Turning Away from the State: Trade Shocks and Informal Insurance in Brazil*

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Abstract

How does economic globalization affect vote choices? Conventional wisdom holds that voters who lose from economic integration support parties that propose expanding the welfare state. However, in the Global South, where the state is frequently weak or under-resourced, people often turn to non-state organizations (such as churches) for protection against economic decline. I argue that, in these contexts, negative globalization shocks increase local communities' dependence on non-state organizations, thereby making the leaders within such organizations more effective political brokers. To test this argument, I propose a shift-share instrument that measures the exposure of Brazilian local labor markets to exogenous changes in exports. By matching this instrument with electoral and survey data, I provide evidence that declining exports increased the power of evangelical leaders to persuade their congregations to vote against parties that favor welfare-state expansion. My findings help explain and describe the contingencies underlying the political consequences of globalization.

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1 Introduction

Although globalization promises new opportunities for economic growth, exposure to international markets can create contentious domestic inequalities. Ruggie (1982) famously hypothesized that the development of a stronger state-funded safety net can mitigate such inequalities. By socializing the gains and losses of globalization, the state would have the power to make globalization politically feasible. Underlying this argument is the idea that communities affected by negative globalization shocks would become more supportive of redistribution and welfare programs. Some studies in developed countries have supported Ruggie's expectations (e.g., Scheve and Slaughter, 2004; Walter, 2010; Scheve and Serlin, 2022), whereas others have shown that globalization shocks can also generate demands for other types of political platforms, such as authoritarianism, nationalism, and far-right populism (Ballard-Rosa et al., 2021; Colantone and Stanig, 2018*a*,*b*; Ahlquist, Copelovitch and Walter, 2020; Autor et al., 2020; Baccini and Weymouth, 2021; Ballard-Rosa, Jensen and Scheve, 2022). Scholars have speculated that the erosion of the credibility the state's promises to protect citizens against economic crises in developed countries could explain these contrasting findings (Colantone and Stanig, 2019; Scheve and Serlin, 2022).

Relatedly, scholarship has long recognized that the way globalization shapes redistributive politics depends on domestic institutions (Adsera and Boix, 2002; Rudra, 2002; Rudra and Haggard, 2005; Mares, 2005; Nooruddin and Rudra, 2014; Rudra and Tobin, 2017). Although in developed countries low levels of state credibility may be a new phenomenon, in many developing countries this has been the norm (Rudra, 2002; Holland, 2018). The literature thus far has focused largely on developed countries (for recent reviews, see Rodrik, 2021; Walter, 2021),[1] with little attention paid to how globalization shapes preferences where there is heavy reliance on non-state organizations for compensation and insurance against economic downturn. For this reason, I turn my attention to the Global South, where reliance

[1] A strand of literature examines the effects of trade and financial integration on the fate of incumbents in developing countries (Campello and Zucco Jr, 2016; Tertytchnaya et al., 2018; Campello and Zucco, 2020; Novaes and Schiumerini, 2021; De Vries et al., 2024).

on non-state service providers (NSPs), such as religious organizations,[2] is widespread (Gough et al., 2004; Cammett and MacLean, 2014). Previous work has demonstrated that NSPs leverage the services and goods they provide to influence elections and redistributive politics (Cammett and MacLean, 2014; Thachil, 2014). I argue that global economic busts can increase voters' dependence on NSPs, thereby increasing their ability to shape electoral results by acting as political brokers. Ultimately, voters' reliance on NSPs helps explain why globalization does not always translate into higher support for state-led insurance and redistribution.

I evaluate this argument in the context of Brazil, the fourth largest democracy and twelfth largest economy in the world. In the 2010s, lower growth in OECD countries caused a sharp decline in Brazilian exports (Cooney and Marquez, 2016). Specifically, Brazilian exports declined from a peak of USD$170 billion in 2011 to USD$120 billion in 2015, a drop of 29%.[3] This is also the period when the main center-left party, the Workers' Party (*Partido dos Trabalhadores*, PT) lost public support after holding the presidency for 13 years (from 2003 to 2016). Despite the fact that the PT implemented social policies that strengthened the safety net available to poor voters (Arretche, 2019),[4] anti-PT sentiment surged in the 2010s, when economic growth slowed (Samuels and Zucco, 2018). This process culminated with the impeachment of President Dilma Rousseff (PT) in 2016 and the election of a far-right populist president in 2018: Jair Bolsonaro. His political platform combined public spending cuts and the promotion of conservative values (Hunter and Power, 2019; Nicolau, 2020). Although this phenomenon has multiple causes, I posit that part of the explanation lies in the role of NSPs and their leaders. Specifically, I focus on evangelical churches as NSPs and the resulting political power of evangelical pastors.

Evangelical churches emerged as an important source of material support for poor voters

[2]Besides religious organizations, other examples of NSPs are non-governmental organizations and families (Di Tella and MacCulloch, 2002; Cammett, 2014; Bueno, 2018).

[3]These figures are computed in constant 2010 USD.

[4]The expansion of state-led social insurance in Brazil described here was part of a broader trend in Latin America countries governed by left-wing parties during the 1990s and 2000s (Carnes and Mares, 2014, 2015; Kapiszewski, Levitsky and Yashar, 2021).

in Brazil and other Latin American countries in the last three decades (Spyer, 2020; Boas, 2023). I hypothesize that the decline in exports caused members of evangelical churches to become more dependent on services and goods provided by their churches. Because pastors have discretion over the distribution of goods and services, congregants became more engaged with their religious communities in order to signal commitment, thereby increasing their exposure to political messages by evangelical leaders, who became increasingly anti-PT in the 2010s.

To examine this argument, I rely on multiple data sources. First, a descriptive analysis of an original survey provides evidence that evangelical churches in Brazil function as NSPs. Next, in my main analysis, I combine electoral, labor market, trade, and census data to analyze how the decline in exports affected voting behavior in two consecutive presidential elections in Brazil (2014 and 2018) in commuting zones (CZs)[5] with different levels of evangelical population concentration. To this end, I follow recent research in political science and economics (e.g., Campello and Urdinez, 2020; Baccini and Weymouth, 2021; Scheve and Serlin, 2022), by exploiting plausibly exogenous variation in trade patterns in a shift-share design (Bartik, 1987; Autor, Dorn and Hanson, 2013). Specifically, I construct a measure of the exposure of CZs to the dramatic drop in Brazilian exports between 2011 and 2018 based on the labor market specialization of CZs in the pre-shock period (i.e., the export shock). Aware of recent developments in shift-share designs (Adão, Kolesár and Morales, 2019; Goldsmith-Pinkham, Sorkin and Swift, 2020; Borusyak, Hull and Jaravel, 2018), I conduct a series of tests and robustness checks to examine threats to inference.

I show that heterogeneity exists in the responses to the decline in exports across Brazilian CZs. Consistent with the expectations of the economic voting literature (e.g., Healy and Malhotra, 2013; Campello and Zucco, 2016, 2020), the PT lost support in regions negatively affected by the decline in exports. However, when evangelical pastors coordinated their

[5]Brazilian microregions are defined by the Brazilian Institute of Geography and Statistics according to the integration of local economies, which has been interpreted as the equivalent of local labor markets or commuting zones (Dix-Carneiro, 2014; Costa, Garred and Pessoa, 2016). My unit of analysis is microregions, which I refer to as CZs for simplicity.

political position, this effect was driven by CZs with a high concentration of evangelicals. I also show that other CZs' characteristics correlated with the presence of the evangelical population do not explain these results. Turning to the parties' political platforms, I provide evidence that exposure to the decline in exports benefited parties that lean to the right, defend traditional moral values, and oppose state-led redistribution more in regions with a high concentration of evangelicals.

Analyzing geocoded survey data from 2017 matched with the export shock, I provide evidence that right-wing parties benefited from the decline in exports as a result of evangelical pastors' political persuasion and not because of a change in attitudes toward economic and second-dimension issues among the evangelical electorate. In fact, among evangelicals, a decrease in exports increased both engagement with religious communities and negative attitudes toward the PT. I find no evidence that the export shock affected support for redistribution or attitudes toward second-dimension issues (e.g., LGBTQIA+ rights) among evangelicals. These findings are consistent with my hypothesis that negative globalization shocks increase evangelicals' engagement with their religious communities as a way to insure against economic losses, which in turn increases the persuasive power of pastors.

My contribution is threefold. First, I add to the literature on public opinion responses to globalization shocks (e.g., Margalit, 2011; Walter, 2017*a*; Margalit, 2019*b*; Colantone and Stanig, 2018*a*,*b*; Scheve and Serlin, 2022). Scholars have highlighted how long periods of austerity in Europe eroded left-wing parties' pledges to strengthen state-led safety nets (Colantone and Stanig, 2019; Cremaschi et al., 2022). I expand this research by showing how the translation of globalization grievances into political behavior can depend on the presence of NSPs and their connections with different parties. Second, I contribute to the literature on redistribution preferences and support for pro-redistribution parties (e.g., Iversen and Soskice, 2001; Levitsky, 2003; Mares, 2005; Scheve and Stasavage, 2006; Huber and Stanig, 2011; Beramendi and Rehm, 2016; Holland, 2018; Tuñón, 2019; Cavaillé, 2023) by highlighting the importance of NSPs in shaping attitudes and electoral outcomes in times of economic crises.

Third, I inform the debate on the material and non-material (e.g., cultural and psychological) roots of political behavior (e.g., Shayo, 2009; Margalit, 2019*b*; Suryanarayan, 2019; Ahlquist, Copelovitch and Walter, 2020; Cremaschi, Bariletto and De Vries, 2023; Hopkins, Margalit and Solodoch, 2024) by providing additional evidence that the importance of religious narratives and practices in shaping voting behavior is not divorced from individual material needs (Cammett and Issar, 2010; Thachil, 2014; Cammett and MacLean, 2014).

The rest of this paper proceeds as follows. First, I review theories on how globalization affects demand for state-led insurance and compensation. Next, I discuss how to incorporate NSPs, including religious organizations, into these theories. Then, I describe the Brazilian political and economic context in the 2010s. I continue by outlining the data and empirical strategy, which I follow by describing the main results and evaluating the mechanisms. In conclusion, I discuss the implications of this study for the literature on globalization, demand for redistribution, and the material roots of political behavior.

2 Globalization and Demand for Social Spending

Trade integration can be risky because it exposes countries to the ups and downs of international business cycles that are beyond their control. These risks are not evenly distributed within any given country, as some regions may depend more on trade than others. This means that potential economic losses from global downturns may be concentrated in some parts of a country more than others (Rodrik, 1998). For example, in recent decades, the job and income losses in developed countries caused by import competition from developing countries (especially China) has been concentrated in regions specialized in light manufacturing, such as the Rust Belt in the US (Autor, Dorn and Hanson, 2016; Pierce and Schott, 2016; Malgouyres, 2017). In developing countries, fluctuations in the prices of agricultural and mineral commodities historically have led to economic instability (e.g., Mendoza, 1995; Drechsel and Tenreyro, 2018).

Because integrating into the global economy comes with heightened economic risks for some communities, globalization can lead to social unrest and political instability. In fact, negative globalization shocks have been linked to dissatisfaction with mainstream political elites and, in extreme cases, regime change (Campello and Zucco, 2016, 2020; Colantone and Stanig, 2018*b*,*a*; Margalit, 2019*a*; Novaes and Schiumerini, 2021; Rickard, 2022). In addition, as individual dissatisfaction with economic losses intensifies through interactions within local social networks (Colombo and Dinas, 2023), grievances resulting from localized economic shocks, such as trade shocks, may have a relatively greater potential to generate political instability than economic changes that are more geographically diffused. As such, some scholars have argued that economic globalization can be made politically feasible if coupled with publicly funded compensation or insurance mechanisms. They have argued that higher levels of public spending on welfare programs and stable public jobs can help smooth out the effects of fluctuations in international markets on individual consumption (Cameron, 1978; Katzenstein, 1987; Ruggie, 1982; Rodrik, 1998).

Evidence for the "compensation hypothesis" is mixed, however. Whereas some studies have found that economic globalization is associated with higher public spending (e.g., Rodrik, 1998; Avelino, Brown and Hunter, 2005; Xu, 2020; Petrova and Sznajder Lee, 2023), others have found support for a competing hypothesis: the "efficiency hypothesis." These scholars expect competition in global markets to induce a race to the bottom in government spending (Garrett, 1995; Kaufman and Segura-Ubiergo, 2001; Rudra, 2008; Busemeyer, 2009). What explains such divergent findings? Scholars have pointed out that contextual and institutional characteristics shape governments' ability and incentives to compensate the losers of globalization. For example, rulers in "hard" authoritarian countries are insulated from public pressure and, as a result, are less likely to compensate the losers of globalization than rulers in democratic and intermediate regimes (Rudra, 2002).

Underlying the "compensation hypothesis" is the idea that individuals who are more exposed to the risks and losses of globalization will demand more social protection from

governments. However, empirical evidence for such a microfoundation of the "compensation hypothesis" is also mixed. In certain contexts, economic globalization is linked to greater popular support for welfare spending (Hays, Ehrlich and Peinhardt, 2005; Rehm, 2009; Walter, 2010, 2017*b*; Rehm, 2016; Scheve and Serlin, 2022), whereas in other cases, it increased support for protectionist, nationalistic, and authoritarian political platforms (e.g., Ballard-Rosa et al., 2021; Colantone and Stanig, 2018*b*; Baccini and Weymouth, 2021). For example, Colantone and Stanig (2019) argued that prolonged periods of austerity in Western European countries led voters to distrust the promises of left-wing parties to increase public spending, pushing voters to support other types of *state-led solutions*. Some examples of such solutions in the European context are higher tariffs and immigration restrictions (Colantone and Stanig, 2018*c*; Cremaschi et al., 2022).

Importantly, most of the evidence on the microfoundations of the compensation hypothesis comes from advanced industrialized nations and assumes that welfare spending is redistributive (Rudra and Tobin, 2017). However, in many countries of the Global South, social spending is regressive and does not protect those most in need (Rudra, 2008). Moreover, in Latin America and other regions of the Global South, the state is typically plagued by low administrative capacity and lacks credibility in voters' eyes (Holland, 2018; Brinks, Levitsky and Murillo, 2019). In these contexts, people are used to resorting to non-state institutions to cope with economic losses and risks (Cammett and MacLean, 2014; Post, Bronsoler and Salman, 2017). In the next section, I discuss the opportunities for insurance and compensation beyond the state voters usually have in developing countries and what their political consequences might be.

3 Compensation and Insurance Beyond the State

Social benefits in developing countries tend to be less generous than in developed countries. In addition, welfare services are often absent in remote areas, and social benefits in many

countries are designed to support the middle class rather than the poor (Rudra, 2008). For example, in Latin America, social spending is concentrated on contributory benefits for formal sector workers, subsidies tend to be flat or regressive, and informal access barriers make it difficult for the most vulnerable to attain state benefits (Holland, 2018). In addition, in many developing countries, states lack the capacity to implement social policies (Mares, 2005). A consequence of the state's failure to provide adequate insurance and compensation against adverse life events is the emergence of hybrid systems of service provision, in which a formal welfare regime run by the state coexists with an informal insurance system consisting of non-state service providers (NSPs) (Gough et al., 2004; Cammett, 2014; Post, Bronsoler and Salman, 2017). Examples of such NSPs include within-family transfers, services, and goods provided by gangs, civic organizations, and churches (Iannaccone, 1998; Di Tella and MacCulloch, 2002; Cammett and MacLean, 2014; Doyle, 2015; Holland and Palmer-Rubin, 2015; Bueno, 2018; Tertytchnaya et al., 2018; Auriol et al., 2020; De Vries et al., 2024).

