Globalization, income inequality and political realignment: the transition from a two-party to a multi-party electoral system in Costa Rica

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Abstract

This project tests whether rising inequality and exposure to globalization (*trade, FDI, and tourism*) explain the striking change in the political landscape of Costa Rica since 2002. Income inequality has increased since at least the 1990s. In addition, the country has signed several important Free Trade Agreements (FTA) in the last two decades (US, China, and the EU). During the same period, international tourism has significantly grown. In this context, the project makes two main contributions. Firstly, expand the extensive literature on globalization and electoral outcomes by exploring globalization and political realignment in a developing country with a long democratic tradition. Secondly, to the best of our knowledge, this is the first project to combine two sets of administrative data at the individual level to answer questions on the effect of globalization and inequality on electoral outcomes. We observe that districts with higher income inequality vote less in both presidential and local elections – even when controlling for the increase in trade and FDI at the local level – show higher electoral volatility, vote less for traditional parties, and vote more for pro-globalization and conservative parties. Moreover, we observe that higher exposure to international trade and FDI reduces private campaign contributions, especially to the traditional parties of the two-party era. In conclusion, those "affected" by international trade and FDI vote less and increasingly support the new parties.

JEL codes: D31, D63

Keywords: Costa Rica, income inequality, growth, globalization, Foreign Investment, political participation.

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1 Introduction and literature review

1.1 Introduction

This project studies the interaction of globalization, income inequality, and electoral outcomes. It focuses on the effect of income inequality and globalization (*trade, FDI, international tourism, and immigration*) on electoral realignment. We are particularly interested in cases where the electoral system has changed from a two-party to a multi-party system. Figures 1 and 2 show that this transition is a global phenomenon in most democracies. Furthermore, it is also true when restricting the analysis to the oldest democratic systems, or continuous democracies (see Figure A.2). Hence, this paper is related to the literature on the effects of globalization on political polarization, which has traditionally focused mostly on developed countries.

This study combines uniquely detailed administrative data at the local and individual levels to study how globalization brings about change in political alignments in a particular context: Costa Rica. We aim to contribute to the discussion of how globalization and income shocks affect political preferences. To understand the transition from a two-party to a multi-party system, we start by studying the effect of growing inequality on declining turnout and vote shares for traditional parties at the district level. Then, we explore other electoral outcomes and their relationship with inequality also at the district level: electoral volatility, vote shares for pro-globalization parties, and vote shares for conservative parties. We replicate this analysis at the smallest aggregate level: the polling station.

Finally, using uniquely detailed individual-level data, we try to understand some of the mechanisms for changes in income distribution and individual income shocks, in particular the effect of new jobs in MNCs and exposure to immigration. Given the characteristic of our data, we focus on the universe of formal workers and the changes they have experienced in the last few decades. For instance, we explore changes in within/between firm-level income inequality. While other studies have already documented these changes in the income distribution in firms, we are among the first to show how they affect voting. Hence, we control and interact our inequality measures with jobs in MNCs, and account for the competition from immigrants at the employment and
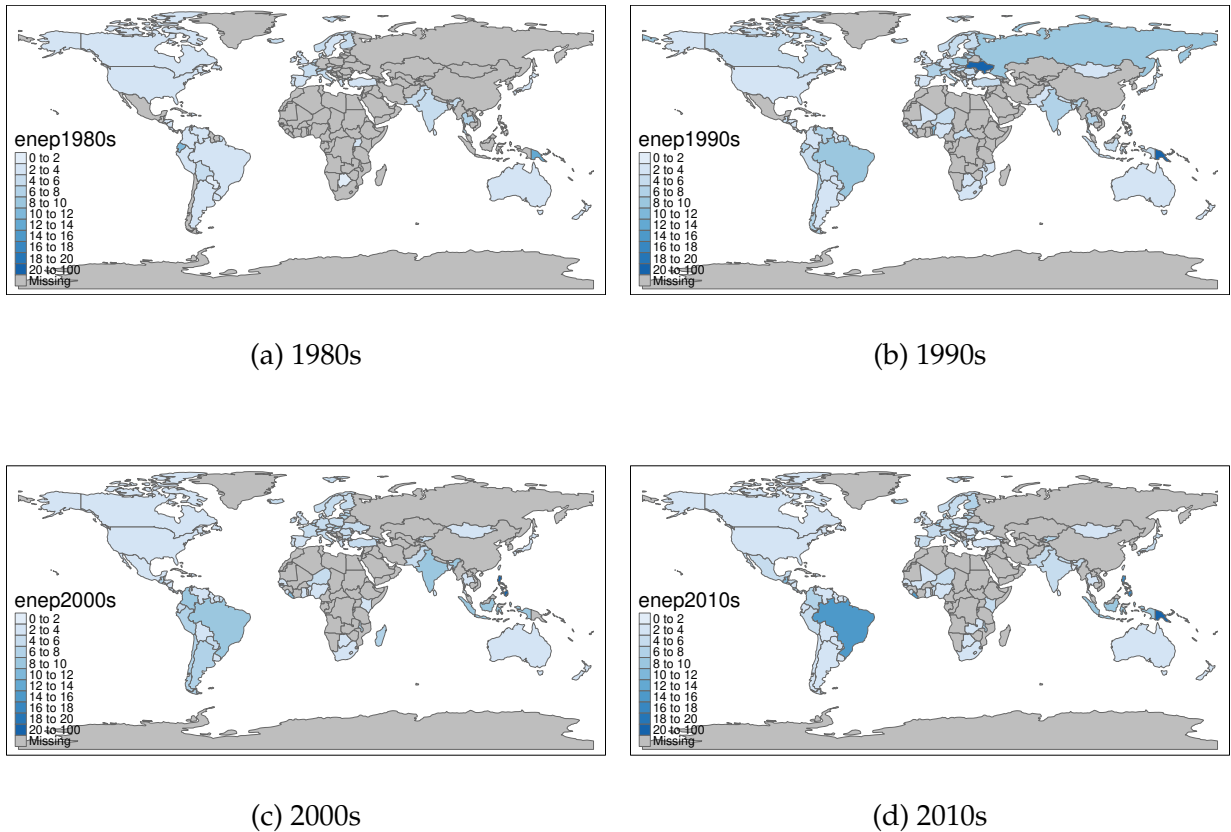
(a) 1980s

(b) 1990s

(c) 2000s

(d) 2010s

FIGURE 1: Global increase in the effective number of electoral parties

Source: authors' computation using data from Bormann and Golder (2022).

residential levels.

1.2 Motivation

How does higher exposure to globalization (trade, FDI, and immigration) contribute to the evolution of the multi-party electoral system that emerged in Costa Rica around 2000? This project aims to test whether two major shocks contribute to the striking change in the political landscape. First, the country has signed several important Free Trade Agreements (FTA) in the last two decades (with the US, China, and the EU). Second, the country has experienced at least two immigration waves from Nicaragua in the same period (1998 and 2018). Our hypothesis states that globalization is liked by some (the *cosmopolitan*) and dislike by others (the *nativist*) Inglehart and Norris (2016). Hence, the empirical design

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Effective number of electoral parties
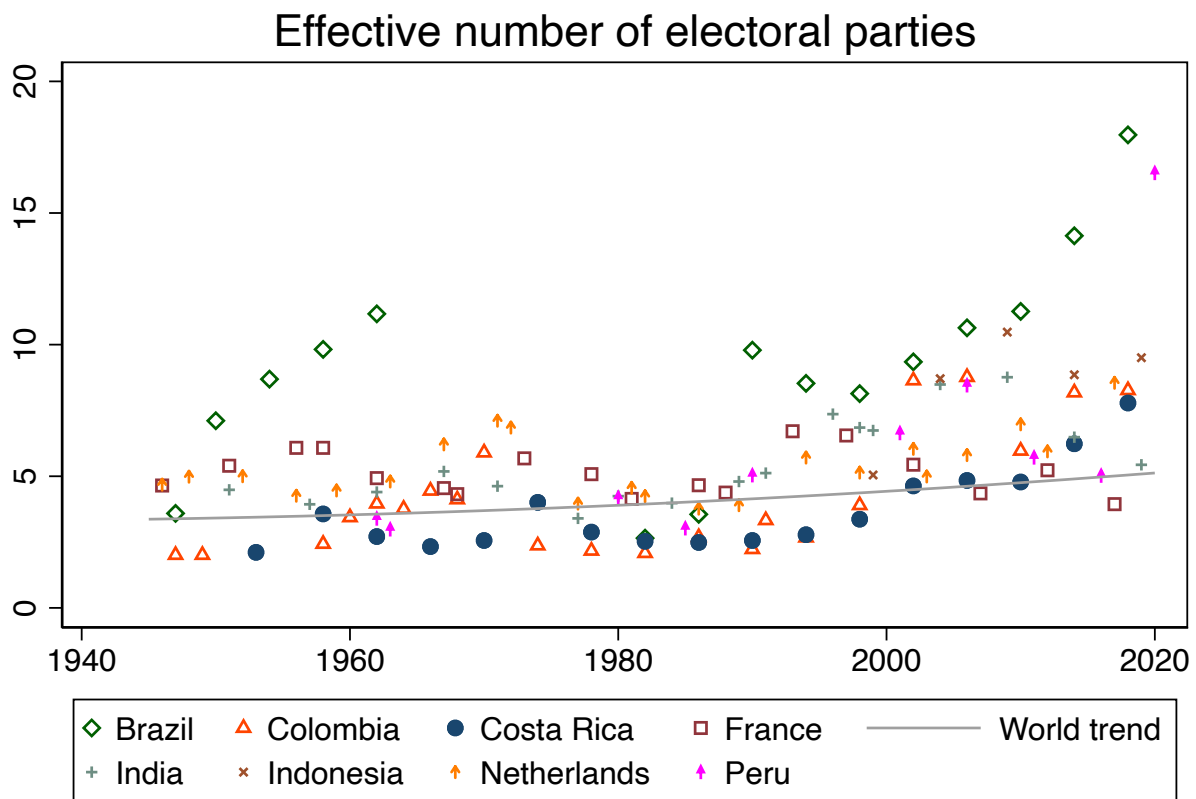
Source: authors' computation using data from Bormann & Golder (2022).

FIGURE 2: Effective number of electoral parties: selected countries

aims to test whether there is indeed a causal link between these globalization shocks and the reconfiguration of the electoral system in Costa Rica.

Costa Rica is the oldest standing democracy in Latin America, since the re-establishment of an elected government in 1949 after the Civil War of 1948.[1] The country has had a bipolar party system since 1953 and a fully two-party system from 1983 through 2000. Starting in 2002, Costa Rican democracy transitioned to a multi-party system. Hence, to understand this stark change, we are interested in studying the determinants of electoral outcomes (turnout, voting shares, campaign contributions, etc.) and how they relate to globalization. It is important to mention that other countries in Latin America, such as Mexico and Colombia, and in other parts of the world, for example, France, have also witnessed the emergence of new political parties that have broken the electoral equilibrium of the past. Hence, the mechanisms at play in this analysis are likely to be present in different regions.

This project aims to make two main contributions. Firstly, expand the extensive literature on globalization and electoral outcomes, by exploring globalization and political realignment in a developing country with a long democratic tradition, instead of focusing on political polarization in developed countries as it is usually the case in the literature (Aksoy et al. (2020), Autor et al. (2020), Fetzer (2019), Giordani and Mariani (2022), and Grossman and Helpman (2021)). Secondly, this would be the first project, to the best of our knowledge, to combine at the individual level two sets of administrative data to answer questions on the effect of globalization and inequality on electoral outcomes. Our analysis at the local level confirms the correlations observe at the national level in the last two decades between higher exposure to globalization (trade, FDI, tourism, and migration), higher inequality and lower electoral turnout.

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[1]According to World Economic Forum, Costa Rica is the oldest democracy in Latin America and the 21st in the world: `https://www.weforum.org/agenda/2019/08/countries-are-the-worlds-oldest-democracies`.

1.3 Literature review

1.3.1 Effects of economic and social shocks on voting:

This project closely relates to the literature on the effects of economic and social shocks on voting. Panunzi et al. (2020) examine the relationship between economic shocks and populism. The authors argue that economic shocks, such as recessions or financial crises, can increase support for populist political parties and leaders, who often blame these shocks on specific groups, such as immigrants or elites. They propose a model of disappointed expectations (induce a preference for risk), where an individual who suffers an unexpected and large income loss is forced to consume below his reference point (in this sense he is disappointed). This makes him become risk-loving and as a result, he leans towards populist candidates who are perceived as riskier. Furthermore, it is the intrinsic preference for risk of low-income and disappointed voters that induces policy divergence and gives rise to the "unwieldy" coalition supporting the populist candidate.

