *Uncommon*, 31.
42. Dube and Vargas. "Commodity."
43. Wood, *Forging*.
44. Ibid., 25–6.
45. Moore, *Social Origins of Dictatorship and Democracy*.
46. Paige, *Coffee*; Wood, *Forging*.
47. Paige, *Coffee*.
48. Ibid., 55.
49. Ibid.
50. Wood, *Forging*.
51. Acemoglu and Robinson. *The Narrow Corridor*, 300–1.
52. Stanley, *The Protection Racket State*.
53. Pendergrast, *Uncommon*, 77.
54. Winson, *Coffee*.
55. Stanley, *Racket*.
56. Isham et al., "Varieties"; Dube and Vargas, "Commodity"; Pendergrast, *Uncommon*.
57. Pendergrast, *Uncommon*, 242.
58. Williams, *States*; Paige, *Coffee*.
59. Wood, *Forging*.
60. Miller, Boix, and Rosato, "Boix-Miller-Rosato (BMR)."
61. Simoes and Hidalgo, "The Economic Complexity Observatory."
62. The data focuses on the 17 Latin American and Caribbean countries covered by our study.
63. Miller, Boix, and Rosato, "Boix-Miller-Rosato (BMR)" define democracy as "political systems in which political leaders are elected under broad rights for men to vote in free and fair elections," per Our World in Data. https://ourworldindata.org/democracy.
64. The liberal democracy index "combines information on voting rights, the freedom and fairness of elections, freedoms of association and expression, civil liberties, and executive constraints," according to Our World in Data
65. Perelló, Lucas and Patricio Navia. "Changes in Support."
66. Paige, *Coffee*.
67. Wood, *Forging*.
68. Williams, *States*.
69. Bulmer-Thomas, *Political*; Mahoney, "Path-Dependent."
70. Mahoney, "Path-Dependent," 132.
71. Paige, *Coffee*; Wood, *Forging*.
72. Paige, *Coffee*.
73. Wood, *Forging*.
74. Reid, *Brazil*; Paige, *Coffee*; Wood, *Forging*.
75. Wild, *Black*; Pendergrast, *Uncommon*; Allen, *The Devil's Cup*.
76. Smith and Waldner, Rethinking, 3.
77. Bates, *Open-Economy*.

78. Bulmer-Thomas, *The Economic History*.
79. Williams, *States*.
80. Smith and Waldner, *Rethinking*.
81. Ross, "What Have."
82. Isham et al., "Varieties."
83. Ibid.
84. Williams, *States*; Paige, *Coffee*; Wood, *Forging*.
85. Wild, *Black*; Pendergrast, *Uncommon*; Allen, *Devil's*.
86. Paige, *Coffee*; Wood, *Forging*.
87. Dube and Vargas, "Commodity."
88. Isham et al., "Varieties."
89. Geddes, "What Causes Democratization?"; Treisman, "Democracy by Mistake."
90. Ross, "Does."
91. Dunning, "Does Oil Promote Democracy?"; Gurses, "Elites."
92. Haber and Menaldo, "Natural," 15.
93. Karl, "Dilemmas of Democratization"; Mainwaring and Pérez-Liñán. *Regime Legacies*; Wood, *Forging*.
94. Paige, *Coffee*; Wood, *Forging*.
95. Skaaning, Gerring, and Bartusevicius, "Political Regime."
96. Polity, "Democracy."
97. V-DEM, "Liberal Democracy Index."
98. Miller et al., *Dichotomous*.
99. Ibid.
100. Simoes and Hidalgo, "The Economic."
101. Per V-DEM, "Liberal Democracy Index", the mean liberal democracy score of Latin America and the Caribbean reached a low point of 0.19 in 1974 and 1975 and a high score of 0.51 in 2003.
102. At the same time, extending our empirical analysis even further back in time would have resulted in the lack of variance of our dependent variable, as authoritarian regimes were the norm in the 19th century and first half of the 20th century.
103. Ross, "Does Oil"; Gurses, "Elites."
104. Ross, "What Have."
105. Per the Observatory for Economic Complexity (OEC), the dollar amount corresponds to the years reported. While they do not reflect current values, the log transformation normalizes them by adjusting the scale.
106. MOxLAD, *Montevideo-Oxford Latin American*.
107. We include treatment leads and lags in all the specifications to show whether the parallel trends assumption holds.
108. The first-stage coefficient is 0.70. See Table A2.
109. At the same time, we found no correlation between international coffee prices and the percentage of coffee exports. Hence, we omitted that variable from the IV specifications.
110. Sun and Abraham, "Estimating Dynamic Treatment Effects."
111. In our analysis, we organize the relative time variable into broader intervals, or bins, representing periods before and after the treatment event. For the pre-treatment period, we defined bins capturing observations from 1 to 4 years, 5–8 years, and 9–13 years before the treatment. This decision allows us to assess the parallel trends assumption. For the post-treatment period, we create bins covering intervals from 1–2 years, 3–4 years and continue in two-year increments up to 14 years after treatment. We created these bins to enhance our explanatory power, as we lack enough observations for year-by-year estimates.
112. FAO, "Coffee Bean Production."
113. Jacks, "From Boom to Bust."
114. The first-stage coefficient is 0.46. See Table A2.
115. Williams, *States*; Wood, *Forging*.
116. Smith and Waldner, *Rethinking*.
117. Studies focusing on petroleum have encountered similar challenges and have covered the same period. Gurses, "Elites"; Ross, "What Have."
118. Paige, *Coffee*; Wood, *Forging*.

119. Dube and Vargas, "Commodity."
120. Isham et al., "Varieties."

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