Like any other type of insurance provider, informal insurance providers face the challenges of adverse selection and moral hazard. To mitigate these challenges, NSPs can create tight communities and discretionary benefit provision systems. By establishing strict entry requirements, tight communities avoid letting in too many high-risk members (which reduces adverse selection issues) (Iversen and Rehm, 2022). Furthermore, by monitoring members through repeated interactions and enforcing reciprocity norms through the discretionary allocation of benefits, informal insurance providers reduce the moral hazard problem. For example, Di Tella and MacCulloch (2002) argued that families are better positioned to monitor the extent to which unemployed family members are putting forth effort into finding a job than the state.

When the distribution of benefits is at the discretion of a few individuals, it creates hierarchical relationships that can be exploited for political influence (Gough et al., 2004). For example, Thachil (2014) showed how grassroots organizations in India gain the trust and gratitude of poor voters by offering rudimentary health and education services. During

election periods, leaders of these grassroots organizations leverage these ties with poor constituencies to gain votes for elite parties that oppose programmatic redistribution. Similarly, Holland and Palmer-Rubin (2015) showed how in Colombia and Mexico organizational leaders with strong ties to local communities exchanged particularistic and club goods for votes for allied political candidates.

In this study, I argue that non-state service provision plays a crucial role in helping individuals cope with the negative consequences of economic globalization. During global economic crises, many countries in the Global South struggle to finance social security policies amidst lower revenues from commodity exports and the retrenchment of international credit (Wibbels, 2006; Campello, 2014). In this context, the discretionary distribution of benefits by informal insurance providers becomes even more important to communities struggling with economic hardship. As a result, the social standing and influence of these providers increases. My analysis focuses on the case of religious organizations as informal insurance providers.

4 Economic Globalization and the Persuasive Power of Religious Brokers

Among the formal and informal institutions that provide support for people suffering economic hardship, religious organizations have historically played an important role. For example, Ager and Ciccone (2018) showed that in US counties with greater agricultural risk in the 19th century, a larger share of the population belonged to religious organizations. Using data from a US household survey covering years from 1986 to 2000, Dehejia, DeLeire and Luttmer (2007) provided evidence that the effect of income losses on consumption was smaller in households that engaged with religious organizations. Studying Islamic organizations in Indonesia, Chen (2010) showed that religious institutions smoothed consumption but only when other forms of credit were not easily accessible. The authors argued that these

findings support the idea that religious organizations work as an informal insurance mechanism, supporting the idea that religious organizations can work as an informal insurance mechanism.[6]

Compared to other types of NSPs (such as NGOs), religious organizations have the advantage of providing both material and spiritual services (Scheve and Stasavage, 2006). Such spiritual services provide psychological support that can help people cope with income loss and other adverse life events. A study with adolescents in the US supports this idea: religiosity provides a buffer for students at risk of depression that other forms of support networks, such as friends and school activities, fail to provide (Fruehwirth, Iyer and Zhang, 2019). Similarly, an experiment in Tunisia showed that individuals found it comforting to believe that they would receive compensation in the afterlife for the injustices of this life (Grewal et al., 2019).

Religious leaders can use the material and psychological support that religious organizations provide to people who are coping with adverse life events as leverage to exert political influence. Although this practice might resemble clientelism,[7] it differs from it inasmuch as it does not involve a direct quid pro quo in which benefits are exchanged for political support (Thachil, 2014; Freedman, 2020). Instead, the constant provision of material and psychological support that religious organizations provide (in- and outside electoral cycles) creates a bond between leaders and the religious organization's members. To be sure, this bond is, at least to a certain extent, transactional. For example, in a series of experiments in Ghana, Auriol et al. (2020) found that the amount of money members of a Pentecostal church gave to their own church decreased when they enrolled in commercial insurance. This finding suggests that investment in religious organizations is, at least in part, a function of the need for insurance. However, the political influence that religious leaders exert over

[6]However, not all religious organizations work as NSPs. For example McClendon and Beatty Riedl (2021) found that Pentecostal churches in Kenya tended to focus on individual solutions for economic hardship rather than material handouts.

[7]I adopt the widely used definition of clientelism by Stokes (2011), according to whom clientelism refers to the direct exchange of material benefits for political support.

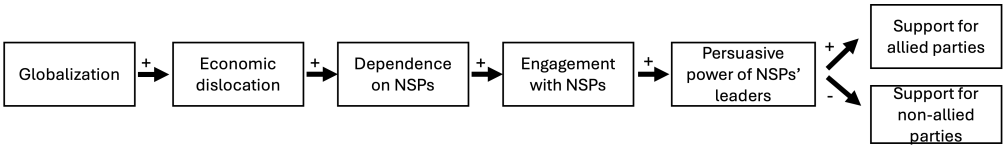
members is a result of the bond they form through the constant provision of services rather than the direct exchange between benefits and votes (such as in the case of vote buying and other clientelistic practices) (Thachil, 2014).[8]

Although most religious organizations provide some type of material or psychological support, they differ considerably in whether and how they discriminate among potential beneficiaries, as well as the generosity of the support they provide. Some religious organizations (such as the Catholic Church) provide benefits to a broad population, regardless of their beliefs or engagement with the church. Other religious organizations, such as many Evangelical churches, are more restrictive, providing services almost exclusively to members who must pass high entry barriers, such as consistent compliance with strict behavioral norms and high investment in religious communities through, for example, frequent church attendance and monetary contributions. As this type of religious organization requires more investment from a limited and engaged group of members, they are better able to monitor their members and provide generous assistance (Iannaccone, 1998).

In this study, I focus on religious organizations that tend to restrict the provision of services to engaged members. I argue that the economic dislocation that globalization causes increases the need for the benefits that religious organizations provide. Because these organizations hand out benefits based not only on need but also on congregants' investment in religious communities, I expect that economic globalization will increase congregants' investment in religious communities, thereby strengthening the bond between members and leaders of religious communities. As a result, religious leaders' ability to influence elections also increases. In Figure 1, I provide a graphic representation of this theory applied to restrictive NSPs, that is, NSPs that have high entry barriers and consider members' levels of engagement when distributing resources.

[8]Some organizations with religious foundations have direct, stable and sometimes institutionalized ties with political parties and organizations. These organizations, referred as "sectarian organizations", employ clientelistic practices by requiring members to attend political meetings, volunteer for a political campaigns, or contribute to a party or candidate through other means (Cammett, 2014).

Figure 1: The Effect of Globalization in the Presence of Restrictive Non-State Service Providers



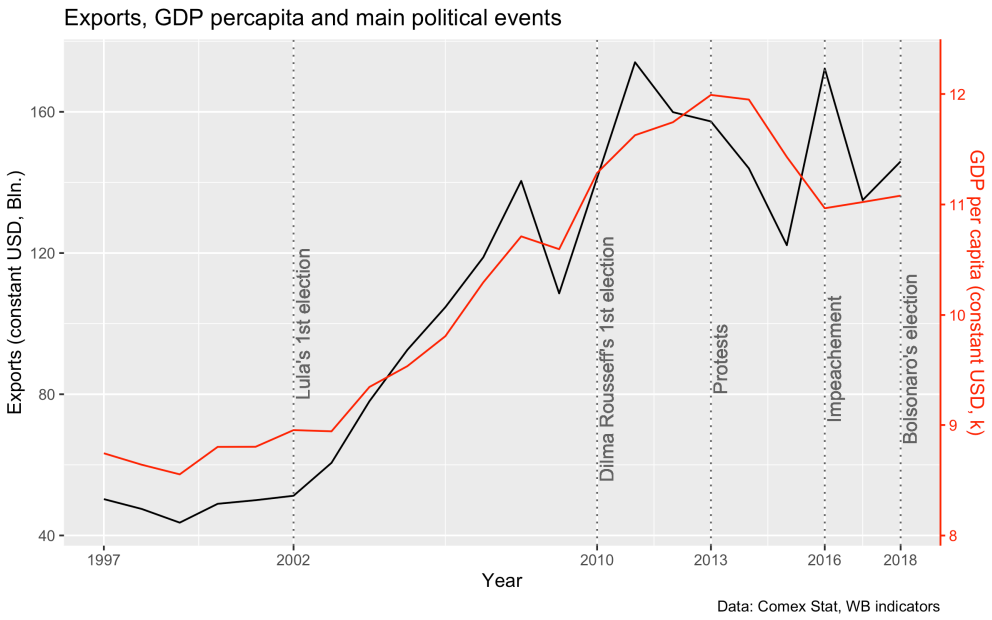
5 The Case of Brazil

Brazil is an ideal case for studying how the effect of globalization shocks on political behavior is mediated by NSPs for two main reasons. First, the complexity and size of the Brazilian economy results in a significant subnational variation of exposure to trade shocks (Dix-Carneiro, 2014; Costa, Garred and Pessoa, 2016). Second, it is a country where non-state organizations – such as churches, gangs, and social movements–historically have played an important role in compensating for the state's failure to provide for the most disadvantaged segments of the population (Lessing and Willis, 2019; Spyer, 2020). These two factors allow me to leverage within-country variation of exposure to trade shocks and reliance on religious insurance to test my argument. In this study, I focus on the period between 2010 and 2018, when Brazil plunged into an economic crisis in part due to changes in global markets (Cooney and Marquez, 2016).

5.1 Brazilian Exports and Politics in the 2010s

After a period of sustained growth, Brazilian exports began to decline sharply in 2012 as a result of low growth in advanced economies and consequently reduced demand for primary goods (Cooney and Marquez, 2016). Figure 2 shows how Brazilian exports to the rest of the world (black line) and GDP per capita (red line) were on a steady upward trend between 1997 (the first year for which data on exports are available) and 2011, followed by a sharp decline in both indicators. Figure B.1a in the Appendix, also shows how important a relatively small number of commodities are to the total value of Brazilian exports. In fact, cereals (mainly soy beans), crude oil, iron ore, meat, and sugar represented about 45% of the total value of

Figure 2: Evolution of Exports and GDP per capita in Brazil (1995-2018)



Note: The black line shows variations in total yearly exports in constant billion USD. The red line shows changes in GDP per capita in constant thousand USD. Export data comes from Comex Stat. Export values are in constant billion USD. GDP per capita data comes from World Bank's World Development Indicators.

Brazilian exports in 2010 (the base year in my analysis).

As a result of the global economic recession, the value of imports from the rest of the world to Brazil decreased. Indeed, reduced economic activity in Brazil drove down the demand for imports of intermediate materials, such as basic chemicals and parts of motor vehicles, which are used in Brazilian manufacturing (see B.1b in the Appendix). Because the decline in imports was due to the general decline in economic activity, rather than changes in import competition, my analysis focuses exclusively on exports.

Political turmoil characterized the period that succeeded the decline in exports in Brazil. Dilma Rousseff (PT) was the president for most of the period considered in this study. She was elected in 2010, as the successor of Lula (PT), a center-left president who ruled the country for eight years. In 2014, Rousseff was reelected by a small margin, just a year after massive demonstrations against her government took place country-wide. She was impeached

in a controversial process in 2016. After her impeachment, the then Vice President Michel Temer (MDB) took office. Jair Bolsonaro (PSL)[9]—a far-right politician, who was unknown by most of the population before the electoral campaign—was later elected in 2018 (for a overview of political events in the period, see Figure 2).

The PT is the organizing force in the Brazilian party system (Samuels and Zucco, 2018), and its importance in presidential elections is paramount. The PT has either won or finished second in all presidential elections since the first post-dictatorship direct presidential election in 1989. In addition, the PT won four consecutive presidential elections (2002, 2006, 2010, and 2014). Thus, even though the PT was not the incumbent party in 2018, positive and negative sentiments toward this party were crucial in defining the election (Nicolau, 2020; Hunter and Power, 2019).

In addition, the PT is considered to be one of the few programmatic parties in the country. Its campaigns and policies historically were marked by a concern for inequality and an effort to promote inclusion, redistribution, and the expansion of the welfare state (Samuels and Zucco Jr, 2014; Samuels and Zucco, 2018). Examples of inclusive policies the PT government promoted include a conditional cash transfer program (*Bolsa Família*) and improved access to higher education (Arretche, 2019; Lindert, Linder and Hobbs, 2007; de Brauw et al., 2015). Despite the PT's focus on redistribution, a substantial number of voters voted against this party when economic conditions quickly deteriorated. In the following, I argue that this was driven, at least in part, by anti-PT mobilization by leaders of evangelical churches that offered goods and services to their congregations.

5.2 Evangelical Churches as Non-State Service Providers

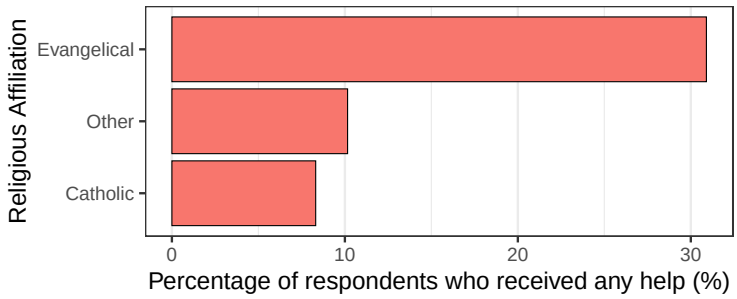
While the PT held the presidency in Brazil, social policies became more inclusive. Policies such as conditional cash transfers and investments in basic infrastructure—including electricity and drinkable water—benefited poor populations, especially in remote rural ar-

[9]Jair Bolsonaro exited the PSL (*Partido Social Liberal*) in 2019.

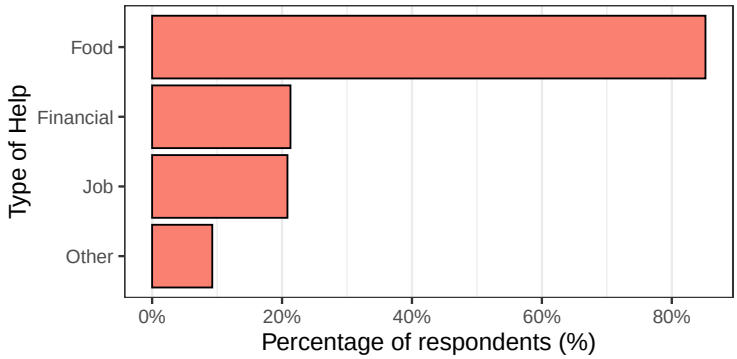
eas (Arretche, 2019). However, many gaps still existed in the Brazilian welfare programs. For example, one of PT's most praised policies is a conditional cash transfer, named *Bolsa Família*. Despite subsequent expansions of the program, in 2010, only 55% of eligible families were receiving the benefit (Campello and Neri, 2014).

Figure 3: Evangelical Churches as Non-Service Providers

(a) Percentage of Respondents that Received Help from a Church by Religion Affiliation



(b) Type of Help Provided by Evangelical Churches



Notes: Panel (a) shows the mean and 95% confidence intervals of the percentage of people by religious affiliation that received help from a church when facing economic hardship. Panel (b) shows the percentage of people that report receiving help from evangelical churches by type of help. The estimates are based on an original online survey with a sample that approximates the Brazilian population in terms of religion, age, gender, and geographic region. More information about this survey can be found in Appendix C.