Bonomi et al. (2021) explore the role of identity and beliefs in political conflict. The authors argue that individuals' identities and beliefs, particularly those related to ethnicity, religion, and culture, can shape their political views and the conflicts they engage in. They develop a model of endogenous identities (associated with systematic belief distortions). Hence, to explain why cultural divisions have increased or why the redistributive conflict has not risen despite growing income inequality, they propose that when voters abandon their class identity and redefine themselves in terms of their moral or religious values, the latter become more important to explain their beliefs in several domains. In both papers, we observe the idea that economic shocks create new cleavages in society, and these could be driven by trade and technological change. Hence, both channels are relevant to this project.

Fetzer (2019) argues that economic factors, such as the government's austerity policies and the impact of the financial crisis, may have played a role in the decision of some voters to support Brexit. Exploiting high-frequency annual election data, he shows that a significant expansion in electoral support for UKIP in places with weak socioeconomic fundamentals precipitated the EU referendum. In addition, using data from government

estimates on the expected intensity of specific welfare cuts across districts, he also shows that support for UKIP started to grow in areas with significant exposure to precise benefit cuts after these became effective. Similarly, Dal Bo' et al. (2022) study the political success of Sweden's populist radical right party. The authors argue that the party, which has traditionally been a marginal player in Swedish politics, has been able to tap into public discontent with the political establishment and rising inequality to gain support.

Dal Bo' et al. (2022) provides the first comprehensive account of political selection into a major populist radical-right party: the Sweden Democrats. In a descriptive paper, using simple graphs and (reduced-form) shift-share regressions, the authors document that rising local vote shares for the party coincide with rising local disposable-income gaps between labor-market outsiders and insiders driven by a sequence of national austerity reforms. Their empirical analysis is entirely based on individual-level data (except for vote shares, at the level of the electoral precinct, and municipality). Hence, this is a steppingstone paper for the type of work this project pursues. Overall, these papers provide insight into the factors that can drive support for populism and political conflict. Economic shocks and austerity, identity and beliefs, and discontent with the political establishment are all identified as potential drivers of populism and political conflict.

1.3.2 Distributional effects of trade:

This work is also related to the extensive literature on the distributional effects of trade. Antràs et al. (2017), investigates the relationship between globalization and welfare in the presence of inequality, finding that trade raises aggregate income but also increases income inequality. Closer to the subject of this project is the work of Alfaro-Urena et al. (2019a), and in particular, Alfaro-Urena et al. (2019b). The authors study the effects of multinational corporations (MNCs) on workers in Costa Rica. Using similar data to the one presented in this project, the authors combine microdata on all formal worker-firm and firm-firm relationships in Costa Rica with an instrumental variable approach that exploits shocks to the size of MNCs in the country. They find that as MNCs bring jobs that pay a premium, they improve outside options by altering both the level and composition of labor demand. MNCs can also enhance the performance of domestic employers

through input-output linkages. Shocks to firm performance may then pass through to wages.

1.3.3 Theoretical work in sociology and social psychology:

This project also benefits greatly from past theoretical work in sociology and social psychology regarding social identity, intergroup behavior, social dominance, and more recently, populism. These works on other social sciences have contributed to a growing literature in economics as it will be discussed in the next subsection. Tajfel (1974) seminal work, discusses the concept of social identity and how it influences intergroup behavior. The author proposes that individuals have a need to form and maintain a positive social identity, which is achieved through identifying with certain groups and differentiating those groups from others. This process of group identification and differentiation leads to intergroup behavior, such as discrimination and prejudice. This theory has been influential in understanding the psychological basis for intergroup conflict.

Sidanius and Pratto (1999) presents a theory of social hierarchy and oppression that is based on the concept of social dominance. The authors argue that social hierarchy and oppression are maintained using intergroup dynamics, such as the exploitation of disadvantaged groups by dominant groups. The theory of social dominance has been influential in understanding the factors that contribute to the maintenance of social hierarchy. More recently, Norris and Inglehart (2019) discusses the rise of populism in the United States and Europe and the factors that have contributed to this trend. The authors argue that this rise can be traced to a combination of economic and cultural factors, including the decline of traditional industries, the increasing diversity of societies, and the increasing global interconnectedness of the world. Hence, they propose a cultural division between social values of the so-called "nativists" (conservative) and those of more "cosmopolitan" (progressive) individuals.

1.3.4 Trade (and inequality) affect political attitudes:

As mentioned in the previous subsection, there is a growing literature in economics that focuses on the effects of trade and inequality on political attitudes. Aksoy et al. (2020) examine the relationship between globalization, government popularity, and the skill divide. The authors find that there is a negative relationship between globalization and government popularity, particularly in countries with a high skill divide. Additionally, not only the economic outcomes but also the political attitudes of skilled and unskilled workers respond differently to trade shocks. Grossman and Helpman (2021) argue that identity politics can have a significant influence on trade policy, as individuals may prioritize their identity over economic considerations when making decisions about trade. Furthermore, adverse economic shocks strengthen identification with a particular social group and a material interest in stronger trade protection. Voters' preferences over trade policy reflect not only their own material self-interests but also concerns for members of those groups in society with whom they identify.

Autor et al. (2020) examines whether the exposure of local labor markets to increased foreign competition from China has contributed to rising political polarization in the United States since 2000. The authors find that rising trade exposure is associated with increased political polarization, as individuals may be more likely to support candidates who align with their views on trade. Hence, they find a causal effect of import competition on voting for anti-globalization parties in the US. For Giordani and Mariani (2022), the lack of redistribution and a long-run process of human capital accumulation might explain the mounting hostility to free trade. This (endogenous) process, by eroding the political support for redistribution, may increase the demand for protectionism, if trade openness deepens inequality. They show how the recent resurgence of protectionism in Western democracies may be explained, at least partially, by the inability to redistribute the gains from trade towards the losers from globalization (those exposed to import competition).

Finally, in a case closer to the one presented in this paper, Van Patten and Méndez (2022) examines the relationship between firm networks and attitudes toward openness.

Focusing on a referendum on an FTA in Costa Rica, the authors find that individuals with stronger connections to firms that are more integrated into global networks are more likely to support trade agreements, while those with weaker connections are less likely to support such agreements. They identify this effect by measuring the level of exposure at the firm level of changes in tariffs if the FTA was not approved. This paper uses similar data sources to the ones discussed in this project while focusing on one single election. Concretely, they use a similar version of the employee-employer data and aggregate election results at the precinct level. However, they do not use individual-level turnout data.

1.3.5   Migration and electoral outcomes:

There is also a vast literature on migration and electoral outcomes. In the context of this project, immigration exposure is a common label for individuals who are more exposed to prospective competition from immigrants. Dustmann et al. (2019) investigate the relationship between refugee migration and electoral outcomes. The authors find that the presence of refugees is associated with a decline in electoral support for incumbent parties. Moreover, an exogenous increase in refugee allocation is associated with higher turnout and higher vote shares for anti-immigration parties in all but most urban municipalities in Denmark. Tabellini (2020) studies in a unified framework the political and economic effect of immigration across US cities between 1910 and 1930, a period when the massive inflow of European immigrants was abruptly interrupted by two major shocks, World War I, and the Immigration Acts (1921 and 1924).

Tabellini (2020) jointly investigates the political and economic effects of immigration and studies the causes of anti-immigrant sentiments. The first possible cause is economic in nature and argues that political discontent emerges from the negative effect of immigration on natives' employment and wages. The second hypothesis is that native backlash has cultural roots. This paper finds that opposition to immigration was unlikely to have economic roots. Instead, it provides evidence that natives' political discontent was increasing in the cultural differences between immigrants and natives. Hence, this conclusion echoes that of Alesina and Ferrara (2005), where diversity can be economically beneficial, but may be politically hard to manage. Recent work on stereotypes by Bor-

dalo et al. (2016) also provides insights on this matter. Beyond the economic dimension, people who are more than average exposed to immigration may also be more persuaded than others of a platform based on stereotypes about immigration threats.

1.3.6   Related literature in political science:

Finally, there is important literature in political science related to the broad topics discussed in this project. Hausermann and Kriesi (2015) explores the relationship between individual-level preferences and party choice in European politics. The authors argue that individual-level preferences are shaped by both economic and cultural factors and that these preferences are often organized into two broad categories: left-right positions on economic issues, and liberal-conservative positions on cultural issues. For the authors, there is a shift from an economic to a cultural basis of stratification, worldwide. The political actors who mobilize globalization losers mainly do so in identity-based and not in economic terms.

Rovny et al. (2021) discusses the concept of "cleavage" in political science, which refers to the divide between different groups in society along lines such as class, religion, or ethnicity. The authors argue that cleavages play a significant role in shaping political behavior and party competition, and they explore the various ways in which cleavages can emerge and change over time. They find that conventional parties on the left-right have become much less socially structured. In addition, parties on the socio-cultural transnational divide—GAL (green, alternative, libertarian) and TAN (traditionalist, authoritarian, nationalist) — have sharply divergent social bases.

Hobolt and De Vries (2015) examines the role of "issue entrepreneurship" in multiparty systems. Issue entrepreneurship refers to the process by which parties or politicians seek to create or exploit new issues to gain electoral advantage. The authors argue that issue entrepreneurship is more common in multiparty systems, where there is more competition among parties and a greater need to differentiate themselves from one another. Two findings are important in the context of this project: first, political parties are more likely to become issue entrepreneurs when they are losers on the dominant dimension of contestation; and second, parties will choose which issue to promote based on their internal

cohesion and proximity to the mean voter on that same issue.

De Vries (2018) discusses the concept of the "cosmopolitan-parochial divide" in political behavior and party competition. The cosmopolitan-parochial divide refers to the distinction between parties and voters who are more open and cosmopolitan in their attitudes, and those who are more parochial and inward-looking. The author argues that this divide has become increasingly important in recent years and that it has significant implications for party competition and electoral behavior. Moreover, the cosmopolitan–parochial divide has become largely independent of the economic left–right dimension and influences people's voting decisions independently of their left–right views.

1.4   Theoretical/conceptual framework: outsider status

Here we briefly present the theoretical framework that guides the analysis in this project. *Outsider status* is the main guiding concept: a common label for individuals with individual traits that make them marginalized in some social or economic dimension. Dal Bo' et al. (2022) presents this idea based on theoretical work in sociology and social psychology on social identity Tajfel (1974) and social dominance Sidanius and Pratto (1999), as discussed in the previous section. In general, group cleavages and conflicts can arise if a set of marginalized individuals in a certain dimension see themselves as members of an in-group and more established individual as members of an outgroup. This is appealing for the purpose of this project because the general idea of intergroup tensions accommodates hypotheses based on economic insecurity as well as on cultural backlash, as in Norris and Inglehart (2019).

This project studies the relationship between changes in inequality (at an aggregate level) or changes in position in the income distribution (at an individual level) and changes in electoral outcomes. Hence, the concept of outsider status provides a useful category to identify those individuals whose position in the income distribution has deteriorated, consequently moving them from the outgroup to the ingroup or vice versa. At an aggregate level, it would mean changes in the composition of outsiders and insiders within a given locality or firm. Hence, the first step is to look at changes in relative income.

However, the idea presented by Dal Bo' et al. (2022) also allows us to think about the mechanisms that explain these changes in relative income. We are particularly interested in the link between the labor market and immigration exposure.

Firstly, we conceptualize the idea of *labor-market outsiders*. Following Dal Bo' et al. (2022), we consider the possession of a steady job as well as the risk of losing that job. Hence, we propose the following categories: *outsiders*, loosely attached (e.g., informal workers); *insiders*, tightly attached (e.g., MNCs workers); and *vulnerable insiders*, at different risks of losing their job due to technological change, outsourcing, or general business downturns (e.g., other formal workers). Secondly, we think about *immigration exposure*: a common label for individuals who are more exposed to prospective competition from immigrants in different domains. We introduce the following dimensions, *exposure by industry* and *exposure by occupation*, referring to industries and occupations where the share of immigrants has increased; as well as *exposure by neighborhood*, localities where the share of immigrants has increased.

1.5   Historical background

The modern political history of Costa Rica starts in the aftermath of the 1948 Civil War, triggered by the annulation of the elections results of February 1948.[2] A group of rebels led by José Figueres Ferrer formed the National Liberation Army and successfully toppled the government of Teodoro Picado (1944-1948) (Molina Jiménez, 2001). Among the social and political achievements of this period was the establishment of the Supreme Electoral Court of Costa Rica (Tribunal Supremo de Elecciones, TSE), the abolishment of the army, the end of racial segregation, and women's suffrage. The outcomes of the war also included exile for the losers and the ban of communist parties to take part in elections (revoked in 1974). This conflict was the last violent political episode in the history of Costa Rica, and it established a defining moment in the political, social, economic, and cultural development of the country.

The two sides of the Civil War were at the origin of the dichotomous political en-

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[2]For a longer discussion of the historical background and political cleavages in Costa Rica, see Barrera et al. (2021)

vironment that dominated Costa Rican politics for the next five decades. The winning side, led by Figueres Ferrer, established the National Liberation Party (Partido Liberación Nacional, PLN), of center-left social democratic orientation, which would become the dominant political party. The losing side, led by Rafael Ángel Calderón Guardia, reconstituted into a number of political parties and coalitions of center-right Christian democratic orientation that won the presidential elections three times before establishing the Social Christian Unity Party (Partido Unidad Social Cristiana, PUSC) in 1983. The successful transfer of control to the center-right in 1958 marked the beginning of a tradition of alternation of power that crystallized in the following decades (Solís Avendaño, 2006).

While we can only strictly define a two-party system from 1983 onwards, the alliances on the right constituted after the Civil War and the weakness of socialist parties contributed to the predominance of a bipolar party system since 1948 (Sánchez Campos, 2003). Interestingly, no political party has won the elections more than twice in a row, not even in the most dominant years of the PLN during the 1970s and 1980s. Hence, some have interpreted the political history of Costa Rica as an affair of a dominant party versus everyone else (Alfaro Redondo, 2019). However, the institutional model already started to deteriorate in the late 1970s, with the combination of economic factors (i.e., high levels of public debt, inflation, capital flight, etc.) and political violence in Central America. After the political pact between Calderón Fournier from the PUSC and his successor from PLN Figueres Olsen in 1995, which intended to continue the process of adjustment and reform of the State that started in the 1980s, social discontent mounted, breaking the basis that had supported the PLN in the construction of the Welfare State (1950-1978) (Alfaro Redondo and Alpízar Rodríguez, 2020).

The erosion process of the 1990s thus revealed growing dissatisfaction with the political system as a whole, which translated first into an increase in electoral abstention in 1998, and then with the emergence of the Citizens' Action Party (Partido Acción Ciudadana, PAC) in 2002 in a process initially identified by some as partisan dealignment (Sánchez Campos, 2003). As traditional parties converged towards the center in the 1980s and 1990s, the once center-left PLN suffered the most (Raventós-Vorst et al., 2005). In this context, PAC took the social democratic baton and attracted many intellectuals and

prominent figures from the PLN and other parties. After two PLN governments, PAC won the election for the first time in history, as the PLN collapsed in the second round in 2014 (Alfaro Redondo et al., 2015). Finally, the PLN finished third for the first time in 2018, when the PAC defeated the evangelical Christian National Restoration Party (Partido Restauración Nacional, PRN), founded in 2005.

While support for non-established parties increased, and a candidate from a previously fringe party made it to the second-round vote in 2018, established parties have survived, and the party system has not collapsed, prompting some authors to favor the concept of realignment instead (Perelló and Navia, 2021). Thus, after the appearance of PAC in 2002, the last two decades have also seen the emergence of other parties that have played an important role in at least one election. Right-wing Libertarian Movement Party (Movimiento Libertario, ML), finished third in 2006 and 2010, with 8.5 and 21 percent of the vote, respectively. Left-wing Broad Front Party (Frente Amplio, FA), finished third in 2014 with 17 percent of the vote. Finally, the aforementioned right-wing evangelical Christian PRN finished first in the first round in 2018 with 25 percent of the vote, only to lose to PAC in the second round. This paper contributes to explaining the fragmentation of the Costa Rican electorate in the last two decades (see Figures 3 and A.3 for a summary of election results).

2 Data sources

This project exploits the combination of administrative data sources, surveys, and censuses. The most innovative of these datasets are social security records and the possibility to match them with electoral registries. The country has a unique identification number for every citizen and legal resident. Hence, it is possible to match these two data sets. The electoral registry tells us if one person voted in one election or not, and the social security records offer a myriad of socio-economic variables. We have not yet been able to obtain the individual-level match, but it remains our goal. Therefore, we concentrate on aggregate results at the local level for the moment. We distinguish salient trends and plan to use individual-level data to further explore mechanisms. In doing so, this would
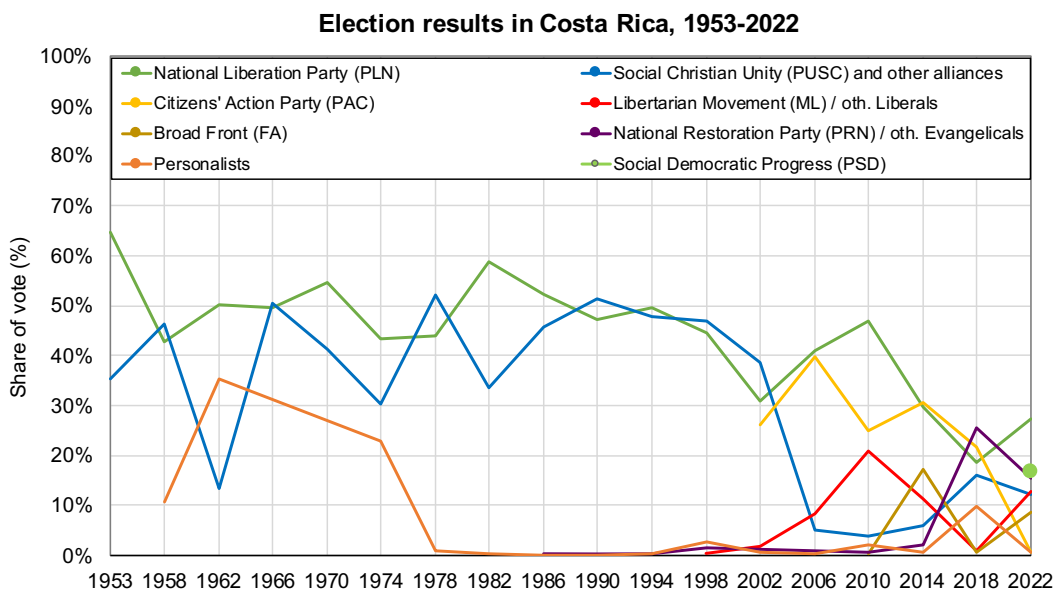
Election results in Costa Rica, 1953-2022

FIGURE 3: Electoral results: from two-party to multi-party system

Source: authors' computations using official election results.
Note: the figure shows the share of votes received by selected groups of Costa Rican political parties in presidential elections between 1953 and 2022. Provisional results for 2022.

be the first project, to the best of our knowledge, to combine two sets of administrative data to study electoral outcomes.

2.1 Administrative electoral

2.1.1 Electoral registries (micro): 1994 – 2022.

Electoral registries are the lists of eligible voters in each election. Since registration is automatic in Costa Rica, most adults over the age of 18 are systematically included in the registry. There are a few possible exceptions, for example, those who have not renewed their national identity card (*cédula de identidad*) in over 10 years. While there are probably several individuals that fall into this category, it is generally considered that this is a small number, because the national identity card is necessary for most bureaucratic and admirative procedures in the country and its renewal is free of charge. Hence, it is unlikely that someone living in the country would not be included in the electoral registry. It is a more plausible possibility for those who have migrated abroad but are not part of the adult population resident in the country. Thus, electoral registries are reliable censuses of the adult population in Costa Rica.

There are two main features of the electoral registries that are of paramount importance for this project. Firstly, the registries assign a polling station to everyone. In Costa Rica, polling stations are rooms within polling centers. For example, if the polling center is a school, a polling station would be a classroom within the school. Thus, polling stations are the smallest level at which we can aggregate electoral results such as vote shares. In addition, since everyone is assigned to a polling station close to their residence, these centers are good proxies for individual addresses. Secondly, the electoral registries considered in this project, include individual-level turnout for each election. In other words, they record whether an individual showed up at the polling station on the day of the election. This unique variable would allow us to study the individual-level determinants of turnout.

2.1.2 Public statistics electoral processes (aggregated): 1994 – 2022.

2.1.3 Private campaign contributions (micro): 2006 - 2022.

2.2 Administrative labor market

2.2.1 Social security (micro): 2001 – 2021.

This is probably the most fascinating data source in this project. This data is not available to the public, but it is possible to request it from the Social Security Authority of Costa Rica. With the support of *WID.World*, we purchased every month of data for every year from 2001 through 2021. This data has income information for all workers of the formal sector, as well as, important socio-economic variables: income, occupation, working hours, public/private sector, industry, geographical localization of the firm, wage/independent worker, sex, age, national/foreign and region. This information is certainly at the center of the study presented in this paper. Its richness also motivates follow-up research projects, such as the application presented in the Fifth Section of this document: local-level inequality and electoral outcomes.

2.2.2 Graduates from all universities (micro): 2000-2020.

2.2.3 List of exporting firms (micro): 1998 – 2021.

2.2.4 List of companies in FTZ (FDI) (micro): 2001 – 2021.

2.2.5 List of firms and persons (micro) registered at the ministry of tourism.

2.3 Surveys and censuses

2.3.1 National Household surveys (ENAHO): 2000 – 2022.

Costa Rica has had consistent annual Household Surveys since 1976. However, for the scope of this project, those from 1990 and especially from 2000 are the most relevant ones. The databases of these surveys are available to the public. It is important to mention that in the period considered in this paper (2000-2020), the baseline household survey changed

Descriptive Statistics: formal workers in Costa Rica, 2001, 2011 and 2021.

		2001	2011	2021
% age	**23 or -**	13.6	11.3	6.6
	24 to 34	29.9	32.6	29.5
	35 to 44	24.5	22.6	25.9
	45 or +	32.0	33.5	37.9
% educational level	**No university degree**	96.9	87.3	80.2
	University degree	3.1	12.7	19.8
% skill level	**unknown**	76.8	34.6	25.9
	unskilled	5.9	17.5	19.2
	semi-skilled	7.0	22.1	24.7
	skilled	10.3	25.8	30.1
Sex	**% Female**	31.4	36.2	40.1
Employment	**Mean monthly full time wage (100 = 2021)**	149,742	429,318	677,803
	Total number of formal workers	900,154	1,422,187	1,777,287
	% contracts public sector	26.9	23.6	21.1
Voting	**Total number of voters a/**	2,279,851	2,822,491	3,541,911
	Number of polling stations	6,681	6,617	6,847
	% turnout a/	68.8	69.1	56.8

a/ Presidential election years: 2002, 2010 and 2022.
Source: authors' computation using data from Social Security (CCSS) and the Electoral Board (TSE) of Costa Rica.

FIGURE 4: Descriptive Statistics: Costa Rica, 2001, 2011 and 2021

in Costa Rica. Hence, here we use the Multi-Purpose Household Survey (*Encuesta de Hogares de Propósitos Múltiples*, EHPM) from 2000 through 2009, and the National Household Survey (*Encuesta Nacional de Hogares*, ENAHO) from 2010-2020. Although both surveys have similar objectives, they have different forms and specificities. Therefore, cleaning them in order to obtain equivalent results throughout the sample, requires an additional effort.

2.3.2 Latin American Public Opinion Project (LAPOP): 1976 – 2020.

2.3.3 Censuses (10 percent sample): 1984 – 2000 – 2011 – (2022).

3 Methodology

3.1 Aggregate analysis

Most of the aggregate results presented in the next section have the following form. These are descriptive regressions where Y_{it} represent aggregate electoral outcomes (*turnout, volatility, and vote-shares*) in district i during election t; $INEQ_{it}$ symbolizes different measures of income inequality (*Gini coefficient, Top 10, and Bottom 50*); γ_i refers to locality (district) fixed effects, and δ_t represents election (year) fixed effects. Additionally, X_{it} is a vector of district-level controls, such as the social development index (SDI), and log-average-income. Finally, u_{it} are the residuals of the model.

$$Y_{it} = \gamma_i + \delta_t + \beta INEQ_{it} + \theta X_{it} + u_{it}$$

3.2 Individual level difference-in-difference: turnout

We can quantify changes in turnout across groups by estimating a difference-in-differences specification:

$$turnout_{i,t} = \alpha O_i + E_t + \sum \beta_t \left(O_i \times E_t \right) + Z_{i,t}\gamma + E_t \times Z_{i,t}\delta + \epsilon_{i,t}$$

Here, $turnout_{i,t}$ means whether individual i voted/did-not-vote in election period t. O_i indicates whether individual i is an outsider, and E_t indicates election period t. In this specification, $Z_{i,t}$ are control variables (*e.g., age, gender, education*) and they also interact with the election-period dummies. It is important to recall that the difference-in-differences specification captures growth-rate differences. We could also examine level differences at the individual level instead, with and without controls. Finally, the idea of this specification would be to exploit the diversity of outsider status described in Section

1.4, in particular, the *labor-market* and *immigration exposure* dimensions.