The historically limited ability of the state to support people facing economic scarcity and the incomplete expansion of social policies create the conditions for informal insurance systems to develop and persist (Gough et al., 2004). In recent decades, evangelical churches have become an increasingly important source of support for people facing adverse life events in Brazil. Based on extensive ethnographic research, Spyer (2020) described how evangelical

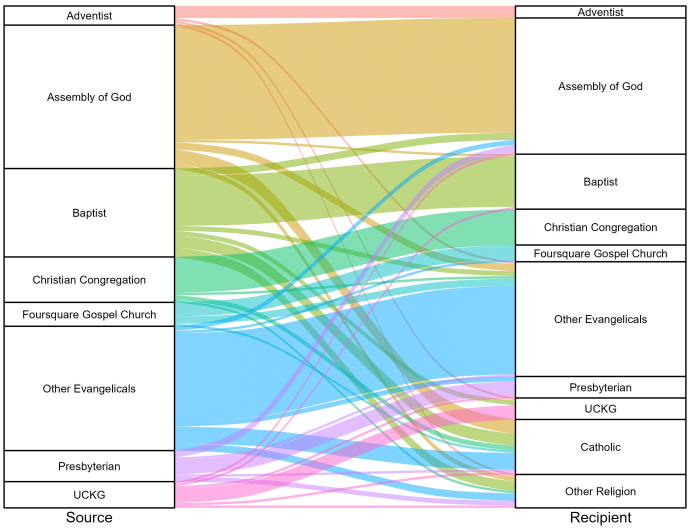
churches succeeded in supporting and improving the lives of poor individuals who often have few other alternatives. Evangelical churches are present in the most disadvantaged neighborhoods and remote parts of the country. Perhaps this finding helps explain the negative correlation between *Bolsa Família* and the concentration of the evangelical population at the municipal level (see Figure A.1 in the Appendix).

The results of my own original survey with a sample of 1,977 respondents that approximate the Brazilian population in terms of age, gender, geographic region, and religion confirm that evangelical churches are an important source of insurance for their members.[10] In fact, 30.9% of evangelical respondents report that a church helped them cope with economic difficulties. Catholics, on the contrary, are much less likely to be supported by the church when faced with economic hardship. In fact, only 8.3% of the Catholics in the sample report that the church helped them cope with economic hardship (see Figure 3a). This difference persists when accounting for differences in income and socioeconomic class between evangelicals and Catholics (see Figure C.2 in the Appendix). Among the types of support the evangelical church provides, the most common are food donations, help finding a job, and financial support (that is, cash donations and loans) (see Figure 3b).

Not only is reliance on the church to cope with economic hardship more widespread among evangelicals than among Catholics, but access to services provided by evangelical churches is more restrictive than to services provided by the Catholic church. In fact, 91.5% of those who report having received help from an evangelical church are themselves evangelicals, while only 65.3% of those who report having received help from the Catholic church are themselves Catholics (see Table C.1 in the Appendix). In addition, evangelicals are much more likely to receive help from the specific church they attend than from other evangelical churches. Figure 4 illustrates the flow of material help from evangelical churches of various denominations to receivers of different religious affiliations. For example, of the respondents who report receiving help from the Assembly of God (the largest evangelical church in Brazil),

[10] See Appendix C for details about this survey.

Figure 4: Distribution of Help Provided by Evangelical Churches by Church Denomination and Receivers' Religious Affiliation



Note: The figure illustrates the flows of material support from evangelical churches of different denominations to the receivers' religious affiliation. More information about this survey can be found in Appendix C.

80% are members of this church.

These patterns reflect the fact that evangelical churches tend to impose stricter requirements for benefit access than the Catholic church. For example, most evangelical churches require that their members comply with at least some of the following rules: give 10% of their income to the church, attend church services regularly, follow a strict dress code, and refrain from drinking (Spyer, 2020). These strict membership norms facilitate the monitoring of church members and help churches overcome the adverse selection and moral hazard issues described in Section 3. Importantly, evangelical pastors have discretion over the distribution of church resources, which enables them to enforce membership norms.[11] As a result, evangelical churches can provide more generous services and goods to their members than the Catholic church (Iannaccone, 1998). Therefore, belonging to an evangelical church is an indicator of reliance on a parochial and informal type of insurance. In contrast, the low barriers to entry of the Catholic church and its inclusive approach to service provision make

[11] In Appendix C.3 I present some evidence from my original survey that pastors have discretion over the distribution of church resources.

being Catholic a bad proxy for reliance on Catholic church services. In the next section, I discuss the relationship between evangelical bishops and political candidates in Brazil.

5.3 The Involvement of Evangelical Pastors in Electoral Politics

In Brazil, evangelical churches started to become involved in politics in the general elections of 1986. At the time, they were preoccupied with the influence of the Catholic church in the redemocratization process, particularly in the drafting of the new constitution. In short, evangelical leaders at the time wanted to avoid the state providing the Catholic church with privileges (Spyer, 2020). After the promulgation of the 1988 constitution, evangelical leaders remained engaged in politics. For example, Smith (2017) showed how exposure to political information in evangelical churches is common, particularly in low-income and low-education neighborhoods.

Despite the fast-growing number of evangelicals in Brazil (which increased from 9% to 32% of the population between 1990 and 2020), their influence on presidential elections remained limited until 2018. The high number of evangelical denominations and the lack of coordination among the evangelical leaders of different churches and denominations ensured that the "evangelical vote" remained divided (Smith, 2018). In a survey of 21 evangelical pastors' social media profiles and relevant news reports, I find that in the 2014 presidential election, the evangelical leadership was divided. Although 12 pastors supported candidates in parties other than the PT, 2 endorsed Rousseff (PT), and 7 declared neutrality. I also show that even pastors within the same denomination took different positions. For example, within the Assembly of God, two pastors backed different opposition candidates in the first round, and a third declared neutrality. I also identify a pastor of a church with origins in the Assembly of God (the Assembly of God Madureira) supporting Rousseff. Another prominent example is the Universal Church of the Kingdom of God (UCKG). I find that Edir Macedo, the most prominent pastor in this church and one of its founders, supported Rousseff in 2014. Yet, another important pastor, Renato Cardoso (who is also Macedo's

son-in-law), declared neutrality (for more information about this survey and a complete list of the pastors examined, see the Appendix D).

In 2018, greater coordination existed within the evangelical leadership, which overwhelmingly supported the far-right candidate Jair Bolsonaro. In fact, of the 21 evangelical pastors I surveyed, 19 supported Bolsonaro in 2018, one alluded to conservative morals and the defense of the family (which one could map into Bolsonaro's campaign and political platform), and one declared neutrality. Prominent pastors who supported Rousseff in 2014, such as Abner Ferreira (Assembly of God Madureira) and Edir Macedo (UCKG), turned to Jair Bolsonaro.

How did a united evangelical leadership persuade congregants to vote against the PT? As other studies have suggested, political socialization in the church provided information on political candidates and political issues (Smith, 2017, 2018; Boas and Smith, 2019). Furthermore, and as I posit in Section 5.2, congregants have had a positive bond with the source of such information (i.e., evangelical pastors) as a result of the generous services provided by evangelical churches. I argue that the decline in Brazilian exports between 2010 and 2018 increased the ability of the evangelical leadership to influence elections. As economic hardship increased the need for informal insurance, evangelical congregants became more engaged with their church and religious communities to increase their likelihood of getting more of the goods and services evangelical leaders distributed at their discretion. As congregants became more engaged with their religious communities, they also became more exposed and receptive to the political messages that were transmitted during church services and within religious networks (for a graphical representation of this argument, see Figure 1).

6 Data

My empirical analysis relies on data at the commute zone (CZ) and individual levels. First, I describe the construction of my main explanatory variable: the export shock. This is a

variable at the CZ-level, and it is used in both CZ- and individual-level analyses. I then proceed by explaining the dependent variables that I use in my CZ-level analysis. Then, I describe other covariates at the CZ-level. Lastly, I describe the individual-level data and how I match it with the CZ-level data.

6.1 Export shocks

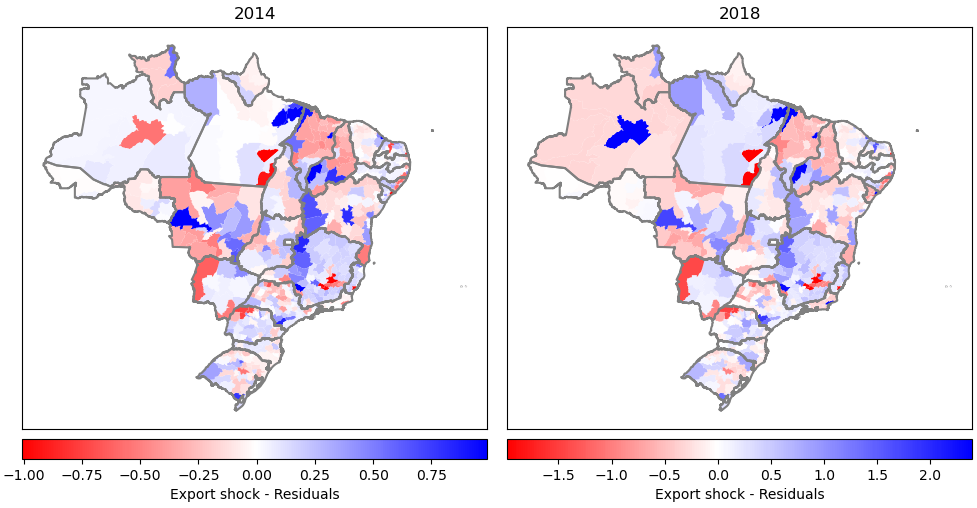
I estimate the effect of exposure to the drop in Brazilian exports at the CZ level on voting behavior and attitudes. My empirical strategy relies on a shift-share instrument, in the spirit of the one Bartik (1987) proposed. Recently, many authors have applied a similar approach in both political science and economics to measure local exposure to changes in trade patterns (e.g., Campello and Urdinez, 2020; Baccini and Weymouth, 2021; Scheve and Serlin, 2022). CZs are defined by the Brazilian Institute of Geography and Statistics according to their specificity in terms of production specialization and natural resources.[12] Therefore, CZs are the ideal unit of analysis for this research. This is also the level of analysis used in previous work that applies shift-share instruments in the Brazilian context (Dix-Carneiro, 2014; Costa, Garred and Pessoa, 2016; Campello and Urdinez, 2020). I use 2010 as my base year because it is the first election before the decline in exports that began in 2012 (see Figure 2). Specifically, I compute:

$$\Delta EPW_{rt} = \sum_{j}^{n} \frac{L_{rjt=2010}}{L_{rt=2010}} \cdot \frac{\Delta EXP_{jt}}{L_{jt=2010}} \tag{1}$$

where r indexes CZs in election-year t (2014 or 2018) and industry j. $\frac{L_{rjt=2010}}{L_{rt=2010}}$ measures the labor market specialization of CZs in the base year. $L_{rjt=2010}$ is the number of formal employees in CZ r and industry j in the base year. L_{rt} is the total number of formal employees in CZ r in the base year. $\frac{\Delta EXP_{jt}}{L_{jt=2010}}$ measures the per capita change in exports by industry j at

[12] While the Brazilian Institute of Geography and Statistics refers to these areas as "microregions," I use the term "commuting zone" for simplicity. For an official definition of "microregion", see IBGE (2010) (in Portuguese).

Figure 5: Geographic Distribution of Exposure to Changes in Exports from Brazil to the Rest of the World per Worker



Note: This figure displays the geographic distribution of ΔEPW_{rt} in 2014 (on the left) and 2018 (on the right) net of state fixed-effects. Blue colors indicate a shock above the state average, whereas red colors indicate a shock below the state average.

time t from Brazil to the rest of the world. More precisely, ΔEXP_{jt} is the change in exports of industry j between 2010 and time t measured in constant tens of thousands of USD Free on Board (USD FOB). I normalize this value by the total number of jobs in industry j in the base year in the whole country ($L_{jt=2010}$).

The intuition behind this measure is that a CZ's level of exposure to a decline in exports is a function of the employment structure in that CZ prior to the shock. For example, a CZ in which a large share of the population is employed in a sector that experienced a steep decline in exports receives a more negative export shock score than a CZ with a low share of employment in that sector (all else being equal).[13] Figure 5 shows the geographic distribution of export shocks net of state-year fixed effects in 2014 (left panel) and 2018 (right panel).

Data on exports at the product level come from the Brazilian Ministry of Economy. Data on the number of jobs in each industry and CZ come from RAIS (*Relação Anual de*

[13]Figure B.1a in the Appendix shows the changes in export values by broad sector (e.g., cereals, crude oil, iron ore).

Informações Sociais), which is an administrative data set collected by the Brazilian Ministry of Economy. It contains information on the universe of formal jobs in Brazil, including municipality and detailed industry classification. A key challenge in building this database is to match the classification of jobs with the classification of exports because they follow different classification systems (CNAE 2.0 and NCM 2012, respectively). To accomplish this match, I mainly rely on existing conversion tables provided by the Brazilian Statistical Office and convert both systems into International Standard Industrial Classification (ISIC) Revision 4. In Appendix G.1 I explain the process in detail. My final database contains 174 industries, which are listed in Table B.1.

6.2 Electoral Data and Party Scores

The CZ-level analysis is based on two types of dependent variables. The first is the change in vote shares for the PT in presidential elections. This is calculated as the change in valid votes for the PT in CZ r between the base year 2010 and the election year t, where t is 2014 or 2018. The second type is ideological scores at the CZ level (as in Colantone and Stanig, 2018*b*; Power and Rodrigues-Silveira, 2019). These scores are meant to represent the aggregate ideological position (or "center of gravity") of a given CZ. The CZ center of gravity is defined as the sum of the ideological positions of the parties, weighted by their vote share in the first round of each presidential election in a given CZ. Brazil has a highly fragmented and volatile party system (Zucco and Power, 2020). In fact, in 2014 and 2018, 11 and 13 candidates ran for presidential office, respectively. A way to measure changes in electoral behavior when many parties are involved is to consider party characteristics (e.g., Martin and Vanberg 2020). More precisely, in volatile or fragmented party systems, we may assume that a voter did not change her voting behavior if, in subsequent elections, she votes for different parties that highlight the same policy issues and stand for similar issue positions and general ideology.

To construct the CZ-level ideology scores, I gather data on party-positioning on general

political ideology (i.e., the position on the *Left-Right* scale) and policy issues related to the welfare state and religion, namely, state-led redistribution (*Redistribut.*), expanding the welfare state (*Welfare*), relationship between politics and religious principles (*Relig.-State*) and support for traditional moral values (*Trad. Moral.*). These data come from three sources that apply different methodologies to compute party scores on policy issues. The first source I use is the Brazilian Legislative Surveys (BLS), which includes data at the year-legislator level on a series of policy issues, as well as self-placement on the Left-Right scale (Zucco and Power, 2019). Based on BLS, Power and Rodrigues-Silveira (2019) calculated the positions of the parties on the Left-Right scale. Second, I also obtain party position data from the 2020 Chapel Hill Expert Survey (CHES): Latin America. This dataset, which is based on a survey of 160 experts in Latin American politics, scores the positions of 11 Brazilian parties on a series of policy issues. The drawback of this dataset is that it contains only one wave. Hence, when using this data set to measure party scores, party positions are necessarily fixed over time. Third, I use the Comparative Manifesto Project (CMP), which computes party positions on political ideology and a series of policy issues based on text analysis of party manifestos.[14] The limitation of the CMP is that it includes only the three or (in the case of the 2018 election) four most voted candidates in a given election.

To measure policy preferences at the CZ level, I compute *CZ's center of gravity* on political ideology and the aforementioned selected policy issues by weighting party scores by party vote shares. Data on electoral results come from the Brazilian official electoral authority. Formally,

$$Center\ of\ Gravity_{rt} = \sum_{p}^{n} \frac{Vote_{pt}}{Vote_{rt}} \times PartyScore_{pt} \tag{2}$$

where r indexes CZs, t election-years and p parties. $\frac{Vote_{pt}}{Vote_{rt}}$ denotes the vote share of party

[14]For scores computed using the CMP, the party position on a policy issue is computed based on the number of negative and positive references to such issue, as in Colantone and Stanig (2018*b*) and Martin and Vanberg (2020).

p in CZ r in year t. I then subtract $Center\ of\ Gravity_{rt}$ at election year 2014 or 2018 by its value in the base year (i.e., 2010) to obtain the change in the center of gravity ($\Delta\ Center\ of\ Gravity_{rt}$).