3.3 Mechanisms

3.3.1 Trade and FDI

We also aim to study the political and economic effects of increased exposure to trade and FDI in Costa Rica in the last two decades. The major events of this period were the signature of FTAs with the main economic partners of the country: the US (CAFTA, 2006), China (2011), and the EU (2012). While we have yet to show a clear shock in the trade data, we document that FDI is indeed very important in the Costa Rican labor market (see Figure 5). Nonetheless, exposure to trade has been an important topic in the political arena of the country. In 2007, before the confirmation of CAFTA by the Costa Rican congress, a referendum was organized to give the people the chance to vote yes or no to the FTA. It was ultimately approved by 51.56 % of voters. Nonetheless, this shows how salient was the topic in the political debate at the time.

FDI: We explore the creation of FDI-jobs as the first mechanism that explains changes in the income distribution and therefore in the insider-outsider status of individuals. Based on the findings by Alfaro-Urena et al. (2019b), we know that Costa Rica has experienced a direct MNC wage premium of 9 percent, which is consistent with MNCs paying above-market wages rather than compensating workers for *disamenities*. This premium is larger for workers with a college education (12 percent) than for those without one (8 percent). In addition, the growth rate of annual earnings of a worker experiencing a one standard deviation increase in either the labor market or the firm-level exposure to MNCs is one percentage point higher than that of an identical worker with no change in either MNC exposure. Hence, according to the literature, MNCs explain positive changes in income for at least part of the population. In addition, MNCs help insure people against local income shocks, and MNCs' wages do not depend on local politics.
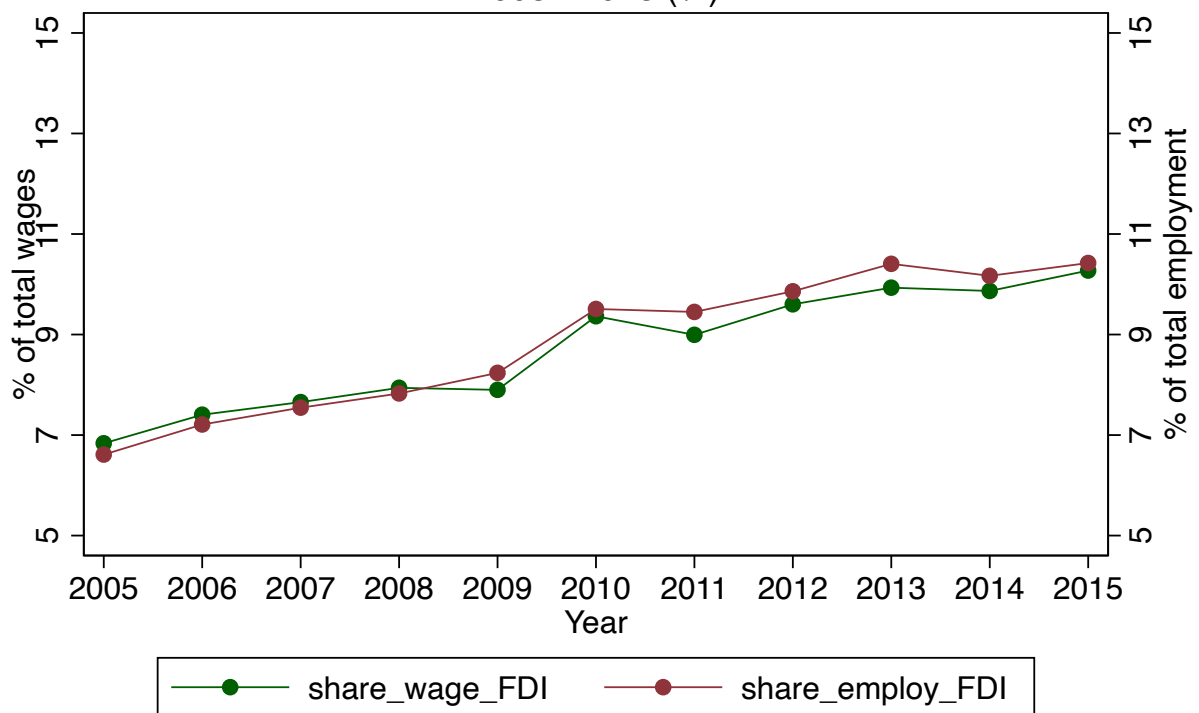
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FIGURE 5: Share of workers in MNCs

$$turnout_{it} = \beta_w \Delta w_{it} + \beta_{LME} \Delta LME_{s(i),t} + \beta_{FLE} \Delta FLE_{j(i),t} + \theta X'_{ij,t-1}$$

$$+\alpha_{j(i)} + \gamma_{ind(s(i)) \times t} + \mu_{reg(s(i)) \times t} + \rho_{ind(s(i)) \times reg(s(i))} + u_{it}$$

We are interested in exogenous changes to MNCs exposure as a possible mechanism that affects income distribution. Of course, these exogenous changes are difficult to find naturally. Hence, we propose an instrumental variable strategy à la Alfaro-Urena et al. (2019b), where changes in exposure to MNCs explain changes in the income distribution, but do not directly explain changes in voting. Here, we present a specification that combines changes in income, as well as labor market and firm-level exposure to MNCs (see, the equation above). Where the outcome $turnout_{it}$ represents vote/no-vote of worker i in election t; $\Delta LME_{s(i),t}$ / $\Delta FLE_{j(i),t}$ are labor market and firm-level exposure; $X'_{ij,t-1}$ is a vector of worker and firm characteristics; $\alpha_{j(i)}$ are firm $j(i)$ fixed effects; $\gamma_{ind(s(i)) \times t}$ are controls for potential shocks to industry x region market of i; $\mu_{reg(s(i)) \times t}$ are controls potential shocks to region of the same market; And $\rho_{ind(s(i)) \times res(s(i))}$ are controls for differences in levels between markets.

$$\Delta \mathcal{M}_{st} \equiv \frac{M^{CR}_{s,t} - M^{CR}_{s,t-1}}{M^{CR}_{s,t-1}} \times 100$$

We define as $\Delta \mathcal{M}_{st}$ as the percentage increase between years $(t-1)$ and t in the number of MNC workers in labor market s in CR, where $M^{CR}_{s,t}$ is the number of MNC workers in market s in year t. Now, $LME_{s(i),t}$ is a sum across all labor markets s' in CR, in which market s' is weighted by its "closeness" to the market s of the worker. Moreover, $\pi_{s(i)s',t_0}$ the "closeness" measure – is the number of workers who start year t in market $s(i)$ and end t in s', divided by the total number of workers who start t in market $s(i)$.

$$LME_{s(i),t} \equiv \sum_{s'} \pi_{s(i)s',t_0} \psi_{s'} \nu_{s',t-1} \Delta \mathcal{M}_{st}$$

Finally, we propose to use the worldwide size of MNCs with subsidiaries in Costa Rica, as an IV to account for the creation of FDI jobs in the country. This idea comes from

Alfaro-Urena et al. (2019b) who use Orbis and Compustat to account for the changes in the workforce of MNCs present in CR. Here, two variables are key to the construction of IVs: the main industry code of the MNC and its worldwide number of workers. This allows us to create instruments for (labor-market exposure) $\Delta LME_{s(i),t}$ and (firm-level exposure) $\Delta FLE_{j(i),t}$ using ΔO_{st} as the IV analog of ΔM_{st}. The formula for ΔO_{st} is:

$$\Delta O_{st} \equiv \frac{M^{Out}_{s,t} - M^{Out}_{s,t-1}}{M^{Out}_{s,t-1}} \times 100$$

where $M^{Out}_{s,t}$ is the year-t number of workers *outside* of CR across all MNCs whose subsidiaries operate in the two-digit *industry × region* market s in Costa Rica. Importantly, the exclusion restriction for the IV of $\Delta LME_{s(i),t}$ is that changes between $(t-1)$ and t in the employment outside of CR of MNCs whose subsidiary is in labor market s in CR are not correlated with contemporaneous shocks to the productivity of workers in s in CR.

Trade: we identify the demand-driven component of American/European/Chinese exports by instrumenting for growth in exports from Costa Rica using the contemporaneous composition and growth of American/European/Chinese exports in six other Central American countries (using the *UN Comtrade Database*). Hence, we isolate the component of growth in Costa Rican trade with the US/EU/China that is driven by export-supply growth in the US/EU/China, rather than Costa Rican product-demand shocks, following the identification strategy in Autor et al. (2014), Acemoglu et al. (2016) and Autor et al. (2020). We exploit the fact that during our sample period, much of the growth in trade stems from the signature of FTAs, which is a demand shock from the perspective of Costa Rican producers.

In the analysis of local and presidential elections, as well as campaign donors, we estimate equations of the form:

$$\Delta Y_{cdj\tau} = \gamma + \beta_1 \Delta TP_{j\tau}^{cu} + X'_{cdjt}\beta_2 + e_{cdj\tau}$$

Where dependent variable $\Delta Y_{cdj\tau}$ is the change in an outcome for the period τ (2002 to 2022 in our baseline specifications) that corresponds to county/district cell cd in CZ j. To

our trade-exposure measure $\Delta TP_{j\tau}^{cu}$, we pair an expanded vector of regional controls X'_{cdjt}, which includes Census-division dummies and initial Commuting Zone (CZ) economic and political conditions.

3.3.2   Migration

We aim to study the political and economic effects of Nicaraguan immigration in Costa Rica between 1998 and 2020, a period with two major shocks: (1) Mitch hurricane hit important parts of Central America in 1998, and (2) the Political Riots of 2018, which began in April 2018 when demonstrators in several cities of Nicaragua began protests against social security reforms that increased taxes and decreased benefits. In line with these events, we find evidence in the literature that xenophobic sentiment against Nicaraguans peaked in 2005-2006 (Vargas Selva et al., 2013). In 2005, congress approved a new migration law that viewed immigration as a national security issue, promoted more control of immigration flows, and a crackdown on illegal immigration, while welcoming foreign investors and retirees. This happened during a PUSC government (center-right) and many sectors criticized it as a violation of human rights. Eventually, a more inclusive migration reform was passed in 2009.

The immigration wave of 2018 saw an increase in asylum seekers and persons with higher educational backgrounds. However, this does not necessarily reflect in the estimates from household surveys, since household surveys do not account for refugees. Instead, it is likely that those in the survey are immigrants who have settled. So, it is necessary to contrast these estimates with those from population censuses. Figure 6 shows that household surveys indeed underestimate the number of foreign-born and Nicaraguans in 2000, soon after the first shock, but not in 2011. Historical evidence suggests that migration shocks come mainly from push factors in Nicaragua, as opposed to pulling factors in Costa Rica. Of course, there are reasons to believe that the choice of where migrants settle is not exogenous. Therefore, the next sections present a full discussion of this issue and possible alternatives.

To study the political and economic effects of immigration, we focus on the period covered by social security data (2001-2020) and use the 1984 census to build our instrument.
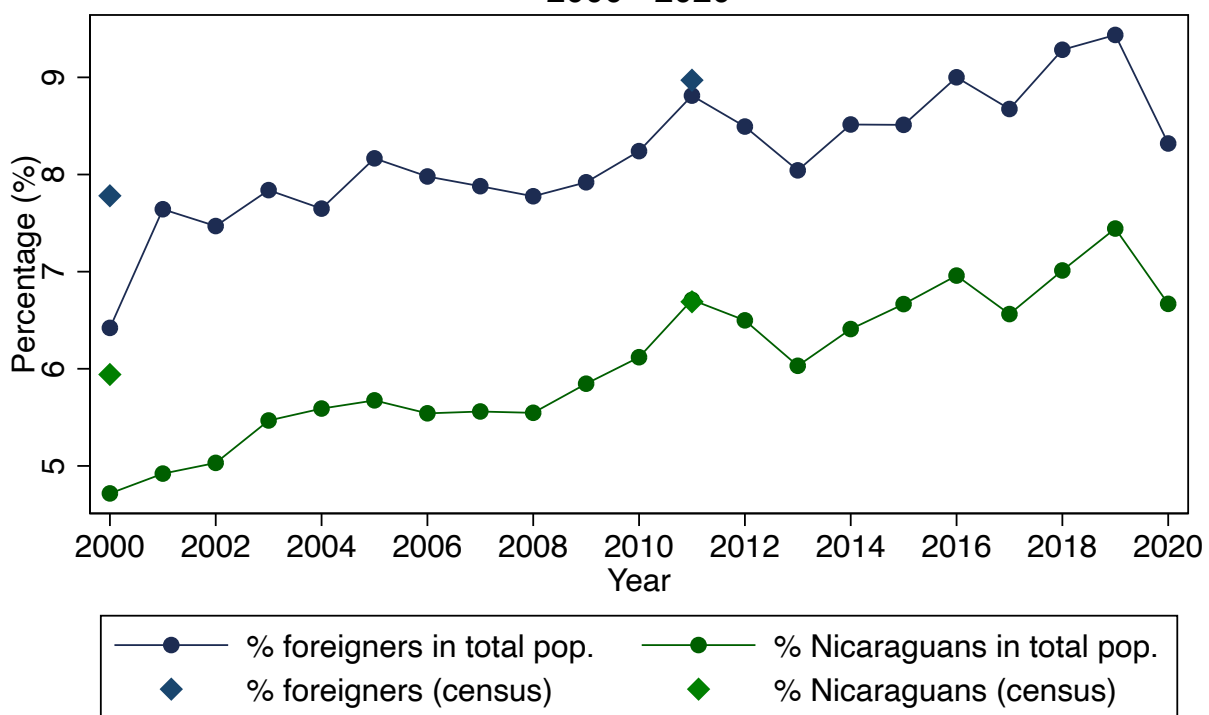
Source: authors' computation using data from national household surveys (ENAHO & EHPM) and population censuses of Costa Rica.

FIGURE 6: Share of foreigners in censuses and household surveys

Hence, following Tabellini (2020), we propose the following specification:

$$y_{ct} = \gamma_c + \delta_t + \beta \, Imm_{ct} + u_{ct}$$

Where, y_{ct} is the outcome for county c in election t, and Imm_{ct} is the fraction of immigrant workers over the total number of workers in the county. γ_c and δ_t are county and year fixed effects, implying that β is estimated from changes in the fraction of immigrants within the same county over time, compared to other counties each year.

We propose a "leave-out" version of the shift-share instrument à la Card (2001). The instrument predicts the number of immigrants received by Costa Rican counties over time by interacting with 1984 settlements of different nationality groups with subsequent migration flows from each sending country, excluding individuals that eventually settled in each county.

$$Z_{ct} = \frac{1}{P_{ct}} \sum_j \alpha_{jc} O_{jt}^{-M}$$

Where P_{ct} is the predicted county population; α_{jc} is the share of individuals of nationality group j living in county c in 1984; and O_{jt}^{-M} is the number of immigrants from country j that entered Costa Rica between t and $t-1$, net of those that eventually settled in county c.

4 Aggregate results: district level

The analysis of cross-sectional data for each presidential election uses different colors and symbols for the estimated coefficient for each presidential election (2002-2022). The colors represent the winning party of each electoral contest. The coefficients are statistically different from zero if they are on one side or the other of the vertical line and the zero is not contained within the bars that represent the standard errors. If the coefficient is plotted to the right of zero, its value is positive, and if it is plotted to the left, its value is negative. It is important to note that the cross-sectional analysis uses other control variables (*social development index and average income per district*), but there are no year or

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log real GDP per capita and Gini coefficient
Costa Rica: 1990 - 2017
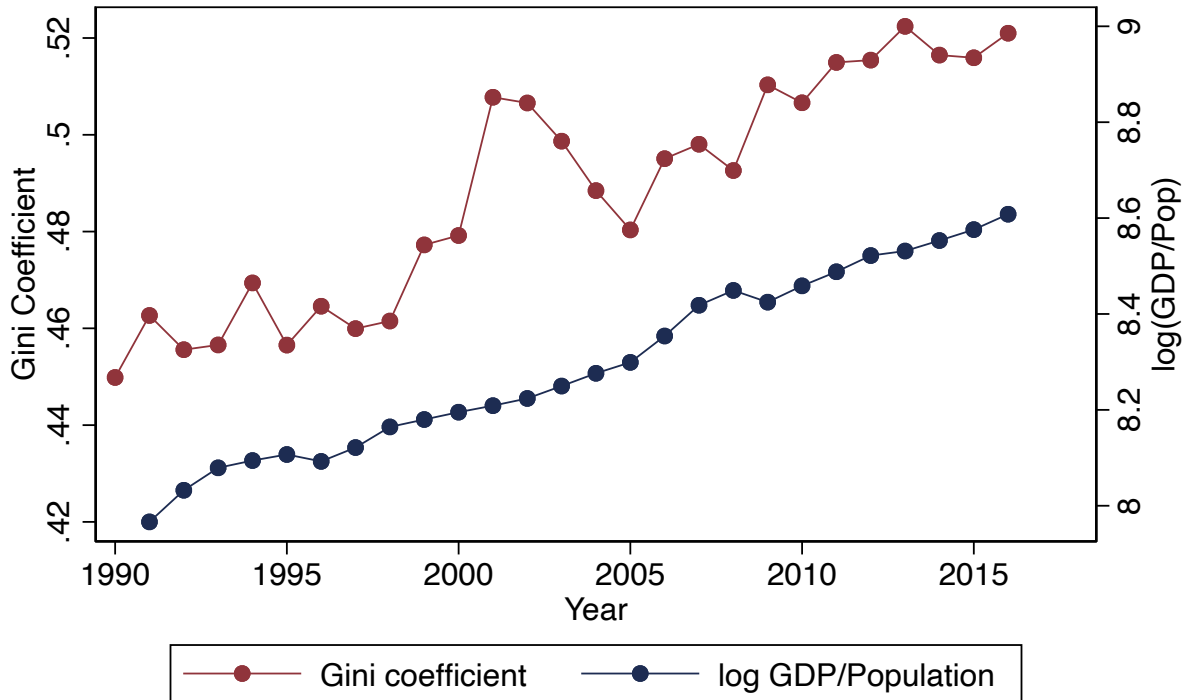
Notes: own computation on official data from Programa Estado Nacion (PEN) and Central Bank (BCCR).

FIGURE 7: Increase of income inequality at the national level

district fixed effects.

Our panel data analysis uses controls, as well as the year and district-fixed effects. Each point on the graph is the coefficient of regressions with different specifications. The simplest specification, *no controls*, simply shows the correlation between the dependent variable (e.g., participation) and inequality (e.g., Top 10). The specification, *controls*, includes the index of social development (IDS) and the average income by the district. *Year FE* includes controls plus year fixed effects. *District FE* contemplates controls and district-fixed effects. *Year & District FE* is the most restrictive specification, as it includes controls plus year and district fixed effects. All specifications have been estimated with a panel of 6 elections (2002-2022), and the number of corresponding districts per year (from 462 in 2002 to 486 in 2022).
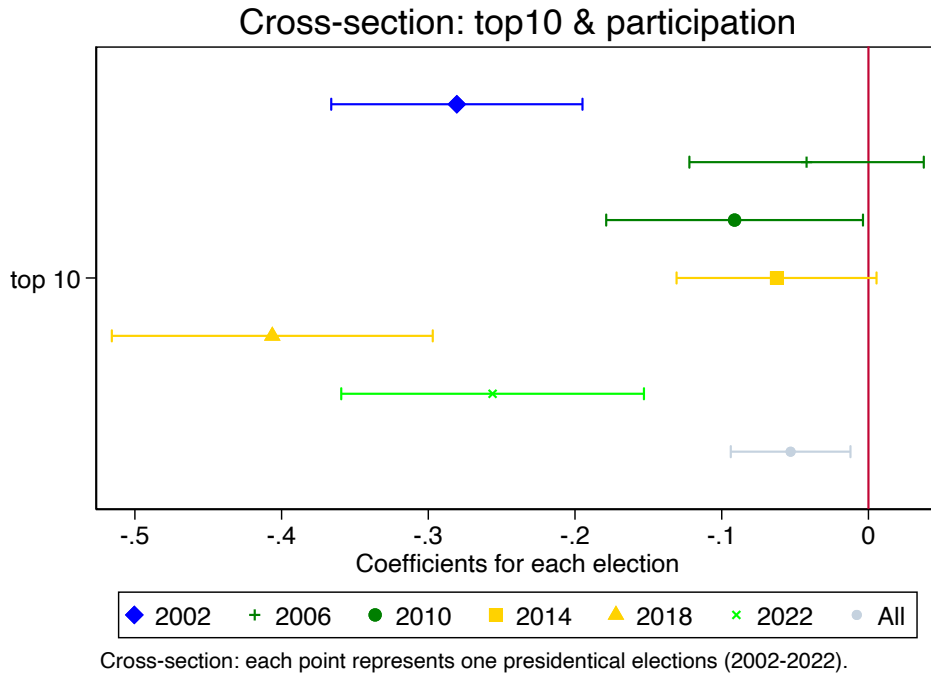
4.1 Turnout

In this Figure 8a, we see that there is an inverse relationship between inequality and participation in most years. In other words, the higher the percentage of total income held by the richest 10 percent, the lower the district's voter turnout. The coefficient is negative and statistically significant in all years, except in 2006, where it shows the same negative sign, but no statistical significance. The aggregate analysis (*All*, light gray dot) confirms the results for each year.

Figure 8b, which are panel regressions with all election years, shows that, in all specifications, except the one without controls, the relationship between inequality and participation is negative and statistically significant (see regression table A.5, in the Appendix). This is a strong result that has been confirmed in several specifications. Although not shown in the graph, this result is significant even when additional controls are included, such as participation in the previous election, voting for traditional parties in the previous election, and a measure of the competitiveness of the current election and competitiveness of the previous election.
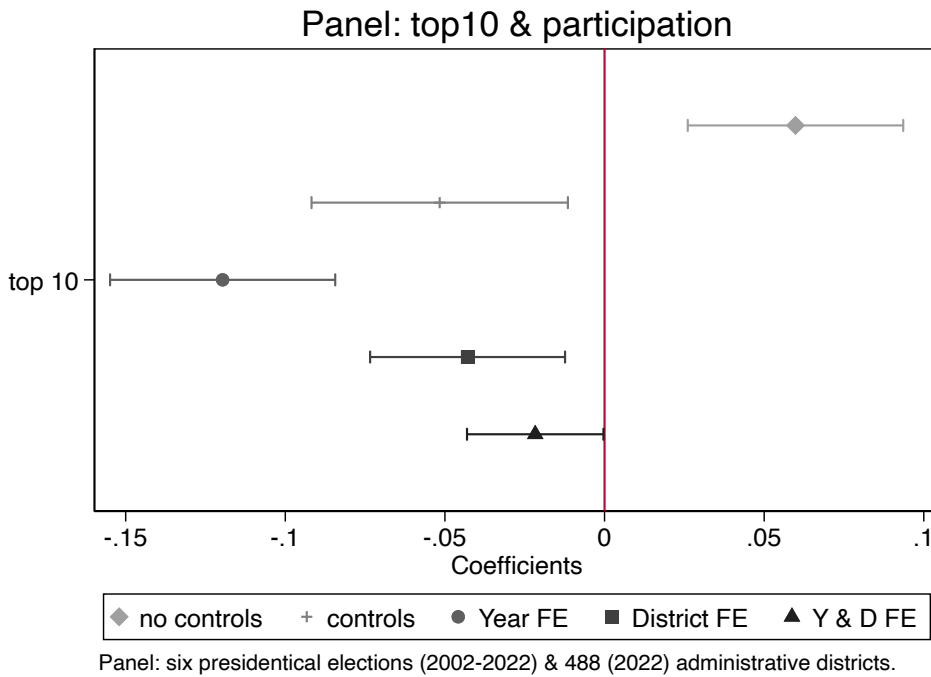
4.2 Electoral volatility

Figure 9 explores the relationship between inequality (*Gini*) and a measure of electoral volatility (*Pedersen Index*). The Pedersen index measures the net change of individual votes by parties in the electoral system (Pedersen, 1979). Therefore, this graph shows that the greater the inequality, the greater the electoral volatility in each district (see regression table A.6, in the Appendix). The sign of the coefficients is always positive, although the last specification does not have the same statistical significance. This result is particularly useful for understanding the factors that influence the surprising support that some new political parties receive sometimes. For example, this result could partially justify the emergence and eventual victory of the PPSD in the 2022 election.

In other words, an increase in electoral volatility motivated by social discontent derived from inequality and other factors may partially explain the emergence of new political forces and the weakening of traditional parties. Eichengreen et al. (2021) explore

Cross-section: top10 & participation

Coefficients for each election

◆ 2002   + 2006   ● 2010   ■ 2014   ▲ 2018   ✕ 2022   ● All

Cross-section: each point represents one presidentical elections (2002-2022).

(a) Cross-sectional regressions

Panel: top10 & participation

Coefficients

◆ no controls   + controls   ● Year FE   ■ District FE   ▲ Y & D FE

Panel: six presidentical elections (2002-2022) & 488 (2022) administrative districts.