6.3 Insurance and Compensation

Based on the discussion I develop in Section 5.2, I measure the reliance on church services using census data collected in 2010, the base year. For each CZ, I compute the share of adults who belong to any evangelical denomination. Although evangelical churches in Brazil are generally classified as belonging to "historical Protestantism" or "(Neo-)Pentecostalism", this distinction is not clear in practice. For example, Spyer (2020, p. 54) argued that many evangelical churches that have their origins in historical Protestantism adopted a hybrid model that incorporated many of the values and practices of (Neo-)Pentecostal churches. Furthermore, Araújo (2022) showed that attitudes toward PT were very similar between historical evangelicals and Pentecostals. In addition, both historical (for example, the Baptist and Presbyterian) and (Neo-)Pentecostal (for example, the Assembly of God and the Universal Church of the Kingdom of God) churches provide material support to congregants (see Figure 4) and have prominent pastors who voiced similar political positions in 2018 (see Table D.2 in the Appendix). For these reasons, I collapse the historical and (Neo-)Pentecostal denominations in the analyses that follow.

I also consider the share of Catholics at the CZ-level. As discussed in Section 5.2, Catholics are much less likely to rely on material support from churches and religious organizations than evangelicals (see Figure 3a). However, their religious beliefs are likely to provide psychological support when coping with adverse life events (Scheve and Stasavage, 2006; Fruehwirth, Iyer and Zhang, 2019). Therefore, comparing how evangelical and Catholic communities respond to the export shock can help provide evidence on whether general religiosity or specific characteristics of evangelical communities (i.e., service provision by evangelical churches and political mobilization by evangelical leaders) drive the results.

6.4 Other CZ-Level Data

I also include a series of covariates at the commuting zone level. First, I include measures of GDP per capita and log population at the base year. Data are sourced from Ipeadata, a database the Brazilian Institute of Applied Economic Research maintains. Second, I include the share of the population that works in an export-oriented sector. This variable is computed by matching RAIS and export data that the Brazilian Ministry of Economy makes available. For more information on the data cleaning and matching procedure, see Section 6.1 and Appendix G.1.

6.5 Individual-Level Data

Although CZ-level electoral returns capture within-country variation in aggregate voting behavior, many different factors underlie individual voting decisions. To better examine the channels through which export shocks caused a shift away from the PT and other parties that defend welfare-state expansion, I gather individual-level survey data from the Latin American Public Opinion Project (LAPOP). These data include information on the respondents' municipality of residence. I then used this information to match the survey data with the export shock at the CZ level. To approximate the date of the 2018 election, I use the 2017 LAPOP survey wave.

To assess the value that respondents attach to the psychological benefits provided by religion, I rely on a survey item in which respondents indicate how important religion is to their lives (*import. of religion*). I then used latent factor analysis to construct two additional indices: *religious engagement* and *trad. morality*. Unlike a respondent's internal religiosity, *religious engagement* is meant to capture the extent to which respondents carry out visible behaviors that indicate engagement in their religious communities. I estimate this latent factor using two survey items: how often a respondent goes to religious meetings and how often they go to religious services. I measure attitudes toward traditional moral values by estimating a latent factor based on items covering women's role in society and LGBTQIA+

rights (i.e., whether homosexuals should be allowed to be public officials, whether they should be allowed to marry, and if men are better politicians than women).[15] I also select items that measure attitudes toward the PT, specifically, the extent to which respondents like PT supporters (*like PT supp.*) and think the impeachment of Rousseff (PT) in 2016 was unfair (*Rouseff's impeach. was unfair*). To measure support for redistribution (*Redistr.*), I select an item that measures agreement with the statement "the state should implement public policies to reduce inequality of opportunity."

Furthermore, I construct a dummy variable that I use in the individual-level models to estimate the effect of the export shock among evangelicals. This variable (*Evangelical*) equals one if the respondent is evangelical and zero otherwise. Lastly, I control for basic socioeconomic characteristics, namely, gender, age, race, and education level. I select variables that are unlikely to be affected by the export shock, because including variables that can be affected by treatment is a source of bias (Rosenbaum, 1984). Similar basic socioeconomic characteristics have been used in previous research that has analyzed survey data matched to trade shocks (e.g., Colantone and Stanig, 2018*b*).

7 Research Design

7.1 Model Specification

My empirical strategy relies on examining the effect of changes in exports per worker at the CZ level on electoral behavior and public opinion. First, for electoral behavior, I estimate stacked first differences models at the CZ level. I estimate regressions of the following form:

$$\Delta Y_{srt} = \alpha_{st} + \beta \Delta EPW_{srt} + \gamma \Delta EPW_{srt} \cdot Evang_{srt=2010} + \zeta Evang_{srt=2010} + \mathbf{X_{srt=2010}}\eta' + \varepsilon_{srt}, \tag{3}$$

[15] Cronbach's Alpha = .60

where r indexes CZs in state s, election year t, and ε_{srt} is the error term. ΔY_{srt} is one of the dependent variables described in Section 6.2 (i.e., either first differences in PT's vote shares or CZ's centers of gravity). The term α_{st} denotes state-year fixed effects, which capture factors common to all CZs within a state in a given election, such as the governor's ideological leaning and the general political climate in the state. $Evang_{srt=2010}$ is a dummy variable that equals one if CZ r is above the median in terms of the share of the population that belongs to any evangelical denomination in 2010. $\mathbf{X_{srt=2010}}$ is a vector of controls measured pre-treatment, that is, in 2010. It includes the share of formal jobs in CZ r that are in export industries, log population, and log GDP per capita. The coefficients of interest are β–which estimates the effect of the export shock in CZs with low levels of evangelicals–and, γ, which estimates the difference of the effect of the export shock in CZs with high levels of evangelicals (compared to CZs with low levels of evangelicals). The dependent variables and ΔEPW_{srt} are standardized to facilitate interpretation of the results.

Second, to estimate the effect of the drop in exports on individual-level attitudes, I estimate regressions of the following general form:

$$Attitude_{isr} = \alpha_s + \beta \Delta EPW_{sr(i)} + \gamma \Delta EPW_{sr} \cdot Evangel_i + \zeta Evangel_i + \mathbf{X_{srt=2010}}\eta' + \mathbf{Z_{it}}\kappa' + \varepsilon_{isrt}, \tag{4}$$

where i indexes individuals in state s and CZ r. $Attitude_{isr}$ is one of the dependent variables described in Section 6.2, namely, engagement with religion, importance of religion, attitudes toward the PT, support for redistribution, and opinion on traditional moral values. $\Delta EPW_{sr(i)}$ is the export shock at the CZ-level attributed to individual i based on her municipality of residence. $Evangel_i$ is a dummy variable that equals one if respondent i self-describes as evangelical. α_s is a vector of state-fixed effects, and $\mathbf{X_{srt=2010}}$ is the vector of CZ-level pretreatment controls. Finally, $\mathbf{Z_{it}}$ is a vector of individual-level controls that includes: gender, age, ethnicity, and years of education. The coefficients of interest are β, which estimates the effect of the export shock among non-evangelicals, and γ which

estimates the difference of the effect of the export shock among evangelicals (compared to non-evangelicals).

7.2 Identification and Robustness Checks

A potential issue with this empirical strategy is that local pre-shock labor market specialization (i.e., the shares of jobs in CZ r that are in sector j in the base year, 2010) might be correlated with pre-existing trends in electoral outcomes (Goldsmith-Pinkham, Sorkin and Swift, 2020). For example, regions with a high concentration of soybean production may exhibit an upward trend in favor of a specific type of candidate before the drop in exports. I address this concern in a number of ways. First, I control for trends in CZs with similar labor market specialization in 2010. That is, I control for the share of workers in the main export industries interacted with election-year dummies. I define the main export industries as the top four Brazilian exports in 2010. These industries correspond to 42% of the total Brazilian exports in that year (see Figure B.1a in Appendix). Table H.1 in Appendix shows that the results presented in the next section are substantively unchanged once I add these controls. Second, I control for share of employment in broader export industries (ISIC 2-digit groups). Table H.3 in Appendix shows that adding these controls does not substantively change the results. Third, I follow Goldsmith-Pinkham, Sorkin and Swift (2018) recommendations and identify the employment shares that are most predictive of the shift-share instrument I use in my empirical analyses. I then examine: (1) whether CZs with high concentration of employment in these industries present a different voting behavior between 2006 and 2010 and, (2) the robustness of my main results to adding these employment shares as controls. Table H.4 in Appendix shows that employment in these industries is not predictive of voting behavior between 2006 and 2010 and, Table H.3 in Appendix confirms that my main results are robust to adding employment shares in those industries as controls. Fourth, in Table H.2, I regress the export shock in 2014 and 2018 on lags of the main dependent variable; that is, the first differences in PT's electoral returns between 2006 and 2010. I show that there is

no statistically significant correlation between the export shock and lagged changes in vote shares for the PT. Furthermore, in Appendix K, I analyze the sensitivity of the results to potential omitted variables.

Another threat to inference is spatial autocorrelation. I account for this by clustering the standard errors at the mesoregion-year level. Mesoregions are defined by the Brazilian Institute of Geography and Statistics and are one level of aggregation above CZs. Mesoregions share social and economic characteristics. There are 137 mesoregions and 558 CZs in Brazil. In addition, in Table I.1 in the Appendix, I show the main results presented in Table 1 with standard errors that account for spatial autocorrelation as recommended by Conley (1999).

Adão, Kolesár and Morales (2019) called attention to another potential problem with the residuals in shift-share designs. Specifically, units with similar labor market specialization in the pre-shock period (i.e., with similar shares) may have correlated residuals, causing an over-rejection of the null hypothesis. This issue is not solved by clustering standard errors at higher levels of geographic aggregation. To test for this issue, Adão, Kolesár and Morales (2019) recommend conducting a placebo exercise in which the shift part of the shift-share instrument (here, the per capita change in exports by industry) is replaced by a normally distributed random variable. The exercise is repeated thousands of times and the rejection rate is computed at the 95% confidence level. An indication of the over-rejection problem occurs when the test produces a rejection rate considerably higher than 5%. I perform this exercise as they suggest. After running the regression in equation 3 with my "random shift" replacing my shift-share instrument 10,000 times, I end up with a rejection rate of 5.5% for the coefficient of interest (i.e., the interaction of the export shock with the evangelical dummy). The rejection rate for the export shock coefficient itself is similar and the Figures is available upon request. Figure I.1 in Appendix **??** shows the distribution of the estimated coefficients in this placebo test. The figure shows that the estimates are normally distributed with the mean equal to zero. These results suggest that the correlation between residuals

of units with similar labor market specialization in the pre-shock period is unlikely in this case.

Another series of potential concerns relates to the interaction effect between the export shock and the evangelical variable. First, Hainmueller, Mummolo and Xu (2018) pointed out that if interaction effects were non-linear, the results might be model dependent. To assess whether the marginal effect of the export shock on vote shares for the PT was a linear function of the concentration of evangelicals at the regional level, I follow the diagnostic recommendations by these authors. Specifically, I estimated models similar to the one in Equation 3 using their proposed binning estimator. Figure J.1 in the Appendix plots both the linear marginal effects with the continuous evangelical variable and the binning estimator. The fact that the Low, Medium, and High binned estimates align almost perfectly with the linear marginal effect line suggests that the assumption holds for this moderator. Moreover, the density plot at the bottom of Figure J.1 demonstrates a high degree of common support. Finally, the interaction effect is not sensitive to the coding of the evangelical variable. Second, the evangelical variable might be capturing other CZ-level characteristics that moderate the effect of export shocks on voting behavior. I address this concern in two ways. First, in Table K.1, I add to the specification in Equation 3 interactions of the export shock with other variables that might moderate the export shock effect and be correlated with the evangelical variable. Specifically, I add interactions of the export shock with the following variables at the CZ-level prior to treatment: share of the population below the poverty line, share of the population living in rural areas, and average level of education. Third, in Appendix K I assess the sensitivity of the interaction effect to potential omitted variable bias following the recommendations of Cinelli and Hazlett (2020). Lastly, in the next section, I discuss why the results presented in Table 2 and Figure 6 alleviate the concern that the interaction effect is driven by omitted variable bias.

Table 1: Effects of Export Decline on Votes for the PT by Concentration of Evangelicals and Catholics (2010-2018)

	DV: ΔPT Vote Shares				
	(1)	(2)	(3)	(4)	(5)
ΔEPW_t	0.0378**	0.0211	0.0445***	0.0618***	0.0437***
	(0.0154)	(0.0135)	(0.0132)	(0.0237)	(0.0131)
Evangelicals (dummy)		-0.0552		-0.0874	
		(0.0693)		(0.0589)	
Catholics (dummy)		-0.0790		-0.0987	
		(0.0572)		(0.0647)	
Evangelicals (cont.)			-0.141**		-0.159***
			(0.0625)		(0.0579)
Catholics (cont.)			-0.145**		-0.161**
			(0.0583)		(0.0632)
Evangelicals (dummy) × ΔEPW_t		0.0593**			
		(0.0253)			
Evangelicals (cont.) × ΔEPW_t			0.0213*		
			(0.0117)		
Catholics (dummy) × ΔEPW_t				-0.0326	
				(0.0262)	
Catholics (cont.) × ΔEPW_t					-0.0198*
					(0.0120)
Observations	1114	1114	1114	1114	1114
Adjusted R^2	0.820	0.821	0.822	0.820	0.822
Evangelicals (dummy) × year		✓			
Evangelicals (cont.) × year			✓		
Catholics (dummy) × year				✓	
Catholics (cont.) × year					✓
State × year FE	✓	✓	✓	✓	✓
CZ controls	✓	✓	✓	✓	✓

Note: Stacked first difference estimates at the commuting zone (CZ) level. Models (2) and (3) include interaction between the export shock and the share of Evangelicals at the CZ level as a dummy variable (i.e., below the median equal zero and above the median equals one) and as a continuous variable, respectively. Columns (4) and (5) do the same but with the concentration of Catholics. All models include state by year fixed effects and the following CZ-level controls: share of workers in export sectors, log GDP per capita and log population in base year. All continuous variables are standardized. Standard errors clustered at the meso-region by year level in parenthesis. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

8 Effects of Exports Decline on Electoral Returns

First, I examine the effects of export decline on voting for the PT in the 2010s. Table 1 reports the results of the models with changes in the share of votes for the PT between 2010 and the two subsequent presidential elections (2014 and 2018) as the dependent variable. All variables are standardized to have mean 0 and a standard deviation of 1 to make interpretation easier. My theoretical expectation is that a decrease in exports reduces the votes cast for the PT, especially in CZs with a higher concentration of evangelicals. The results suggest, however, that the decline in exports in the 2010s increased the votes cast for the Workers' Party (PT). Column (1) shows that a one-standard deviation decrease in the export shock reduces the vote share for the PT by approximately 0.04 standard deviations. In addition, columns (2) and (3) provide evidence that this effect is stronger in CZs with higher levels of the evangelical population. In substantive terms, a decrease in the export shock by one standard deviation (equivalent to USD 7,778 per capita) decreases the PT's vote share by .8 percentage points, but only in CZs with evangelical populations that are above the median. Although the estimated effects are small, this is common in studies examining the effect of trade shocks on voting behavior (Margalit, 2019*a*).[16] Columns (4) and (5) display the results of the interaction between the export shock and the Catholic variables (in binary and continuous forms, respectively). Because being Catholic is not a good proxy for reliance on church services (see Section 5.2), the null result shown in columns (4) and (5) suggests that general religiosity alone is not sufficient to change how people react to trade shocks.

I next estimate the models in columns (1), (2), and (4) in Table 1 by election year. While evangelical leaders took a clear and cohesive position against the PT and in favor of the far-right candidate, Jair Bolsonaro, in 2018, in 2014 they were divided in their political positions (see Section 5.3 and Appendix D). Table 2 reports the results. Columns (1) and (4) show that a decrease in exports causes a decline in the vote share for the PT in both

[16]For example, Dippel et al. (2022) used a similar instrument to study the effect of an increase in imports from low-wage countries to Germany. They found that a one standard deviation increase in Chinese imports increased the vote share of nationalist parties by 0.12 percentage points.