(b) Panel regressions

FIGURE 8: Inequality and turnout

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this idea in a different context. Figure A.4 shows aggregate volatility in Costa Rica using the Pedersen Index. It is interesting to note that volatility has been increasing since the 2000s, after a period of extremely low values in the 1980s and 1990s. Hence, the evolution of this outcome coincides with the appearance of the multi-party system in 2002, after the consolidation of the two-party system in the previous two decades.
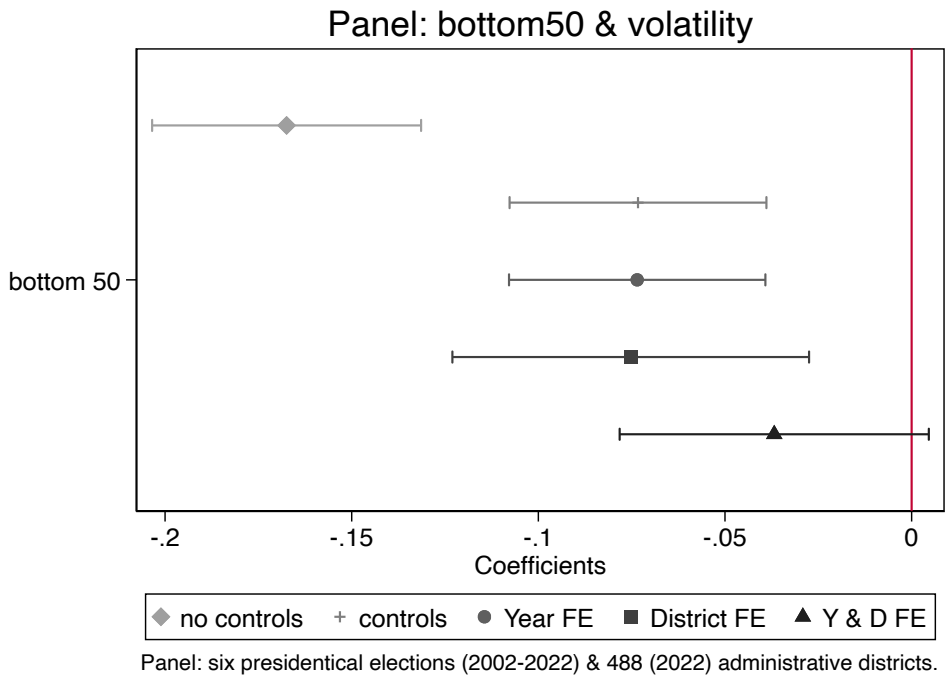
4.3   Vote for traditional parties

Figure 10 shows the relationship between inequality (*Gini*) and the percentage of votes for the traditional parties (PLN and PUSC), in each election. Although the sign of the coefficient does not always go in the same direction as in the previous graph, the analysis for each election is particularly illustrative. Inequality seems to hurt the vote for traditional parties in all elections, except those won by the PAC (2014 and 2018). In other words, in the elections where the PAC obtained greater support, including 2006 where the coefficient is not statistically significant, the vote of the most unequal districts in the country favored the traditional parties. Likewise, in the last election in 2022, where the winner was neither a traditional party nor the PAC, the vote of the most unequal districts significantly punished the traditional parties. See regression table A.7, in the Appendix, for panel regression results.

4.4   Vote for pro-globalization parties

Here we discuss the relationship between inequality at the local level and the level of support for the so-called pro-economic liberalization (*pro-globalization*) parties. Once again, to build this category, those parties that explicitly mention economic liberalism as one of the pillars in their programmatic have been considered pro-globalization (PUSC, ML, PLP, and PPSD). Figure 11 presents a surprising result: pro-globalization parties receive greater electoral support in the most unequal districts of the country (see regression table A.8, in the Appendix).
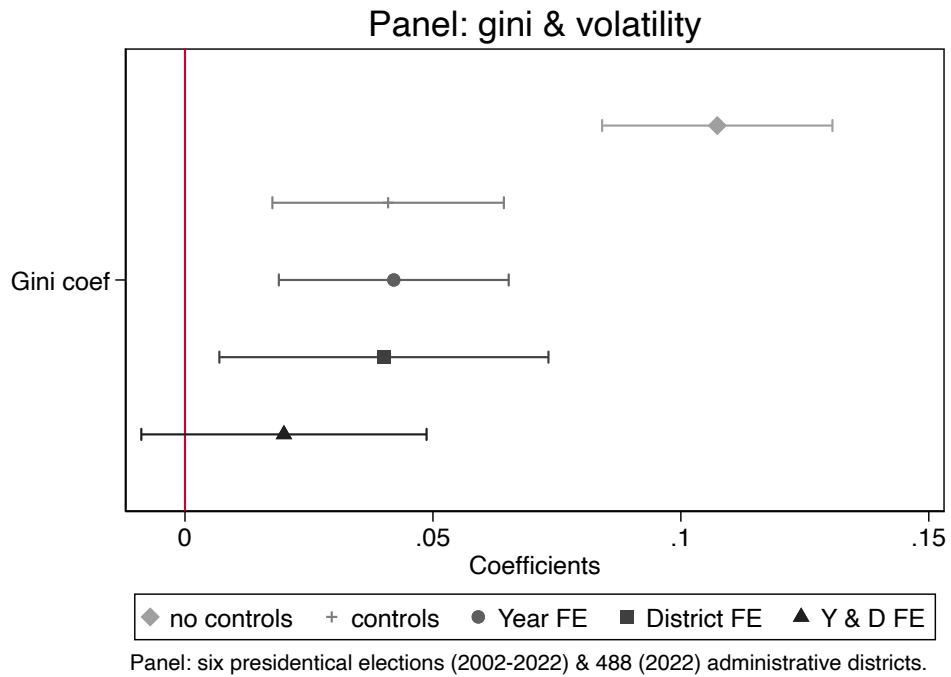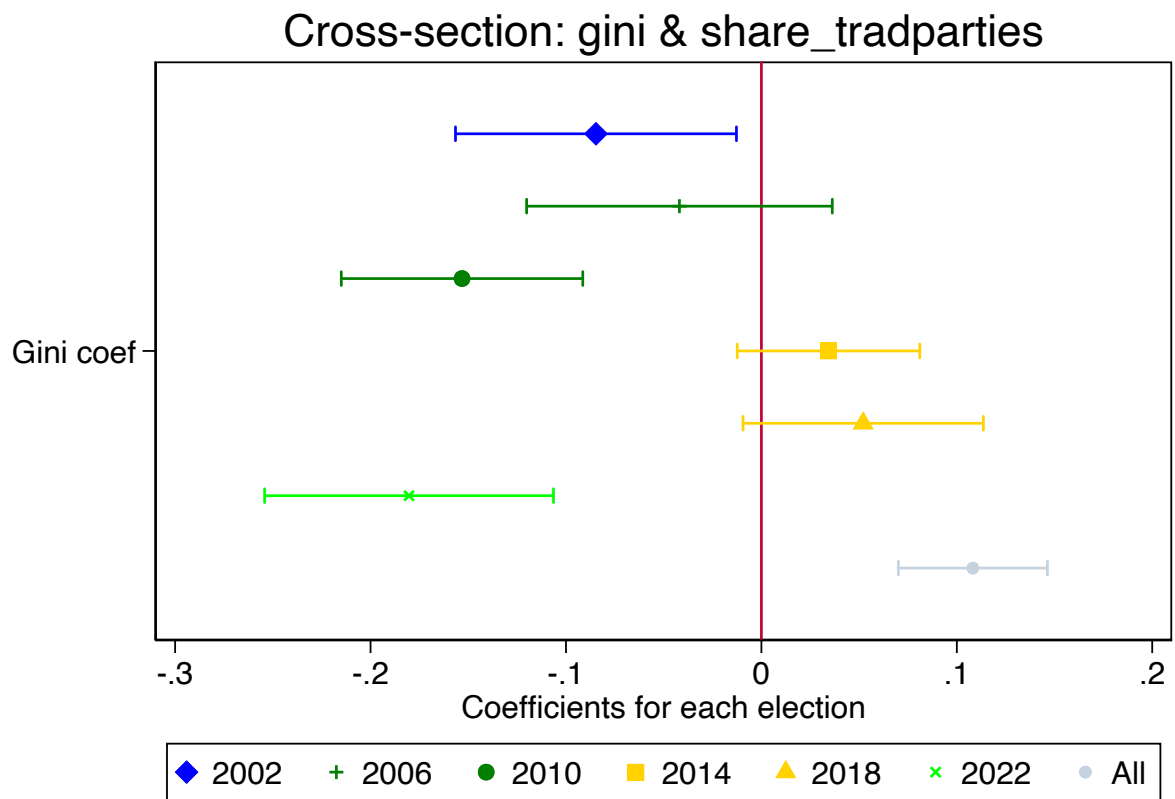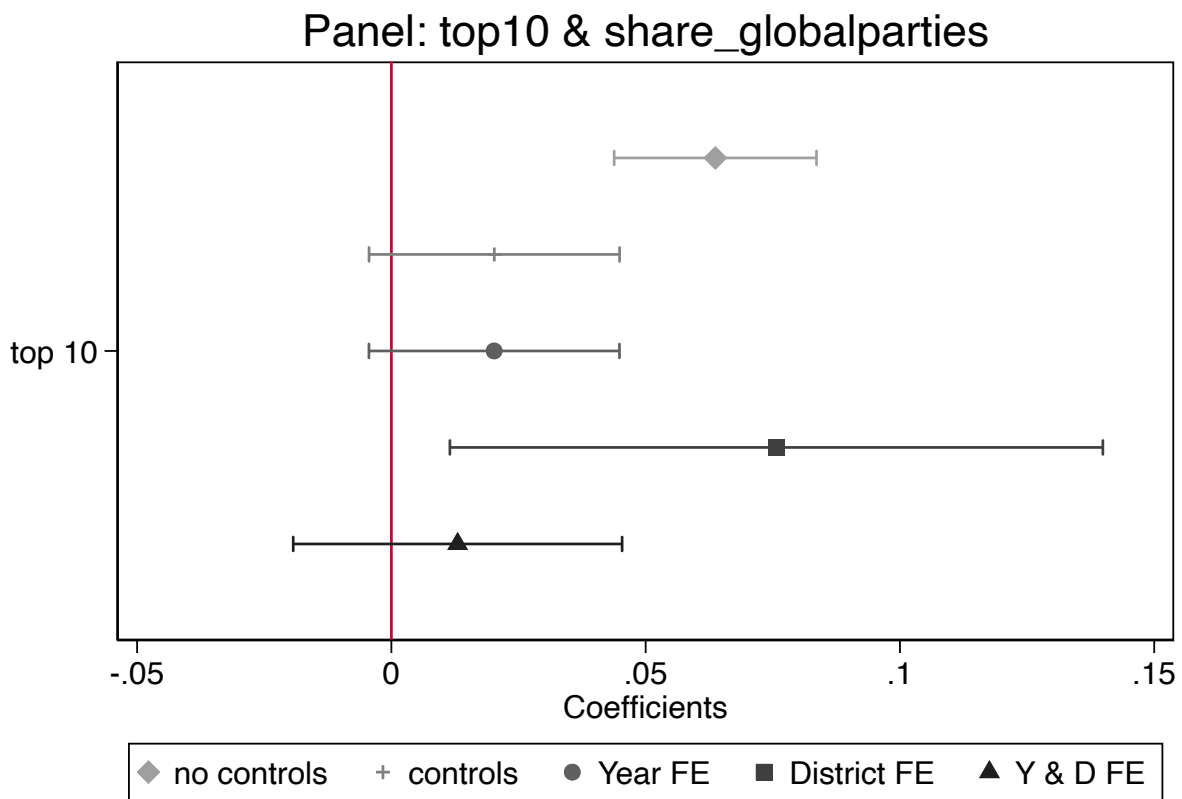
(a) Panel regressions: Gini coefficient

(b) Panel regressions: bottom 50

FIGURE 9: Inequality and electoral volatility

FIGURE 10: Inequality and vote-share for traditional parties

Panel: top10 & share_globalparties

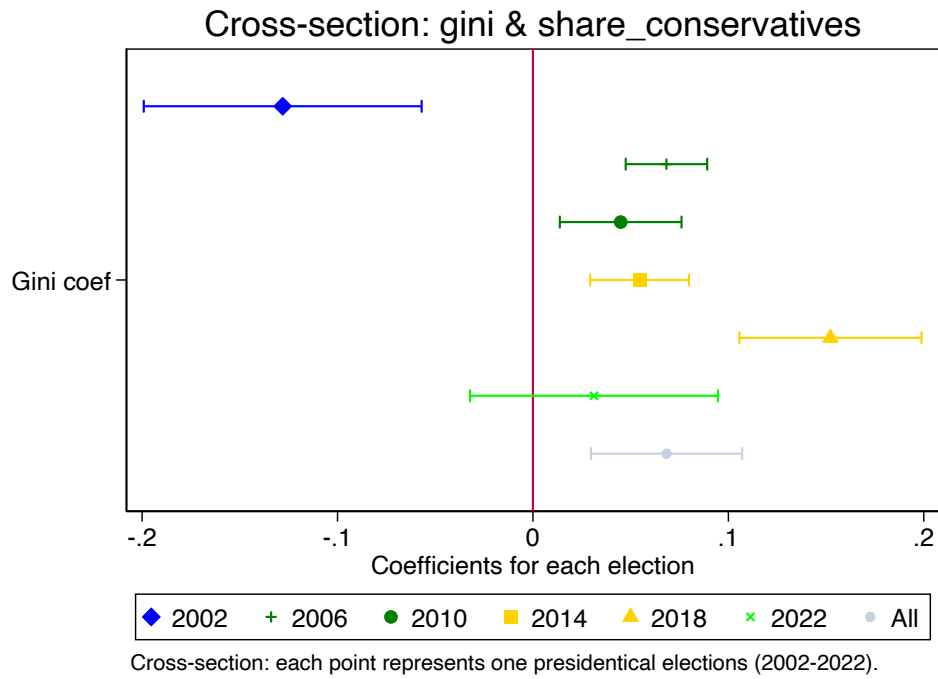FIGURE 11: Inequality and vote-share for pro-globalization parties

4.5 Vote for conservative parties

Here we explore the relationship between inequality and support for conservative parties (PUSC, PRN, PPSD, and NR). To construct this category, those parties that present elements of social conservatism in their programmatic have been considered conservative, although in economic terms they are liberal. In this way, in the two cross-sectional analysis graphs, Figure 12, we observe that the so-called conservative parties receive a higher percentage of votes in the most unequal districts in all elections, except in 2002. The results are statistically significant in all the cases.

The analysis with panel data, Figure 13, presents results consistent with the previous description: in the most unequal districts, the conservative parties obtain a higher percentage of votes (see regression table A.9, in the Appendix). Although the statistical significance is lower with year and district fixed effects (Y & D FE), the sign of the coefficient is consistent with this idea. This result suggests that increasing inequality in Costa Rica is correlated with the growing importance of conservative-religious issues in Costa Rican politics.
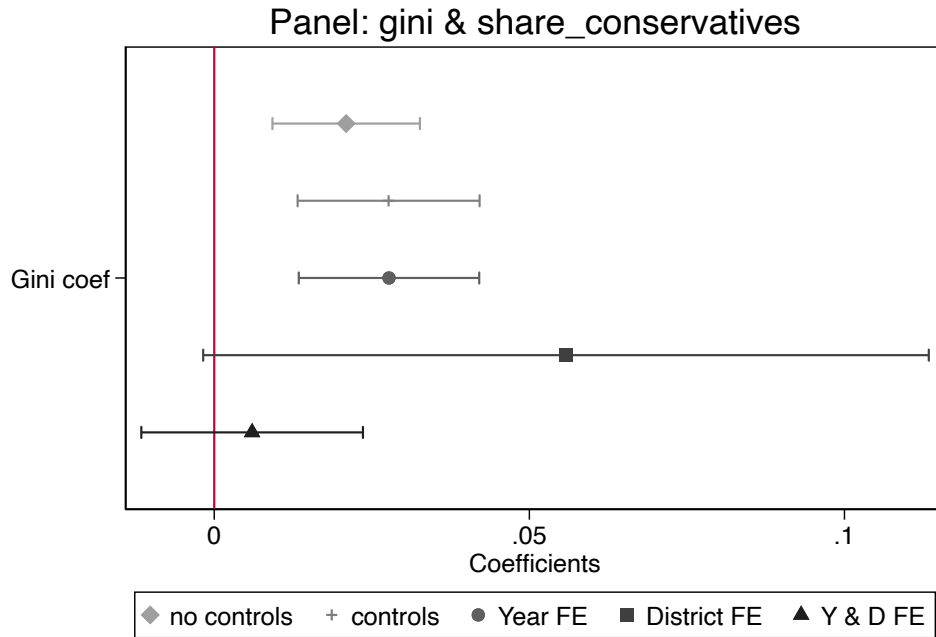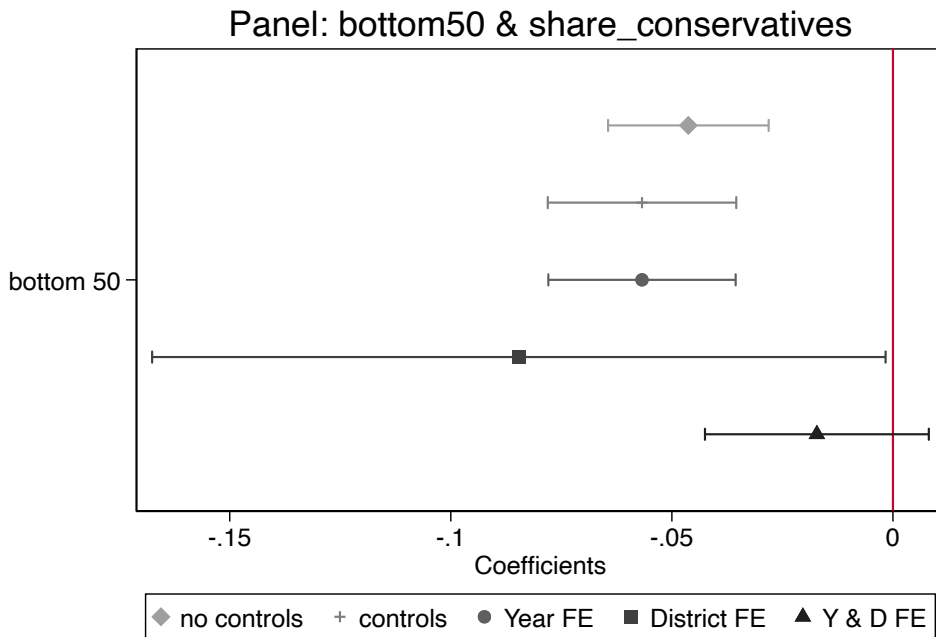
5 Individual-level results

[Pending]

Cross-section: gini & share_conservatives

(a) Gini coefficient

Cross-section: bottom50 & share_conservatives
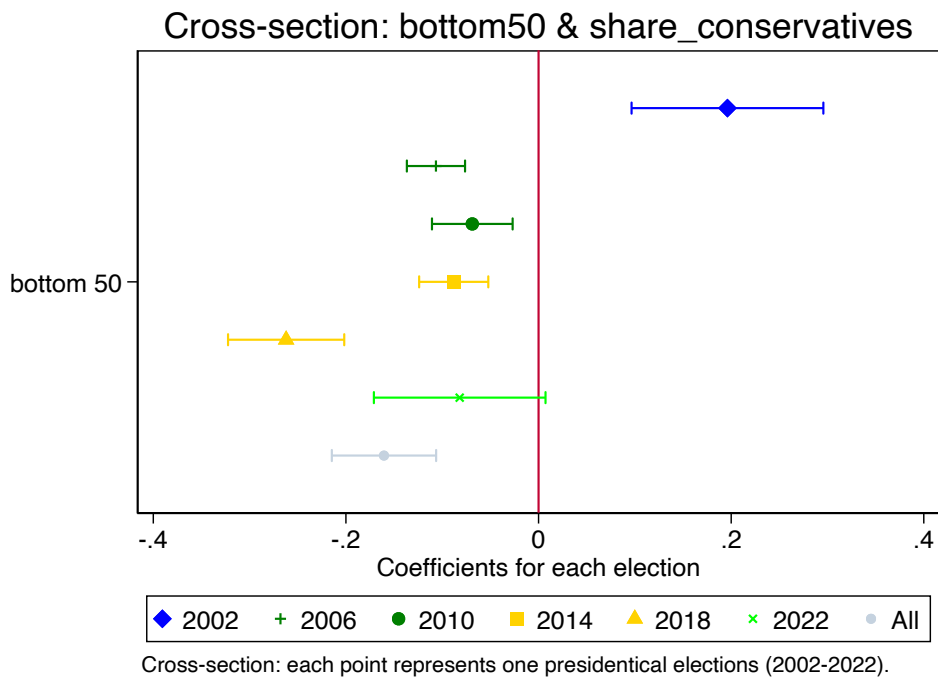
(b) Bottom 50

FIGURE 12: Cross-section: Inequality and vote-share for conservative parties

Panel: gini & share_conservatives

Gini coef

| no controls | + controls | ● Year FE | ■ District FE | ▲ Y & D FE |

Panel: six presidential elections (2002-2022) & 488 (2022) administrative districts.

(a) Gini coefficient

Panel: bottom50 & share_conservatives

bottom 50

| no controls | + controls | ● Year FE | ■ District FE | ▲ Y & D FE |

Panel: six presidential elections (2002-2022) & 488 (2022) administrative districts.

(b) Bottom 50

FIGURE 13: Panel: Inequality and vote-share for conservative parties

6 (Preliminary) concluding remarks

- Strong inverse relation between regional level income inequality and electoral turnout.
  → *less persons vote*

- Correlation between regional level income inequality and electoral volatility. →
  more persons change their votes

- Inverse relation between regional level income inequality and vote for traditional
  parties (stronger in the panel). → *abandon the old political cleavages*

- Strong correlation between regional level income inequality and vote for pro-globalization
  parties. → *economically liberal and socially conservative (?)*

- Strong correlation between regional level income inequality and vote for conserva-
  tive parties. → *new political cleavage (?)*

A   Appendix

| Party name	Acronym	Founded	Ideology	Political position	Won presidential elections
National Liberation Party	PLN	1951	Social democracy / Third Way / Figuerism	*Currently:* Centre to centre-left / *Historically:* Centre-left to left-wing	Yes
Social Christian Unity Party	PUSC	1977*	Christian democracy / Liberal conservatism / Economic liberalism	Centre-right	Yes
Libertarian Movement Party	ML	1994	Libertarian conservatism / Social conservatism / Catholic social teaching / Economic liberalism	Right-wing	No
Citizens' Action Party	PAC	2000	Social democracy / Progressivism / Anti-corruption / Figuerism	Centre-left	Yes
Broad Front	FA	2004	Democratic socialism / Socialism of the 21st century / Progressivism / Environmentalism	Left-wing	No
National Restoration Party	PRN	2005	Conservatism / Social conservatism / Christian right / Anti-immigration	Right-wing	No
Liberal Progressive Party	PLP	2016	Libertarianism / Classical liberalism	Centre-right	No
Social Democratic Progress Party	PPSD	2018	Liberalism / Social conservatism / Economic liberalism	Centre to centre-right	Yes
New Republic Party	NR	2018	Conservatism / Social conservatism / Christian right	Right-wing to far-right	No

* PUSC is the heir of previous alliances with different names active in Costa Rican elections since 1953.

FIGURE A.1: Political Parties: Costa Rica

Box plot ENEP: 25 continuous democracies
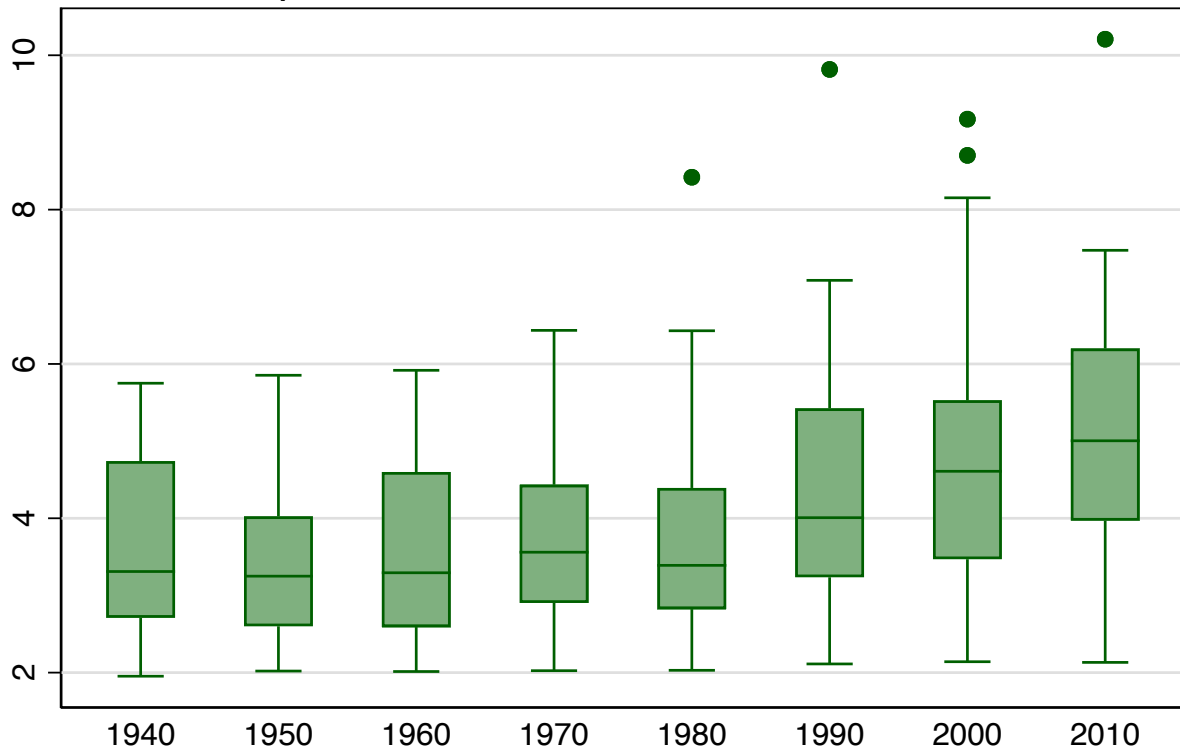
Source: authors' computation using data from Bormann & Golder (2022).