Table 2: Effects of Export Shock on Votes for the PT by Concentration of Evangelicals and Catholics by Election

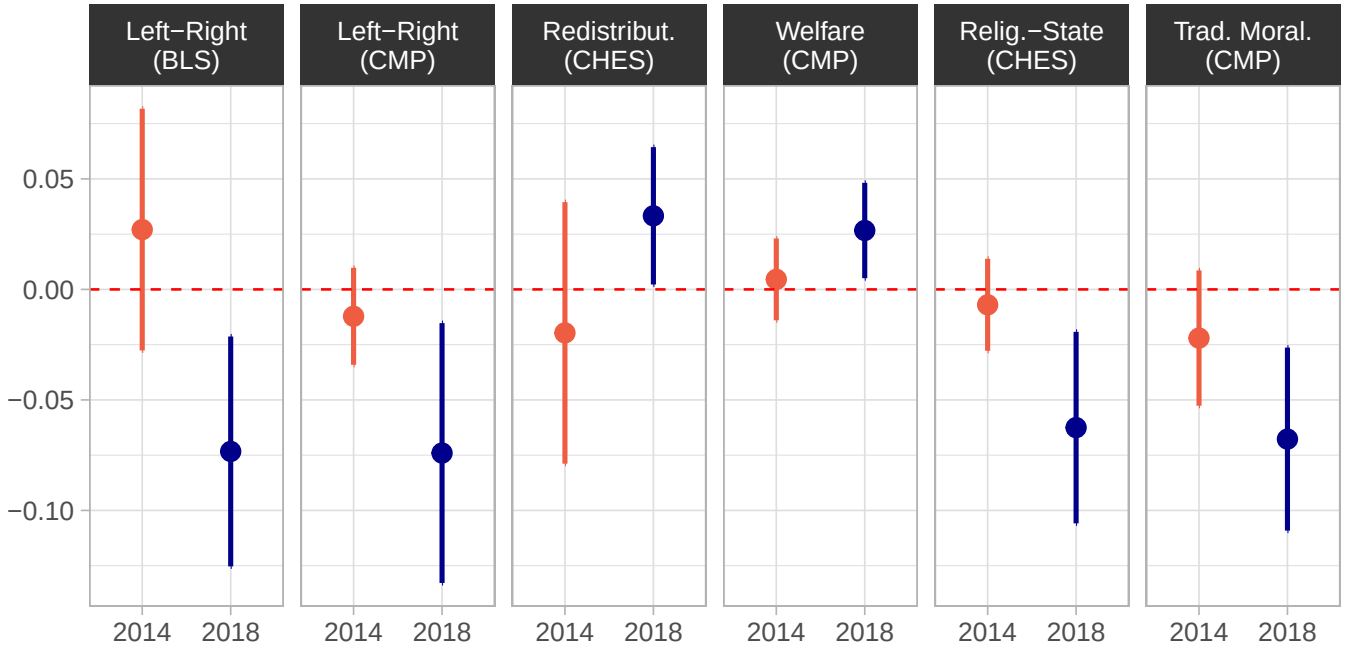
	DV: ΔPT Vote Shares					
	2014 Election			2018 Election		
	(1)	(2)	(3)	(4)	(5)	(6)
ΔEPW_t	0.0544*	0.0376	0.0990**	0.0308*	0.0136	0.0503*
	(0.0301)	(0.0342)	(0.0477)	(0.0175)	(0.0139)	(0.0289)
Evangelicals (dummy)		-0.0714	-0.0720		-0.100	-0.104
		(0.0762)	(0.0773)		(0.0878)	(0.0886)
Catholics (dummy)		-0.0674	-0.0683		-0.0908	-0.0940
		(0.0735)	(0.0729)		(0.0876)	(0.0887)
Evangelicals (dummy) × ΔEPW_t		0.0616			0.0604**	
		(0.0590)			(0.0288)	
Catholics (dummy) × ΔEPW_t			-0.0619			-0.0260
			(0.0589)			(0.0299)
Observations	557	557	557	557	557	557
Adjusted R^2	0.665	0.665	0.665	0.758	0.759	0.758
State FE	✓	✓	✓	✓	✓	✓
CZ controls	✓	✓	✓	✓	✓	✓

Note: Stacked first difference estimates at the commuting zone (CZ) level. Models (1–3) report the results for the 2014 election. Models (4-6) to the 2018 election. Models (2) and (5) include interaction between the export shock and the concentration of Evangelicals at the CZ level as a dummy variable, while models (3) and (6) interact the export shock with a dummy variable indicating the concentration of Catholics at the CZ-level. All models include state fixed effects and the following CZ-level controls: share of workers in export sectors, log GDP per capita and log population in base year. All variables are standardized. Standard errors clustered at the meso-region level in parenthesis.

elections. However, whereas in 2014 no difference exists between CZs with larger evangelical communities (column 2), in 2018 this effect is driven entirely by CZs with high shares of evangelicals (column 5). I speculate that the imprecisely estimated coefficient in 2014 is a consequence of the lack of coordination among evangelical elites. As I discuss in Section 5.3, in 2014, evangelical pastors were divided among supporting opposition candidates, backing the PT (the then incumbent), and declaring neutrality. In contrast, in 2018, there was much more coordination among evangelical pastors, with the vast majority of them supporting the far-right candidate, Jair Bolsonaro. This difference between the precision of the 2014 and 2018 estimates of the interaction between the export shock and the evangelical dummy provides some reassurance that other characteristics at the CZ level that are correlated with the presence of evangelicals are not driving these results. In Appendix K.1, I provide additional evidence that other observable characteristics at the CZ level (i.e., poverty, rural population, and educational levels) are not driving these results. Lastly, in Table 1, the interaction of the export shock with a variable that indicates the concentration of Catholics does not produce statistically significant results.

Next, I examine whether the change in vote shares for the PT caused by the decline in exports also translated into support for parties with political platforms are more in line with the interests and values of evangelical churches. To do this, I ran the same models as in columns (2) and (6) of Table 2 but with my alternative CZ-level outcome; specifically, I substitute the first difference in vote share for the PT with the first difference in ideological centers of gravity of the CZs. The first difference in centers of gravity is meant to capture changes in preferences of parties with different political platforms. The centers of gravity are computed as the weighted average of the party scores, where the weights are vote shares. Details about how centers of gravity are computed can be found in Section 6.2. I consider three dimensions of party positions: general ideology (i.e., position on the left-right scale), redistribution, and welfare state, the relationship between religious values and practices and politics. The estimated coefficients for the interaction of export shock and the evangelical

Figure 6: Estimates of Export Shock Interacted with Evangelical Dummy (DVs: Centers of Gravity)



Note: The figure plots the estimated coefficients and 95% confidence intervals of the interaction between the export shock and the evangelical dummy for models as in columns (2) and (5) of Table 2 but with different DVs. The DVs are the first difference of the centers of gravity of CZs for different party scores, that is, position on the left-right scale (*Left-Right*), as well as support for redistribution (*Redistribut.)*, expansion of the welfare state (*Welfare*), religious principles in politics (*Relig.-State)*, and traditional moral values (*Trad. Moral.*). CZs' centers of gravity are a weighted average of party scores, where the weights are vote shares. For more information on how centers of gravity are computed, see 6.2. The acronyms in parentheses indicate the data source for the party scores used to compute the centers of gravity, namely the Brazilian Legislative Survey (BLS), the Comparative Manifesto Project (CMP), and the Chapel Hill Expert Survey (CHES).

dummy are reported in Figure 6. The estimates in Figure 6 suggest that in CZs with high levels of an evangelical population, the decline in exports caused a shift in preferences toward parties with different political platforms only in the 2018 election (blue lines), but not in 2014 (red lines). Specifically, the decline in exports caused CZs with high shares of evangelicals to turn more toward right-wing parties, parties more opposed to redistribution and welfare expansion, as well as parties that are more in favor of adopting religious practices and values in politics.

9 Evaluating the Mechanisms

In the previous section, I showed that the decrease in exports had a negative effect on the electoral returns of the Workers' Party (PT). I also provided evidence that in 2018, but not in 2014, this effect was driven by CZs where evangelicals represent a higher share of the population. Furthermore, in 2018, the shift away from PT in CZs with a high concentration of evangelicals is accompanied by increased support for parties that lean to the right, oppose redistribution, and defend religious values and practices. I conjecture that the shift in party preferences is explained by a two-step process. First, in CZs that are more exposed to the decline in exports, evangelicals engage more with their religious communities. As I argue in Section 5.2, this difference is explained by evangelical churches acting as non-state service providers (NSPs). More specifically, I advance the idea that when evangelical congregants face economic insecurity, they tend to invest more in their ties with their religious communities in order to increase access to the goods and services distributed at the discretion of evangelical leaders. Second, evangelical leaders acting as brokers for parties and candidates that share their political views–notably Jair Bolsonaro in 2018–are more successful in mobilizing voters in places where the dependency of congregants on church services and goods is stronger (i.e., places that are negatively affected by globalization). To better explore this individual-level mechanism, I now turn to my analysis of survey data.

I rely on the LAPOP's Americas Barometer 2017 Brazilian wave. This wave was selected for two reasons. First, it was selected to approximate the date of the 2018 Brazilian presidential election. Second, it was selected due to data availability, namely, the presence of survey items that measure individual engagement with religious communities (*religious engagement*) and attitudes toward the PT, that is, the extent to which respondents *like PT supporters* and agree that *Rousseff's (PT) impeachment was unfair*. I also select items that are related to alternative mechanisms. First, the possibility exists that the economic decline caused by the export shock led voters to seek psychological comfort in religion. To evaluate this mechanism, I estimate the effect of export shock on the degree to which respondents think religion is important in their lives (*religion important*). Second, the export shock might directly affect attitudes toward *redistribution* and *traditional moral values*, which might affect voting behavior independently of political mobilization by evangelical leaders. For example, scholars have argued that trade shocks lead to higher support for redistribution (Walter, 2010; Scheve and Serlin, 2022) and authoritarian values (Ballard-Rosa et al., 2021; Ballard-Rosa, Jensen and Scheve, 2022). If a similar phenomenon were taking place in the context of Brazil in the 2010s, voters would have turned away from the PT for programmatic reasons and not as a result of the evangelical leadership's political persuasion.

Table 3 reports the results of the individual-level analysis. The variables are standardized to make interpretation easier. Column (1) shows that the decline in exports increases engagement with religious communities (i.e., frequency of attendance at religious meetings and services) only among evangelicals. Columns (3) and (4) show that a decline in exports decreases pro-PT sentiment among evangelicals. Columns (5) and (6) show that the decline in exports did not change evangelicals' attitudes toward redistribution, nor their conservatism in relation to traditional moral values. Finally, column (2) shows that the decline in exports is not associated with an increase in the importance of religion among evangelicals nor among individuals identifying with other religious denominations. Overall, the results suggest that evangelicals became more engaged with their religious communities as a result

Table 3: Individual-Level Estimates: Interaction with Evangelical Dummy

DV:	Religious Engagement	Import. of Religion	Like PT supp.	Rousseff's impeach. unfair	Redistr.	Trad. Morality
	(1)	(2)	(3)	(4)	(5)	(6)
ΔEPW$_{2018}$	-0.0001	0.008	-0.0388*	-0.0034	0.0517***	0.0366*
	(0.0250)	(0.0341)	(0.0228)	(0.0212)	(0.0164)	(0.0218)
Evangelical $\times$	-0.0826**	-0.0202	0.1080**	0.0844*	-0.0095	-0.0087
ΔEPW$_{2018}$	(0.0346)	(0.0330)	(0.0437)	(0.0454)	(0.0422)	(0.0278)
Evangelical	0.7640***	0.4070***	-0.1310***	-0.1190**	0.0619	0.5790***
	(0.0623)	(0.0477)	(0.0481)	(0.0594)	(0.0510)	(0.0609)
Obs.	1455	1476	1447	1466	1471	1442
Adjusted R^2	0.173	0.0819	0.0290	0.0344	0.0272	0.206
State FE	✓	✓	✓	✓	✓	✓
Ind. controls	✓	✓	✓	✓	✓	✓
CZ controls	✓	✓	✓	✓	✓	✓
N of CZs	82	82	82	82	82	82

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Standard errors clustered at the CZ-level. The table reports the results of regressions of the form given in Equation 4. The dependent variables are individual-level survey measures of: religious engagement (how often respondents attend church services and religious meetings) (1); how important religion is to the respondent's life (2); attitudes towards the Worker's Party (PT), specifically the extent to which the respondent likes PT supporters (3) and agrees that Rousseff's impeachment was unfair (4); attitudes towards redistribution (5), specifically the extent to which respondents think that the State should act to reduce inequality of opportunity and; traditional morality (6). All continuous variables are standardized to have mean 0 and SD 1. The Evangelical dummy is equal to 1 when respondent self-reports as evangelical. CZ-level controls are: share of workers in the export sector, log GDP per capita and log population. Individual-level controls are: age, gender, race and educational level.

of the decline in exports. However, such a higher investment in their religious communities did not translate into more conservative values. Although evangelicals have more traditional moral values on average (see Column (6) of Table 3), the decline in exports did not appear to make their conservatism stronger. Instead, the positive effect of the decline in exports on religious engagement (Column 1) is accompanied by more negative attitudes toward PT (Columns 3 and 4). These results suggest that changes in preferences and values as a direct result of the decline in exports is not the mechanism behind the increase in anti-PT sentiment is not changes in preferences and values as a direct result of the decline in exports. Instead, the results are consistent with religious elites persuading congregants who became more dependent on church services to hold more negative attitudes toward the PT (that is, an "organizational broker" effect).

10 Conclusion

The progressive integration of national economies increases economic volatility and creates winners and losers (Rodrik, 1998; Autor, Dorn and Hanson, 2013; Dix-Carneiro, 2014). Canonical theories have hypothesized that states would respond to the risks and localized losses of globalization by insuring and compensating the affected population through higher public spending (Cameron, 1978; Ruggie, 1982, e.g.,). I contend that compensation for losses caused by globalization is not necessarily provided by the state. When voters rely heavily on non-state service providers (NSPs) to cope with adverse life events, the negative effects of globalization make affected communities more susceptible to the political persuasion of "organizational brokers.""

I leverage the sharp decline in exports from Brazil to test this argument. I show that exposure to the negative effects of globalization reduced support for left-wing parties defending redistribution and welfare expansion. I also show that this effect is stronger in CZs with a high share of evangelicals, who, compared to other religious denominations, tend to rely

more on their churches for material support. By analyzing survey data, I provide evidence of the underlying mechanism. Specifically, evangelicals in CZs more exposed to the decrease in exports attend church services and religious meetings more often. Furthermore, evangelicals more exposed to the decrease in exports also report more negative attitudes toward the Workers' Party (PT), but do not oppose redistribution more or hold more conservative moral values. Overall, the evidence is consistent with the argument that global economic busts can increase the dependency of poor communities on NSPs and increase the power of organizational brokers to shape electoral results. These results are most likely to generalize to other Global South countries, where reliance on NSPs is widespread (Gough et al., 2004; Cammett and MacLean, 2014).

Much work remains to be done on the contingencies underlying the political consequences of globalization. Future work should explore when and how these findings extend to other contexts. A fruitful way forward is to analyze how global economic busts enable and constrain the activities of other types of NSPs. In Latin America, special attention should be paid to organized crime. Another promising way forward is to examine whether NSPs make economic liberalization politically palatable in the Global South by providing support to the poor without increasing taxes on the rich.

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Part

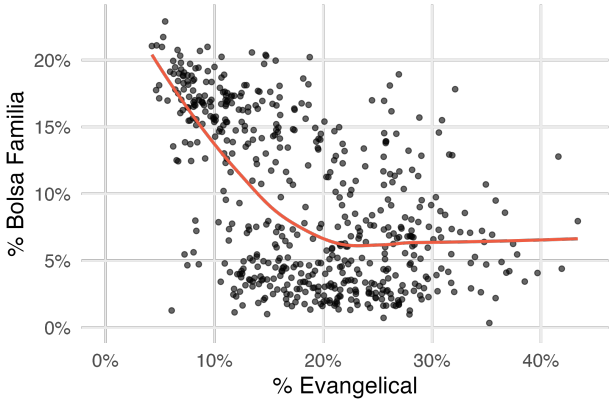
Online Appendix for "Turning Away from the State: Trade Shocks and Informal Insurance in Brazil"

Paula Rettl

Table of Contents

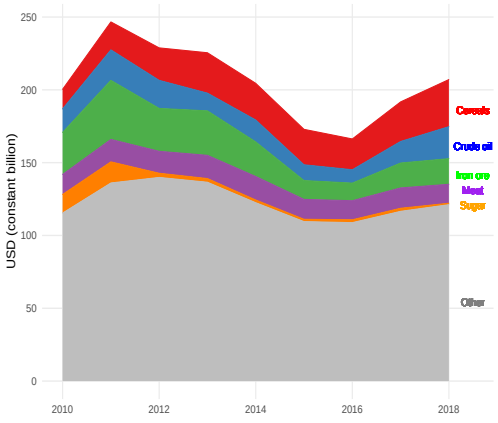
A Beneficiaries of Conditional Cash Transfers and Share of Evangelicals: Correlation

Figure A.1: Correlation of

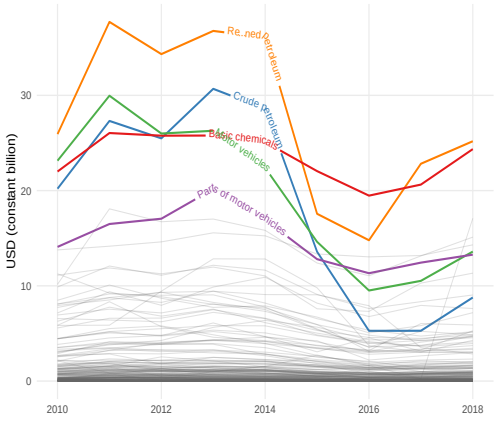


Note: Calculations based on the 2010 Census.

B Descriptive Statistics: Trade Data



(a) Exports



(b) Imports

Changes in exports by ISIC 4.0 Rev. classes

ISIC Code	ISIC 4.0 Rev. Description	Δ exports 2010-2014	Δ exports 2010-2018
0111	Growing of cereals (except rice), leguminous crops and oil seeds	1170182	1886466
0112	Growing of rice	8853	16662
0115	Growing of tobacco	-374	-1702
0116	Growing of fibre crops	42651	64588
0121	Growing of grapes	-7490	-5645
0122	Growing of tropical and subtropical fruits	-1546	-2883
0123	Growing of citrus fruits	2788	1945
0124	Growing of pome fruits and stone fruits	-2600	-970
0127	Growing of beverage crops	43137	-136414
0141	Raising of cattle and buffaloes	-3220	-19732
0142	Raising of horses and other equines	35	326
0144	Raising of sheep and goats	866	523
0145	Raising of swine/pigs	106	370
0146	Raising of poultry	1642	3269
0149	Raising of other animals	3562	2838
0170	Hunting, trapping and related service activities	0	0
0220	Logging	1740	5090
0311	Marine fishing	94	1910
0510	Mining of hard coal	16	13
0520	Mining of lignite	11	1
0610	Extraction of crude petroleum	-110297	581742
0620	Extraction of natural gas	0	0
0710	Mining of iron ores	-511416	-1127601
0729	Mining of other non-ferrous metal ores	45103	106145
0891	Mining of chemical and fertilizer minerals	317	426
0892	Extraction of peat	-5	-13
0893	Extraction of salt	378	24
0899	Other mining and quarrying n.e.c.	5972	6552
1010	Processing and preserving of meat	239609	-71998
1020	Processing and preserving of fish, crustaceans and molluscs	-2738	-40
1040	Manufacture of vegetable and animal oils and fats	149068	55008
1050	Manufacture of dairy products	17185	-8331

Table B.1: Changes in exports by ISIC Rev. 4 classification

Continued on next page...

ISIC Code	ISIC 4.0 Rev. Description	Δ exports 2010-2014	Δ exports 2010-2018
1061	Manufacture of grain mill products	8206	4892
1062	Manufacture of starches and starch products	-735	-1047
1072	Manufacture of sugar	-406520	-708939
1073	Manufacture of cocoa, chocolate and sugar confectionery	-15360	-20929
1074	Manufacture of macaroni, noodles, couscous and similar farinaceous products	1497	-91
1080	Manufacture of prepared animal feeds	8299	10631
1101	Distilling, rectifying and blending of spirits	1049	-168
1103	Manufacture of malt liquors and malt	4327	4032
1104	Manufacture of soft drinks; production of mineral waters and other bottled waters	-166	-361
1200	Manufacture of tobacco products	-43997	-98169
1311	Preparation and spinning of textile fibres	115	-2385
1391	Manufacture of knitted and crocheted fabrics	-96	-868
1393	Manufacture of carpets and rugs	-650	-728
1394	Manufacture of cordage, rope, twine and netting	778	-617
1410	Manufacture of wearing apparel, except fur apparel	-5009	-5671
1420	Manufacture of articles of fur	32	-34
1430	Manufacture of knitted and crocheted apparel	-81	67
1520	Manufacture of footwear	-51044	-65874
1610	Sawmilling and planing of wood	-3812	23038
1621	Manufacture of veneer sheets and wood-based panels	8931	49989
1622	Manufacture of builders' carpentry and joinery	1615	5175
1623	Manufacture of wooden containers	2765	-319
1701	Manufacture of pulp, paper and paperboard	-10843	220046
1702	Manufacture of corrugated paper and paperboard and of containers of paper and paperboard	2174	2044
1812	Service activities related to printing	-101	-86
2012	Manufacture of fertilizers and nitrogen compounds	2057	-14249
2013	Manufacture of plastics and synthetic rubber in primary forms	-1368	-24916
2021	Manufacture of pesticides and other agrochemical products	-12506	-15357
2022	Manufacture of paints, varnishes and similar coatings, printing ink and mastics	-1260	-5475

Table B.1: Changes in exports by ISIC Rev. 4 classification

Continued on next page...

ISIC Code	ISIC 4.0 Rev. Description	Δ exports 2010-2014	Δ exports 2010-2018
2023	Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations	-11448	-22093
2030	Manufacture of man-made fibres	-4998	-6476
2211	Manufacture of rubber tyres and tubes; retreading and rebuilding of rubber tyres	-15620	-32528
2310	Manufacture of glass and glass products	-9514	-10085
2391	Manufacture of refractory products	1929	1938
2393	Manufacture of other porcelain and ceramic products	-1725	-1152
2394	Manufacture of cement, lime and plaster	359	-124
2395	Manufacture of articles of concrete, cement and plaster	7998	-4431
2396	Cutting, shaping and finishing of stone	19802	-6455
2399	Manufacture of other non-metallic mineral products n.e.c.	2792	-2916
2410	Manufacture of basic iron and steel	95546	216958
2511	Manufacture of structural metal products	632	-3278
2512	Manufacture of tanks, reservoirs and containers of metal	2713	-1087
2513	Manufacture of steam generators, except central heating hot water boilers	-1694	-3866
2520	Manufacture of weapons and ammunition	-2731	-1548
2620	Manufacture of computers and peripheral equipment	-6013	3413
2652	Manufacture of watches and clocks	33	122
2660	Manufacture of irradiation, electromedical and electrotherapeutic equipment	491	1343
2680	Manufacture of magnetic and optical media	-304	-148
2720	Manufacture of batteries and accumulators	-1855	-2041
2732	Manufacture of other electronic and electric wires and cables	-9302	229
2750	Manufacture of domestic appliances	-20785	-21694
2813	Manufacture of other pumps, compressors, taps and valves	-12808	-40561
2814	Manufacture of bearings, gears, gearing and driving elements	-10996	-15433
2818	Manufacture of power-driven hand tools	-3963	-2641
2821	Manufacture of agricultural and forestry machinery	-16657	-34669
2823	Manufacture of machinery for metallurgy	-2817	-6023
2824	Manufacture of machinery for mining, quarrying and construction	38984	87398

Table B.1: Changes in exports by ISIC Rev. 4 classification

Continued on next page...

ISIC Code	ISIC 4.0 Rev. Description	Δ exports 2010-2014	Δ exports 2010-2018
2825	Manufacture of machinery for food, beverage and tobacco processing	-2981	-3133
2910	Manufacture of motor vehicles	-230297	24351
2920	Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers	-5146	-4561
3012	Building of pleasure and sporting boats	-2668	-1182
3091	Manufacture of motorcycles	1797	-2632
3099	Manufacture of other transport equipment n.e.c.	159	228
3220	Manufacture of musical instruments	-72	-125
3240	Manufacture of games and toys	-752	-623
3510	Electric power generation, transmission and distribution	-34684	-34684
3520	Manufacture of gas; distribution of gaseous fuels through mains	0	0
3811	Collection of non-hazardous waste	550	-1
5310	Postal activities	0	7
9102	Museums activities and operation of historical sites and buildings	-9	56

Table B.1: Changes in exports by ISIC Rev. 4 classification

C Original Survey on Services Provided by the Church

C.1 Sampling and Questionnaire

The survey data was collected online between July 17th and August 6th, 2024 with a sample of the Brazilian adult population. The survey was designed to collect descriptive information about how churches and other informal institutions support Brazilians going through economic hardship. For this reason, the survey was designed to be representative of the Brazilian population in terms of age, gender, religion and geographic region. I also tried to get as close as possible from the distribution of the Brazilian population in terms of social class. However, reaching low class respondents is difficult. Overall, the sample has more young people, females and people of middle class (rather than lower classes) than the Brazilian population. Ahead of data collection, the survey design was approved by the relevant institutional IRB. Respondents were invited by Netquest, a survey company that operates in Brazil and other Latin American countries. Data were collected through Qualtrics. 1977 respondents answered questions about whether and how churches supported them when they faced economic hardship. We exclude respondents who have not completed the survey, who failed the attention check and whose anonymous id (provided by the survey company) was duplicated. The items we use in section 5.2 are the following:

1. What is your religion? (a) Catholic; (b) Evangelical; (c) Other (which?) [TEXT BOX]

2. (if (b) in item 1): What is the Evangelical church you usually go to? [dropdown list with option to write another option not mentioned in text box].

3. Have you ever received help from a church or religious organization due to job loss or lack of money? (a) yes; (b) no.

4. (if (a) in item 3): which type of help did you receive from a church or religious organization? (a) food donation; (b) money donation; (c) loan; (d) shelter; (e) help to find a job; (f) other (which) [TEXT BOX].

5. Which type of religious organization or church helped you when you faced economic hardship? (select all that apply). (a) Catholic church; (b) Evangelical church (Protestant, Pentecostal, Neopentecostal); (c) Other (which?) [TEXT BOX].

6. (if (b) in item 5): Which Evangelical churches helped you to cope with economic hardship? (select all that apply). [dropdown list with option to write another option not mentioned in text box].

Table C.1: Gender of Respondents

Gender	Number	%
Female	1011	51.14
Male	963	48.71
Other	3	0.15

Table C.2: Age of Respondents

Mean	Std. Dev.	Min.	Max.
43.07	16.47	18	94

Table C.3: Geographic Region where Respondents Live

Region	Number	%
Midwest	169	51.14
North	183	9.26
Northeast	467	41.43
South	306	15.48
Southeast	852	43.10

Table C.4: Geographic Region where Respondents Live

Region	Number	%
Midwest	169	51.14
North	183	9.26
Northeast	467	41.43
South	306	15.48
Southeast	852	43.10

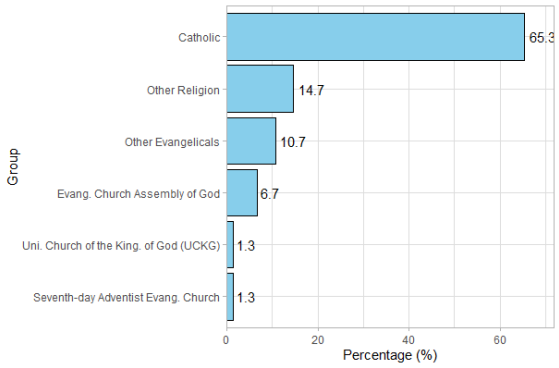
Table C.5: Respondents' Household Income

Income	Number	%
Up to 2 minimal wages	1097	55.49
3 to 5 minimal wages	641	32.42
6 to 10 minimal wages	174	8.80
More than 10 minimal wages	65	3.29

Note: as of August 2024, the monthly minimal wage for a full time job in Brazil is R$1412 (USD 253).

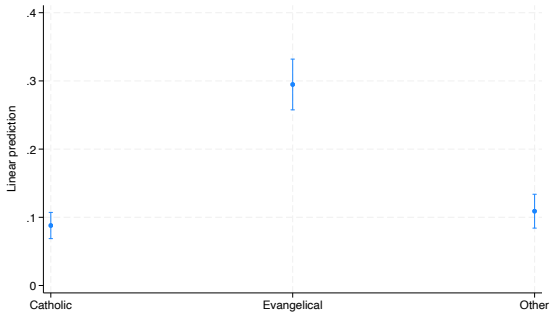
C.2 Additional Results

Figure C.1: Percentage of Respondents Receiving Help from the Catholic Church by Religious Affiliation



Note: the figure shows the estimated percentage of people receiving help from the Catholic church that are from different religious affiliations.

Figure C.2: Percentage of Respondents Receiving Help from the Church by Religious Affiliation: Controlling for Sociodemographic Characteristics



Note: The figure shows the average marginal effects alongside 95% confidence intervals of religious affiliation (Catholic, Evangelical or Other) on have received helped from a church or religious organization to cope with economic hardship. The regression includes the following covariates: household income, age and age-squared and gender.

C.3 The discretionary power of evangelical pastors

Respondents were asked to describe a situation in each they faced economic hardship. The specific item woding is as follows:

"We are interested in understanding how people cope with economic difficulties. By explaining this in detail, you will help us better understand how Brazilians deal with the many economic challenges they face in life and how we can improve the support network available in these situations.

Think of a time when you found yourself without money due to a job loss or insufficient income. Could you describe what types of economic challenges you were facing and how you dealt with them? Did any religious organization or church help you? If so, how? It is important for us that you explain which churches or religious organizations helped you and what kind of assistance was provided (money, food, help finding a job, etc.)"

Below, I add a few quotes that demonstrate how evangelical pastors have discretionary power over the distribution of church resources (translation from Portuguese into English by the author).

- "During the Covid-19 crisis, I worked on the streets, did not have a formal job, and ended up getting sick. I found myself without money to buy medicine or even food to sustain myself. It was a pastor from the Universal Church [of the Kingdom of God] who mobilized the entire church to help everyone going through difficult times, and, thanks to God, I was supported by this help. In addition to helping me with food, it was the pastor of the church who took me to the hospital in his car. Today, I work and am very grateful to God and the Universal Church [of the Kingdom of God] for the excellent work they have done for the community."

- "My father lost his job last year and asked for help in his church network to help him find a job. The pastor of the Universal Church [of the Kingdom of God] promptly helped him by speaking with a colleague who got him a job at a company."