FIGURE A.2: Effective number of electoral parties: 25 continuous democracies
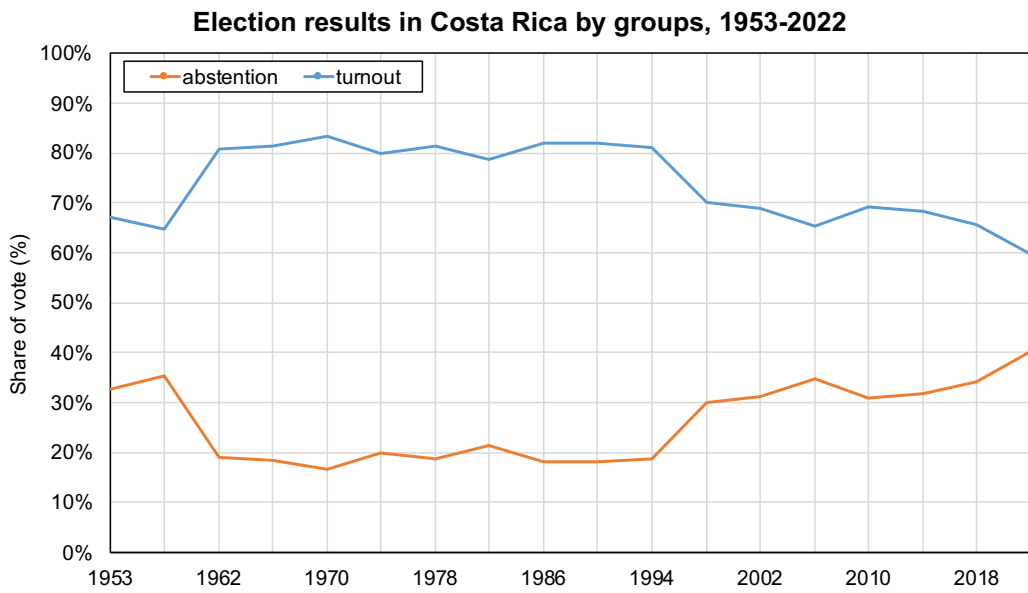
Election results in Costa Rica by groups, 1953-2022

FIGURE A.3: Electoral turnout Costa Rica: 1953 - 2022
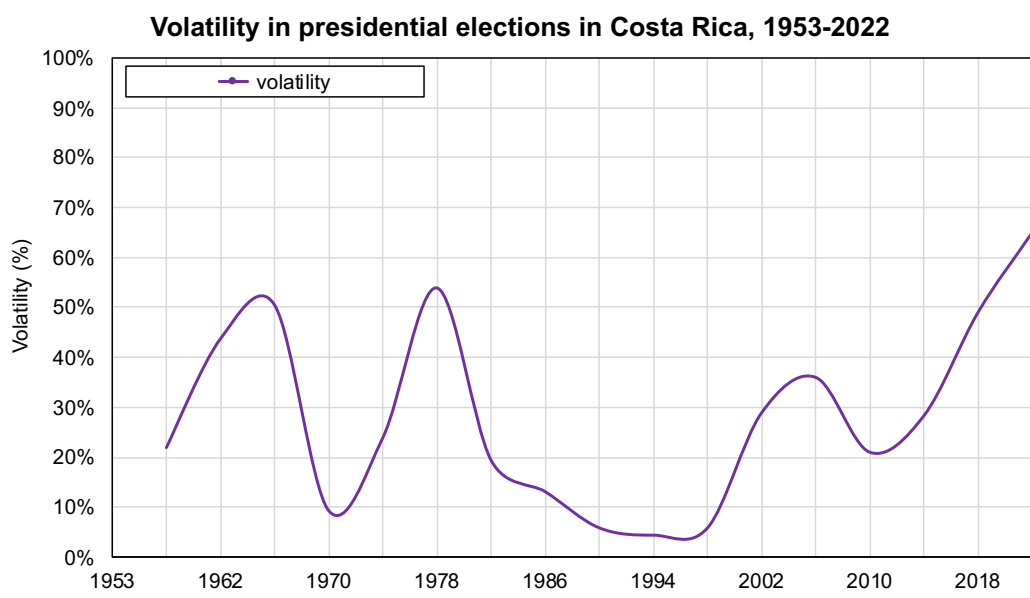
Volatility in presidential elections in Costa Rica, 1953-2022

Source: author's computations using official election results.
Note: the figure shows the share of electoral volatility in presidential elections in Costa Rica between 1953 and 2022. Provisional results for 2022.

FIGURE A.4: Electoral volatility Costa Rica: 1953 - 2022

Effect of inequality on turnout in presidential and local elections: 2002 - 2018

	(1) GLS	(2) GLS controls	(3) GLS FE	(4) GLS FE	(5) GLS FE	(6) GLS	(7) GLS controls	(8) GLS FE	(9) GLS FE	(10) GLS FE
Panel A: effect of inequality on turnout in presidential elections										
district gini	0.015 (0.014)	-0.103*** (0.015)	-0.104*** (0.015)	-0.029*** (0.010)	-0.015* (0.008)					
Top 10						0.049*** (0.018)	-0.096*** (0.020)	-0.120*** (0.019)	-0.030** (0.014)	-0.026** (0.012)
Observations	2338	2325	2325	2325	2325	2338	2325	2325	2325	2325
r2_o	0.000	0.240	0.325	0.861	0.907	0.002	0.236	0.321	0.861	0.907
Panel B: effect of inequality on turnout in local elections										
district gini	-0.307*** (0.023)	-0.292*** (0.030)	-0.215*** (0.029)	-0.114*** (0.024)	-0.066*** (0.020)					
Top 10						-0.398*** (0.032)	-0.360*** (0.040)	-0.242*** (0.038)	-0.124*** (0.036)	-0.048 (0.030)
Observations	1859	1843	1843	1843	1843	1859	1843	1843	1843	1843
r2_o	0.069	0.147	0.261	0.813	0.871	0.068	0.142	0.255	0.812	0.871
Social Development Index (SDI)		YES	YES	YES	YES		YES	YES	YES	YES
log Average Income		YES	YES	YES	YES		YES	YES	YES	YES
Year FE			YES		YES			YES		YES
District FE				YES	YES				YES	YES

Standard errors in parentheses
* p<0.1   ** p<0.05   *** p<0.01

FIGURE A.5: Inequality and turnout

Effect of inequality on electoral volatility in presidential elections: 2002 - 2018 (district level)

	(1) GLS	(2) GLS controls	(3) GLS FE	(4) GLS FE	(5) GLS FE	(6) GLS FE
Panel A: effect of inequality (Gini) on turnout in presidential elections						
district gini	0.246***	0.204***	0.204***	0.139***	0.061	0.132***
	(0.027)	(0.028)	(0.028)	(0.024)	(0.046)	(0.042)
Observations	2328	2303	2303	2301	2303	2301
r2_o	0.022	0.010	0.222	0.419	0.486	0.562
Panel B: effect of inequality (Bottom 50) on turnout in presidential elections						
Bottom 50	-0.431***	-0.349***	-0.350***	-0.221***	-0.013	-0.170***
	(0.044)	(0.044)	(0.044)	(0.038)	(0.066)	(0.061)
Observations	2328	2303	2303	2301	2303	2301
r2_o	0.019	0.017	0.226	0.419	0.485	0.562
Social Development Index (SDI)		YES		YES	YES	YES
log Average Income		YES		YES	YES	YES
Turnout presidential (t-1)				YES		YES
Year FE			YES	YES	YES	YES
District FE					YES	YES

Standard errors in parentheses

* p<0.1   ** p<0.05   *** p<0.01

FIGURE A.6: Inequality and electoral volatility

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Effect of inequality on vote share for traditional parties in presidential elections: 2002 - 2018 (district level)

	(1) GLS	(2) GLS controls	(3) GLS FE	(4) GLS FE	(5) GLS FE	(6) GLS FE
Panel A: effect of inequality (Gini) on vote share for traditional parties in presidential elections						
district gini	-0.256***	-0.309***	-0.310***	-0.197***	-0.056	-0.096**
	(0.033)	(0.037)	(0.037)	(0.031)	(0.041)	(0.040)
Observations	2317	2302	2302	2300	2302	2300
r2_o	0.006	0.193	0.665	0.765	0.894	0.901
Panel B: effect of inequality (top 10) on vote share for traditional parties in presidential elections						
top 10	-0.215***	-0.287***	-0.297***	-0.234***	-0.165***	-0.176***
	(0.033)	(0.040)	(0.039)	(0.032)	(0.042)	(0.040)
Observations	2317	2302	2302	2300	2302	2300
r2_o	0.013	0.191	0.663	0.767	0.895	0.902
Social Development Index (SDI)		YES		YES	YES	YES
log Average Income		YES		YES	YES	YES
Turnout presidential (t-1)			YES	YES	YES	YES
Year FE				YES	YES	YES
District FE					YES	YES

Standard errors in parentheses

* $p<0.1$ ** $p<0.05$ *** $p<0.01$

FIGURE A.7: Inequality and vote for traditional parties

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Effects of inequality on pro-globalization parties in presidential elections, 2002-2018 (district level)

	(1) GLS	(2) GLS controls	(3) GLS FE	(4) GLS FE	(5) GLS FE	(6) GLS FE
Panel A: Effect of inequality (Gini) on pro-globalization parties in presidential elections						
district gini	0.088***	0.105***	0.105***	0.115***	0.162***	0.151***
	(0.020)	(0.022)	(0.022)	(0.022)	(0.034)	(0.034)
Observations	2317	2302	2302	2300	2302	2300
r2_o	0.001	0.188	0.748	0.750	0.849	0.850
Panel B: Effect of inequality (Bottom 50) on pro-globalization parties in presidential elections						
Bottom 50	-0.160***	-0.176***	-0.176***	-0.197***	-0.201***	-0.179***
	(0.033)	(0.034)	(0.034)	(0.034)	(0.048)	(0.049)
Observations	2317	2302	2302	2300	2302	2300
r2_o	0.005	0.185	0.749	0.751	0.848	0.849
Social Development Index (SDI)		YES	YES	YES	YES	YES
log Average Income		YES	YES	YES	YES	YES
Turnout presidential (t-1)				YES		YES
Year FE			YES	YES	YES	YES
District FE					YES	YES

Standard errors in parentheses

* p<0.1   ** p<0.05   *** p<0.01

FIGURE A.8: Inequality and vote for pro-globalization parties

Effects of inequality on conservative parties in presidential elections, 2002-2018 (district level)

	(1) GLS	(2) GLS controls	(3) GLS FE	(4) GLS FE	(5) GLS FE
Panel A: Effect of inequality (Gini) on consevative parties in presidential elections					
district gini	0.021***	0.028***	0.028***	0.056*	0.006
	(0.006)	(0.007)	(0.007)	(0.029)	(0.009)
Observations	2822	2805	2805	2805	2805
r2_o	0.003	0.042	0.916	0.381	0.943
Panel B: Effect of inequality (Bottom 50) on conservative parties in presidential elections					
Bottom 50	-0.046***	-0.057***	-0.057***	-0.085**	-0.017
	(0.009)	(0.011)	(0.011)	(0.042)	(0.013)
Observations	2822	2805	2805	2805	2805
r2_o	0.005	0.022	0.916	0.381	0.943
Social Development Index (SDI)		YES	YES	YES	YES
log Average Income		YES	YES	YES	YES
Year FE			YES		YES
District FE				YES	YES

Standard errors in parentheses

* p<0.1   ** p<0.05   *** p<0.01

FIGURE A.9: Inequality and vote for conservative parties

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