- "When my father became unemployed and had health problems, there were people from the Assembly of God who helped him pay for an expensive medical test. I went through a serious problem with very strong headaches and I didn't know what it was. I needed to cover the cost of the exams, so the pastor of the Assembly of God that I attend helped me with the money for the contrast MRI and other tests I needed to find out what I had at the time. Currently, my family receives a monthly food donation from the Assembly of God church. In addition to that, other newly converted members who talk about their difficult situations are also helped."

D Survey on Political Position of Bishops

In order to identify the most prominent evangelical bishops in Brazil, I first selected the churches that combined represented more than 90% of the evangelical population, as measured by the 2010 census. For each church we identified, we searched for the most influential bishop, that is, those with the highest number of followers on social media platforms (i.e., Instagram, Twitter, and Youtube) in December 2023. I also cross-validated and complemented this list with rankings from religious websites and news articles. Specifically, we used articles from the newspapers *O Globo* and Metrópoles as well as from the religious blogs *Dicas Gospel*, Sempre Família among others. In total, 21 bishops were selected (see Table D.2).

To determine the bishop's political positions in the 2014 and 2018 elections, I rely on qualitative coding of social media platforms and news articles. Three RAs coded the content of YouTube videos posted in the three months preceding each election. Of the 21 bishops, we identified 13 who had posted videos in the analyzed time period. These 13 bishops collectively posted 1010 videos in the months preceding the 2014 and the 2018 elections. We then scrapped the automatically generated subtitles from youtube videos. Based on the scrapped data, we selected the videos mentioning at least one of the terms listed in Table D.1. These terms were selected based on their relevance in the political debates at the time of the elections. Besides party and candidate names, we also include terms such as "communism." Out of the 1010 videos, 180 contained one of those terms. Upon qualitative investigation, only in 49 videos by 7 bishops contained the terms that corresponded to the meaning we intended. A common false positive error was the mention of candidates' first name (for example, "Dilma") to refer to a congregant rather than the candidate (note that in Brazil it is common to refer to a candidate by his or her first name). It was then analyzed whether the words were used in support or against candidates and parties based on the qualitative coding of two research assistants.

To complement this method for the remaining eight bishops, three RAs searched for mentions of these bishops' names linked to selected political terms (i.e., "Elections", "Support", "Politics" and the candidate names listed in Table D.1) in online newspaper articles and blogs. We limit the period of the mention to the three months before the 2014 and 2018 elections. Multiple newspaper articles referring to the political position of these eight bishops were found. In addition, some social media posts on Facebook, Instagram and Twitter were found through this google search and were relevant in determining some bishops' positions. Through this method, we identified 9 other bishops who have made their political views public during elections. There was one bishop who was explicitly neutral. Bishops for which

Table D.1: List of Words Used in Survey on Political Position of Bishops

Type	Words (Portuguese)
Candidate Name	Dilma (Rousseff), Aécio (Neves), (Fernando) Haddad, (Jair) Bolsonaro
Party Name	PT, PL, PSDB
Other Terms	Michele (Bolsonaro), Petista, Comunismo

we find no evidence of political position are considered neutral. All materials used to code the bishops' political position have been downloaded and are available upon request. The results of this survey of the political position of Evangelical bishops can be found on Table D.2.

Table D.2: Classification of Evangelical Bishops' Political Positions in 2014 and 2018 Presidential Elections

ID	Church Name	Bishop Name	2014	2018
220	Evang. Presbyterian Church	Hernandes Dias Lopes	Against D. Rousseff	Alluded to conservative morals
220	Evang. Presbyterian Church	César Augusto	M. Silva/A. Neves	J. Bolsonaro
230	Evang. Methodist Church	Paulo Rangel	No evidence	J. Bolsonaro
240	Evang. Baptist Church	Jorge Linhares	A. Neves	J. Bolsonaro
240	Evang. Baptist Church	Marcio Valadão	Neutral	J. Bolsonaro
260	Seventh-day Adventist Evang. Church	Odailson Fonseca	No evidence	Neutral
310	Evang. Church Assembly of God	José Wellington Costa Jr.	A. Neves	J. Bolsonaro
310	Evang. Church Assembly of God	José Wellington Bezerra da Costa	E. Campos	H. Meirelles/J. Bolsonaro
310	Evang. Church Assembly of God	Marco Feliciano	A. Neves	J. Bolsonaro
310	Evang. Church Assembly of God	Samuel Câmara	No evidence	J. Bolsonaro
311	Evang. Church Assembly of God Madureira	Abner Ferreira	D. Rousseff	J. Bolsonaro
319	Other Evang. Pentecostal Churches with origin in the Assembly of God	Silas Malafaia	M. Silva/A. Neves	J. Bolsonaro
340	Foursquare Gospel Church	Mario de Oliveira	E. Pereira/A. Neves	J. Bolsonaro
350	Uni. Church of the King. of God (UCKG)	Edir Macedo	D. Rousseff	J. Bolsonaro
350	Uni. Church of the King. of God	Renato Cardoso	No evidence	J. Bolsonaro
359	Other neopentecostal churches with origins in the UCKG	Agenor Duque	M. Silva	J. Bolsonaro
380	Evang. Pentecostal Church God is Love	David Miranda Neto	No evidence	No evidence
450	Other Evang. Pentecostal Churches	Josué Gonçalves	A. Neves	J. Bolsonaro
450	Other Evang. Pentecostal Churches	Josué Brandão	Against D. Rousseff	J. Bolsonaro
451	International Church of the Grace of God	R. R. Soares	Neutral	J. Bolsonaro
455	Worldwide Church of the Power of God	Valdemiro Santiago	A. Neves	J. Bolsonaro

Note: ID refers to the census codes of Evangelical denominations made available by the Brazilian Institute for Geography and Statistics.

E Descriptive Statistics of Regional-Level Variables

Table E.1: Summary Statistics of Regional-level Variables

	Mean	SD	Min	Max
Export Shock	0.083	0.766	−11.956	7.547
% Evangelical	0.188	0.080	0.043	0.434
% BF	0.093	0.060	0.003	0.229
% Emp. in exp	0.072	0.079	0.000	0.433
ln Population (2010)	17.246	0.972	13.068	21.665
ln GDP per capita (2010	9.251	0.662	7.924	11.706
ΔPT Vote Share	−0.088	0.108	−0.525	0.153
Ideology (PRS)	0.177	0.177	−0.181	0.714
Ideology (CMP)	7.497	10.215	−5.005	42.932
Trad. Morality (Pos.)	0.092	0.299	−0.298	0.998
Trad. Morality (Sal.)	0.110	0.194	−0.282	0.645
Welfare (Pos.)	−0.427	0.585	−1.837	0.589
Welfare (Sal.)	−0.099	0.206	−0.611	0.556

F Descriptive Statistics: Individual-Level Data (LAPOP)

Table F.1: Summary Statistics of Individual-level Variables

	Mean	SD	Min	Max
Cash Transfers	0.000	0.834	−1.437	1.535
Supp. Pol. establishment	0.000	0.838	−1.184	3.297
Like PT supporters	3.899	2.912	1.000	10.000
Religious Engagement	0.000	1.000	−1.570	1.423
Religion Important	0.000	1.000	−3.741	0.435
Traditional Morality	0.000	0.794	−1.140	1.523
Gender	0.498	0.500	0.000	1.000
Age	39.101	15.907	16.000	89.000
Income Index	0.000	0.857	−1.533	1.153
Education (Years)	8.491	3.885	0.000	17.000

G Notes on Data Source and Cleaning Procedures

G.1 Sectoral Crosswalk (NCM and CNAE 2.0)

Description of the procedure: Sectors in the export data are classified according to the *"Nomenclatura Comum do Mercosul 2012"* (NCM 2012). RAIS classifies sectors according to the "Classificaćão Nacional de Atividades Econômicas (CNAE). In RAIS 2010 and subsequent databases, CNAE 2.0 classes and subclasses are included.

I convert NCM and CNAE 2.0 into ISIC Rev. 4 because ISIC Rev. 4 is more general and easily combined with both of classification systems. In order to do that, I use the conversion tables provided by the Brazilian Statistical Office.

The major problem that I found in constructing the crosswalk between NCM 2012 and ISIC Rev 4 is that 95 NCM classes that are included in the export database in the period that I analyze (2010-2018) are classified in the NCM2012-ISIC Rev. 4 conversion table as "8999-Not classified". Moreover, exports in deflated USD FOB (USD Free On Board, which I deflated for baseline year, i.e. 2010) decreased more in the analyzed period than for the other NCM 9251 sectors included in the export database.

I partially solve this problem by converting NCM 2012 classified as "8999-Not classified" into CNAE 2.0 and then converting CNAE 2.0 into ISIC Rev. 4 based on the conversion tables provided by the Brazilian Statistical Office. By doing that, I reduced the number of unclassified sectors from 95 to 38. I manually linked the remaining 38 sectors to ISIC Rev. 4.

At a first glance, it might seem more straightforward to convert NCM 2012 into CNAE 2.0 and then directly merge to RAIS' database. However, many sectors that are present in the export database are not preset in the NCM 2012 - CNAE 2.0 conversion table provided by the Brazilian Statistical Office. Namely, out of the 9346 sectors in the export database, 1200 are not included in this conversion table. Therefore, using ISIC Rev. 4. is preferable because it prevents greater loss of information. Since constructing this crosswalk requires multiple steps, I manually checked a random sample of the resulting conversion table.

Data sources:

- CNAE 2.0. classification table comes from the Brazilian Statistical Office (https://concla.ibge.gov.br/classificacoes/correspondencias/atividades-economicas.html).
- ISIC 4.0 classification table is sourced from the United Nations statistics website (https://unstats.un.org/unsd/classifications/Econ). I also use a detailed description of ISIC 4.0 classes (https://unstats.un.org/unsd/publication/seriesm/seriesm_4rev4e.pdf)) to check the crosswalks that I construct as explained above.

G.2 Computing number of jobs using RAIS

RAIS is a database at the contract level, i.e., each row contains information about a contract. Among other details, the database contains information about in which months of a given year a contract was active. I divide the number of months for which a contact is active in

a given year by 12. I then sum this value by sector and CZ to get the number of jobs by sector and CZ L_{srt}.

H Robustness Checks

Table H.1: Effects of Export Decline on Votes for the PT (2010–2018) with Controls for Trends in CZs with Similar Labor Market Specialization in Export Industries in the Base Year

	DV: Δ PT Vote Shares				
	(1)	(2)	(3)	(4)	(5)
ΔEPW$_t$	0.0120	0.0230	0.0201	0.0154	-0.0133
	(0.0221)	(0.0152)	(0.0134)	(0.0124)	(0.0483)
Evangelicals (dummy)	-0.0550	-0.0550	-0.0511	-0.0566	-0.0508
	(0.0696)	(0.0693)	(0.0685)	(0.0697)	(0.0706)
Catholics (dummy)	-0.0757	-0.0787	-0.0791	-0.0793	-0.0732
	(0.0578)	(0.0572)	(0.0567)	(0.0573)	(0.0581)
Evangelicals (dummy)	0.0614**	0.0590**	0.0597**	0.0624**	0.0713***
× ΔEPW$_t$	(0.0257)	(0.0253)	(0.0249)	(0.0254)	(0.0273)
Observations	1114	1114	1114	1114	1114
Adjusted R^2	0.821	0.820	0.821	0.821	0.820
Initial % of jobs × year	Iron ore	Crude oil	Meat	Cereals	All
Evangelicals (dummy) × year	✓	✓	✓	✓	✓
State × year FE	✓	✓	✓	✓	✓
CZ controls	✓	✓	✓	✓	✓

Note: Stacked first difference estimates at the commuting zone (CZ) level. Columns (1) to (4) control for share of jobs by election-year in one of the following industries: iron ore, crude oil, meat and cereals, respectively. Column (5) control for the shares of jobs by time in all these four industries. All models include state by year fixed effects and the following CZ-level controls: share of workers in export sectors, log GDP per capita and log population in base year. All variables are standardized. Standard errors clustered at the meso-region by year level in parenthesis. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table H.2: Robustness: Lags

	DV: Δ PT Vote Shares (2006-2010)				
	(1)	(2)	(3)	(4)	(5)
ΔEPW_{t+8}	0.00917	0.0164	0.0103	-0.00533	0.00898
	(0.0114)	(0.0129)	(0.0110)	(0.0173)	(0.0109)
Evangelicals (dummy)				-0.0443	
				(0.0624)	
Evangelicals (dummy) ×		-0.0194			
ΔEPW_{t+8}		(0.0198)			
Catholics (dummy)		0.0902			
		(0.0593)			
Evangelicals (cont.)			0.0329		-0.0516
			(0.0827)		(0.0658)
Evangelicals (cont.)×			-0.00465		
ΔEPW_{t+8}			(0.00982)		
Catholics (cont.)			0.00551		-0.0719
			(0.0604)		(0.0654)
Catholics (dummy) ×				0.0220	
ΔEPW_{t+8}				(0.0213)	
Catholics (cont.) ×					0.00859
ΔEPW_{t+8}					(0.00998)
Observations	1114	1114	1114	1114	1114
Adjusted R^2	0.799	0.802	0.803	0.801	0.803
Evangelicals (dummy) × year		✓			
Evangelicals (cont.) × year			✓		
Catholics (dummy) × year				✓	
Catholics (cont.) × year					✓
State × year FE	✓	✓	✓	✓	✓
CZ controls	✓	✓	✓	✓	✓

Note: Stacked first difference estimates at the commuting zone (CZ) level. The dependent variable is the lagged changes in vote share for the PT at CZ level. Changes in vote shares are computed as the difference between the percentage of valid votes cast for the PT in 2006 or 2010 minus 2002. Models (2) and (3) include interaction between the export shock and the percentage of Evangelicals at the CZ level as a dummy and a continuous variable, respectively. Columns (4) and (5) do the same but with the concentration of Catholics. All models include state by year fixed effects and the following CZ-level controls: share of workers in export sectors, log GDP per capita and log population in base year. All variables are standardized. Standard errors clustered at the meso-region by year level in parenthesis. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table H.3: Robustness: Controlling for Broad Shares (ISIC 2-Digits)

	DV: Δ PT Vote Shares		
	Pooled	Election 2014	Election 2018
	(1)	(2)	(3)
ΔEPW_t	0.0104	0.0266	0.00342
	(0.0144)	(0.0340)	(0.0182)
$\text{Evangelicals}_{\text{Binary}} \times$	0.0605**	0.0681	0.0542**
ΔEPW_t	(0.0241)	(0.0596)	(0.0273)
$\text{Evangelicals}_{\text{Binary}}$	0.0360	-0.0249	0.0359
	(0.0640)	(0.0688)	(0.0747)
Constant	2.986***	3.166***	2.810***
	(0.499)	(0.562)	(0.850)
Observations	1114	557	557
R^2	0.847	0.713	0.804
CZ controls	✓	✓	✓
State FE × Year	✓	✓	✓
ISIC-2 Shares	✓	✓	✓

Note: stacked first differences estimates at the commuting zone (CZ) level. All specifications control for shares of employment in ISIC 2-digits (industry groups) export industries. The shares used to compute the export shock are ISIC 4-digits (industry classes). For example, "extraction of crude petroleum and natural gas" is ISIC group 06, while "extraction of natural gas" is ISIC class 0620 is "extraction of natural gas". * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table H.4: Pre-Trends for Industries with Highest Rotemberg Weights

	DV: Δ PT Vote Shares (2006-2010)			
	(1)	(2)	(3)	(4)
% $\text{Jobs}_{\text{Nat. Gas}}$	0.0988	0.0896		
	(0.0697)	(0.0773)		
$\text{Evangelicals}_{\text{Binary}}$ ×		0.0468		
% $\text{Jobs}_{\text{Nat. Gas}}$		(0.152)		
% $\text{Jobs}_{\text{Disp. Waste}}$			-0.302	-0.888
			(0.681)	(0.750)
$\text{Evangelicals}_{\text{Binary}}$ ×				2.879
% $\text{Jobs}_{\text{Disp. Waste}}$				(2.661)
Observations	1114	1114	1114	1114
R^2	0.809	0.811	0.809	0.811
$\text{Evangelicals}_{\text{Binary}}$ × Year	✓	✓	✓	✓
State × Year FE	✓	✓	✓	✓
CZ-level controls	✓	✓	✓	✓

Note: stacked first differences estimates at the commuting zone (CZ) level. Dependent variable are changes in vote share for the PT between 2002 and 2006 or 2002 and 2010. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table H.5: Robustness: Controlling for Industries with Highest Rotemberg Weights

	DV: Δ PT Vote Shares (2006-2010)			
	(1)	(2)	(3)	(4)
ΔEPW_t	0.0389**	0.0221	0.0385**	0.0219
	(0.0158)	(0.0140)	(0.0154)	(0.0136)
$\text{Evangelicals}_{\text{Binary}} \times$		0.0592**		0.0585**
ΔEPW_t		(0.0253)		(0.0255)
% $\text{Jobs}_{\text{Nat. Gas}}$	-0.311	-0.268		
	(0.369)	(0.338)		
$\text{Evangelicals}_{\text{Binary}}$		-0.0548		-0.0534
		(0.0693)		(0.0692)
% $\text{Jobs}_{\text{Disp. Waste}}$			5.542	5.219
			(4.647)	(4.514)
Observations	1114	1114	1114	1114
R^2	0.829	0.830	0.829	0.830
$\text{Evangelicals}_{\text{Binary}} \times$ Year				
CZ-level controls	✓	✓	✓	✓
State × Year FE	✓	✓	✓	✓

Note: stacked first differences estimates at the commuting zone (CZ) level. Specifications control for top one of the two industries with highest Rotemberg Weights (i.e., initial employment shares most predictive of the shift-share instrument ΔEPW_t). Columns (1) and (2) control for the share of jobs in natural gas (ISIC class 0620). Columns (3) and (4) control for the share of jobs in disposable waste (ISIC class 3821). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

I Standard Errors

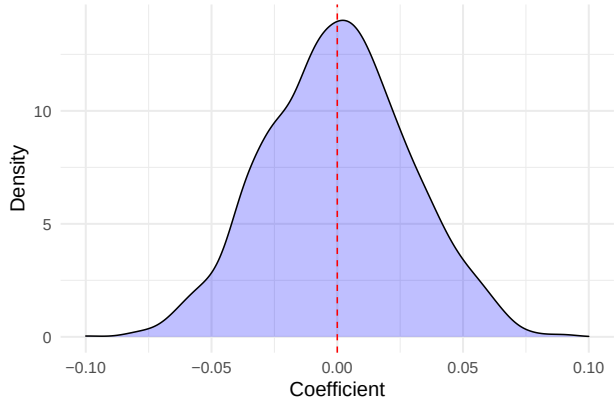
Table I.1: Accounting for Spatial Autocorrelation

	DV: Δ PT Vote Shares			
	Pooled (2014-2018)		2018 Election	
	(1)	(2)	(3)	(4)
ΔEPW_t	0.0209	0.0209	0.0136	0.0136
	(0.0178)	(0.0148)	(0.0161)	(0.0139)
$\text{Evangelicals}_{\text{Binary}}$	0.0596*	0.0596*	0.0604**	0.0604*
ΔEPW_t	(0.0313)	(0.0331)	(0.0296)	(0.0309)
$\text{Evangelicals}_{\text{Binary}}$	-0.0857	-0.0857	-0.100	-0.100
	(0.0716)	(0.0805)	(0.0883)	(0.0897)
$\text{Catholics}_{\text{Binary}}$	-0.0790	-0.0790	-0.0908	-0.0908
	(0.0701)	(0.0829)	(0.0852)	(0.0919)
Observations	1116	1116	558	558
R^2	0.131	0.131	0.155	0.155
State × year FE	✓	✓		
State FE			✓	✓
Conley_{1999}	100km	200km	100km	200km

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

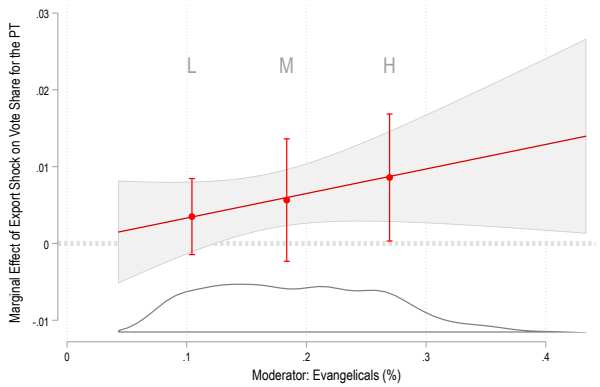
Figure I.1: Estimates Distribution for Interaction between Random Shifts Placebo by Evangelicals



Note: The figure plots the distribution of estimates for 10k iterations of the coefficient of the interaction between the shift-share placebo (in which real shares are interacted with a normally distributed random shift variable) and the Evangelical dummy. The rest of the specification is as in equation 3. This is a test proposed by Adão, Kolesár and Morales (2019) to evaluate the concern that in shift-share designs residuals of units with similar shares have correlated residuals. They point out that if the share of statistically significant coefficients with a 95% confidence level is expressively superior to 5%, this suggests overrejection of the null hypotheis, representing a threat to inference. In my test, 5.5% of the coefficients are statistically significant at the 95% confidence level, suggesting that there is no overrejection problem.

J Linearity of the Interaction

Figure J.1: Evaluating the linearity assumption



Note: These figures plot the both the marginal effect of the Export Shock on vote share for the PT, conditional on the level of Evangelicals. The vertical lines plot the binning estimator proposed by Hainmueller, Mummolo and Xu (2018) to evaluate the linearity assumption.

K Robustness of the Interaction Effect

Table K.1: Robustness of the Interaction

	DV: Δ PT Vote Shares					
	Pooled (2014-2018)			2018 Election		
	(1)	(2)	(3)	(4)	(5)	(6)
ΔEPW$_t$	0.0233*	0.0254*	0.0161	0.00939	0.0175	0.0111
	(0.0132)	(0.0153)	(0.0154)	(0.0123)	(0.0155)	(0.0167)
Evangelicals$_{\text{Binary}}$ × ΔEPW$_t$	0.0689**	0.0651**	0.0578**	0.0717**	0.0664**	0.0585**
	(0.0274)	(0.0277)	(0.0255)	(0.0311)	(0.0320)	(0.0290)
Evangelicals$_{\text{Binary}}$	-0.0529	-0.0497	-0.0556	-0.0965	-0.0951	-0.102
	(0.0699)	(0.0694)	(0.0686)	(0.0853)	(0.0865)	(0.0853)
Poverty$_{\text{Binary}}$ × ΔEPW$_t$	-0.00859			0.00219		
	(0.0242)			(0.0265)		
Poverty$_{\text{Binary}}$	0.253***			0.475***		
	(0.0661)			(0.0988)		
Catholics$_{\text{Binary}}$	-0.0825	-0.0757	-0.0809	-0.0992	-0.0869	-0.0959
	(0.0571)	(0.0566)	(0.0564)	(0.0863)	(0.0867)	(0.0854)
Rural pop.$_{\text{Binary}}$ × ΔEPW$_t$		-0.0169			-0.0161	
		(0.0240)			(0.0266)	
Rural pop.$_{\text{Binary}}$		0.0686**			0.0641	
		(0.0336)			(0.0545)	
Education$_{\text{Binary}}$ × ΔEPW$_t$			0.0327			0.0229
			(0.0477)			(0.0599)
Education$_{\text{Binary}}$			-0.0813*			-0.186**
			(0.0489)			(0.0816)
Constant	2.752***	3.622***	3.507***	1.927**	3.560***	3.308***
	(0.504)	(0.478)	(0.463)	(0.832)	(0.822)	(0.789)
Observations	1114	1114	1114	557	557	557
Adjusted R^2	0.825	0.821	0.821	0.775	0.759	0.762
State FE	✓	✓	✓	✓	✓	✓
Evang.$_{\text{Binary}}$ × Year	✓	✓	✓			
CZ controls	✓	✓	✓	✓	✓	✓

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Sensitivity Analysis

In this section, I assess the sensitivity of the interaction between Evangelical Population Share and ΔEPW to omitted variable bias (OVB). To do that, I replicate the regressions reported in the main text except I analyze the effect of ΔEPW across above- or below-median levels of Evangelical populations subgroups, rather than interact my Evangelical Pop. Share indicator with ΔEPW (as done in the main analyses). I then follow the recommendations of Cinelli and Hazlett (2020) to calculate the sensitivity of ΔEPW variable to OVB within each subgroup analysis.

Table K.2 reports the "robustness values" of ΔEPW to OVB in each subgroup analysis for the change in PT vote share outcome variable. These values refer to the residual variation on both the treatment and outcome that a hypothetical omitted variable would have to explain in order to cause either the estimated coefficient on ΔEPW to fall to 0 ($RV_{q=1}$) or the 95% confidence interval to cross 0 ($RV_{q=1,\alpha=.05}$). I find that a hypothetical omitted variable would have to account for 17.2% or 8.3% of the residual variation on the treatment and outcome in order to reduce the coefficient or lower bound of the 95% confidence interval to 0, respectively.

In order to make the robustness value more concrete, Figure K.1 plots changes in the estimated coefficient if an unobserved variable were added to the model with a partial R^2 benchmarked to that of two covariates that I do observe: share of local employment in an export sector and the log of GDP. These figures show that a hypothetical, unobserved confounder would have to account for 15 times the residual variation of the Export Sector Employment Share or 7 times the natural log of GDP.

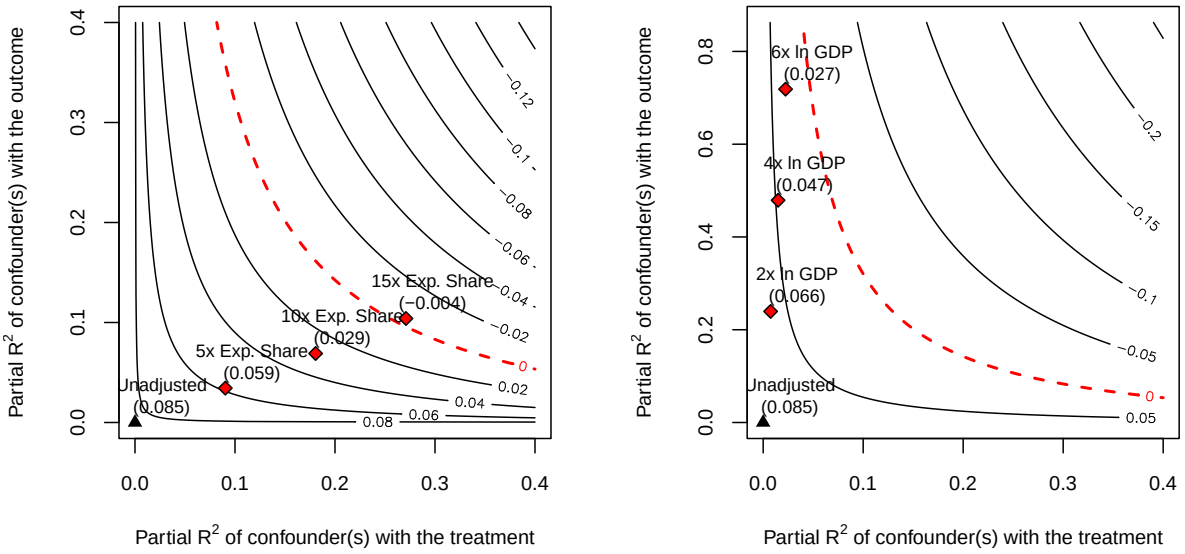
I report similar estimates for the above-median Evangelical subsamples for my "Centers of Gravity" outcomes in Table K.3. The results are similar, requiring a confounding variable that explains a considerably large share of the residual variation in the treatment and outcome.

Table K.2: Subsample Analysis, ΔPT Vote Share

Evangelical Pop. Share:	Above Median	Below Median
	(1)	(2)
ΔEPW	0.085***	0.001
	(0.025)	(0.015)
$R^2_{Y\sim D\|\mathbf{X}}$	3.4%	0%
$RV_{q=1}$	17.2%	0.2%
$RV_{q=1,\alpha=.05}$	8.3%	0%
Obs.	279	279
Controls	✓	✓
State FE	✓	✓
Adj. R^2	0.644	0.806

Note: * p < 0.1, ** p < 0.05, *** p < 0.01. Reports coefficients from OLS regressions. Standard errors clustered at the meso-region by year level in parenthesis. All variables are standardized.

Figure K.1: Sensitivity plots, with



(a) Export Employment Share

(b) GDP

Table K.3: Subsample Analysis, Centers of Gravity Outcome

DV:	Left-Right (CHES)	Left-Right (CMP)	Redist. (CHES)	Welfare (CMP)	Relig. (CHES)	Trad. M (CMP)	Anti-estab. (CHES)
ΔEPW	-0.096^{***}	-0.098^{***}	0.043^{***}	0.037^{***}	-0.078^{***}	-0.079^{***}	-0.070^{***}
	(0.024)	(0.026)	(0.012)	(0.010)	(0.020)	(0.019)	(0.020)
$R^2_{Y\sim D\|\mathbf{X}}$	4.30%	3.80%	2.50%	3.70%	4.20%	5.00%	3.40%
$RV_{q=1}$	19.14%	17.94%	14.70%	17.73%	18.81%	20.40%	17.18%
$RV_{q=1,\alpha=.05}$	8.43%	7.06%	3.38%	6.82%	8.05%	9.86%	6.19%
Obs.	279	279	279	279	279	279	279
Controls	✓	✓	✓	✓	✓	✓	✓
State FE	✓	✓	✓	✓	✓	✓	✓
Adj. R^2	0.758	0.748	0.736	0.772	0.710	0.700	0.699

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Reports coefficients from OLS regressions. Standard errors clustered at the meso-region level in parenthesis. Samples are restricted to regions with above-median shares of the population identifying as Evangelical. All variables are standardized.

L Effects on Turnout

Table L.1: Effects on Turnout

	DV: Δ Turnout				
	(1)	(2)	(3)	(4)	(5)
ΔEPW$_t$	-0.0104	-0.00670	-0.0123	-0.0399	-0.0162
	(0.0181)	(0.0169)	(0.0204)	(0.0413)	(0.0187)
ΔEPW$_t$ × Evangelicals$_{Binary}$		-0.0123			
		(0.0454)			
Evangelicals$_{Binary}$		0.0680		0.0195	
		(0.0882)		(0.0729)	
Catholics$_{Binary}$		0.185**		0.160**	
		(0.0748)		(0.0797)	
ΔEPW$_t$ × Evangelicals$_{Cont.}$			-0.0114		
			(0.0201)		
Evangelicals$_{Cont.}$			0.340***		0.303***
			(0.0812)		(0.0767)
Catholics$_{Cont.}$			0.383***		0.348***
			(0.0807)		(0.0783)
ΔEPW$_t$ × Catholics$_{Binary}$				0.0422	
				(0.0442)	
ΔEPW$_t$ × Catholics$_{Cont.}$					0.0265
					(0.0193)
Observations	1114	1114	1114	1114	1114
R^2	0.736	0.739	0.745	0.739	0.745
Evangelicals$_{Binary}$ × Year		✓			
Evangelicals$_{Cont.}$ × Year			✓		
Catholics$_{Binary}$ × Year				✓	
Catholics$_{Cont.}$ × Year					✓
State × Year FE	✓	✓	✓	✓	✓
CZ controls	✓	✓	✓	✓	✓

Note: * p < 0.1, ** p < 0.05, *** p < 0.01. Reports coefficients from OLS regressions. Standard errors clustered at the meso-region by year level in parenthesis. All variables are standardized.