



A panel data analysis of Latin American populism

Nicolás Cachanosky¹  · Alexandre Padilla¹

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Abstract

This paper provides new estimates of the effects of left-of-center populist regimes on economic developments in the 21st century in Latin America. In contrast to earlier research, we take account of the price shocks that may also have affected economic development during these regimes' time in office. In general, we find that left-populist regimes reduced per capita real income in both the short and long run, after accounting for those price shocks.

Keywords Latin America · Populism · Panel data regression · Income

JEL Classification E02 · P11 · P51

1 Introduction

This paper provides new estimates of the effects of left-of-center populist regimes on economic developments in the 21st century. We focus on five Latin American countries in which left-leaning populist leaders rose to power and significantly changed public policies. In contrast to earlier research, we take into account the price shocks that may also have affected economic development during these regimes' time in office. In general, we find that these regimes reduced per capita real income in both the short and long run, after accounting for those price shocks. We emphasize that our analysis focuses on left-wing populism, not on right-wing populism, nor on all types of populism in general.

There are three themes in the recent research on populist regimes: (1) determining their main characteristic, (2) explaining their rise to power, and (3) analyzing their policy and economic impacts. This paper belongs to the third, although we

✉ Nicolás Cachanosky
ncachano@msudenver.edu

Alexandre Padilla
padilale@msudenver.edu

¹ Department of Economics, Metropolitan State University of Denver, Campus Box 77, P.O. Box 173362, Denver, CO 80217, USA

discuss our assumptions with respect to the nature of populism and its ability to radically change public policies.

Section 2 reviews the literature. Section 3 discusses our choice of countries and their respective populist periods. Section 4 discusses our data and regression analysis. Section 5 concludes.

2 Literature review

Latin American left-leaning populism is often associated with high economic and social costs. Yet, much of the populist experience has coincided with high commodity prices. On one hand, populist policies tend to depress the economy. On the other hand, high commodity prices can help these countries' economies. In addition to these two effects, the 2008 financial crisis took place while a number of populist regimes were in office. The international costs of this crisis should not be attributed to populism. Therefore, to properly analyze the effect of left-leaning populist regimes, we must control for such phenomena and events.

The challenge is not only to properly assign economic results to populist regimes, but also to properly define what populism is. The literature makes a significant effort to deal with the problem of how to define populism (Abts and Rummens 2007; Coles 2012; de la Torre 2016, 2017; Hawkins 2003; Rhodes-Purdy 2015; Rodriguez Braun 2012; Rodrik 2018a, b; Weyland 2001, 2003, 2013). One challenge in defining this type of political regime is to avoid focusing on exacerbated characteristics that other political regimes also possess. Doing so could lead to mischaracterizing a government as populist when it is not. For instance, while mobilization and a charismatic leader are usually observed in a populist regime, this does not mean that a nonpopulist government cannot exhibit such characteristics. Any democracy is expected to exhibit some degree of mobilization and to have charismatic leaders. Therefore, any democratic government could be defined as a populist government to a certain degree. This approach would defeat the purpose of defining the term, as it would fail to clearly distinguish populist from nonpopulist governments.

To avoid this issue, we follow the scholars who adopt an institutional approach to defining populism (Abts and Rummens 2007; de la Torre 2016; Weyland 2001). In this approach, the populist government is one that finds the source of its legitimacy in "the people" rather than the rule of law. As a result, the populist regime maintains the democratic practice of electing officials but has an anti-republic conception of the role of government. It has also been noted that while populism erodes the robustness of the political framework, a weak institutional framework is a prerequisite for a populist regime to gain power (Riker 1988). For this reason, we should not be surprised to find similarities between left-of-center populism (which characterizes Latin American countries that have adopted populist policies), right-of-center populism, and authoritarian forms of government such as fascism (de la Torre 2016;

Ocampo 2015b). This is an important point; pre-existing weak institutions allow populist regimes to rise to power and execute radical reforms.¹

Typically, a macroeconomic analysis of populism emphasizes the unsustainable nature of its policies (Dornbusch and Edwards 1990; Kaufman and Stallings 1991; Rodriguez Braun 2012). The situation can be illustrated through an analogy where the populist is akin to the head of a household who takes his family on a luxury vacation by depleting their savings account and selling their furniture (capital stock consumption). The short-run effect is an increase in well-being, which the head of household uses as proof of his policies' success. However, the long-run effect is the big bill to pay once the vacation is over. Without access to credit, the household must resort to a spending adjustment (an austerity plan). At this point, the head of household can attempt to use "us versus them" rhetoric to exculpate himself and play the victim card (where "them" is defined by the populist leader at his convenience). The family was led to consume above its means or, to put it in macroeconomic terms, its aggregate demand went beyond its aggregate supply. How the economic imbalances emerge under populism depends on a number of factors, such as the size of the economy and the regulatory framework. For example, economic imbalances will manifest differently depending on whether the exchange rate is fixed or floating.²

Populist regimes tend to be expansionary in the short run, but as inconsistencies become unavoidable, there is a contraction in the long run (Dornbusch and Edwards 1990). A short-run gain (A) is more than outweighed by the long-run loss (B); $A + B < 0$. It can be easy for a populist regime, especially if it takes office shortly after a crisis, to show GDP improvements in the short run if the long-run inconsistencies are ignored. Furthermore, as shown by Cachanosky and Padilla (2019), it is also likely that a populist regime will experience a steady deterioration of their institutional framework (i.e. rule of law, perception of corruption, etc.). On one hand, a populist regime is likely to produce a boom-and-bust economic cycle. On the other hand, it is also likely to produce a steady decline of institutional quality.

Insightful empirical analysis looking at the economic impact of populism can be found in Edwards (2019, 2010), Grier and Maynard (2016), and Ocampo (2015b). This paper complements these studies by using a different methodology. In particular, we use panel data regressions that show results consistent with these earlier studies, particularly with Grier and Maynard's (2016) synthetic control method analysis of Venezuela.

¹ For a broader discussion of political party institutions, see Levitzky and Ziblat (2018).

² A Keynesian policy is not necessary indicative of a populist leader despite its similarities to a typical left-leaning populist economic policy (Bresser Pereria and Dell'Acqua 1991). The fact that populist leaders tend to apply Keynesian policies does not mean that applying a Keynesian policy makes a government populist.

Table 1 Countries and years of populism

Country	Beginning	End	Years of populism
Argentina	2003	2015	12
Bolivia*	2006	2016	10
Ecuador*	2007	2016	9
Nicaragua*	2007	2016	9
Venezuela*	1999	2016	17

*Denotes populist government is still in office by the end of the dataset

3 Left populism in Latin America: country sample and data

3.1 Country sample

Our sample consists of five countries that are representative of left-of-center populist policies in Latin America. Arguably, most of Latin America can be described as an ongoing populist experiment, with various countries experimenting with different degrees and types of populism.³ However, the countries we present below (Table 1) offer outlier cases of extreme left-of-center populist policies.⁴

Argentina is the only country in our sample for which the populist government is no longer in office at the end of our dataset. For Argentina, the period from 2003 to 2015 includes the presidencies of Néstor Kirchner (2003–2007) and his wife, Cristina F. de Kirchner (2007–2015) (the Kirchner–Kirchner administration). Both come from the political party Partido Justicialista, founded by Juan D. Perón in 1947, the populist leader of Argentina.

Bolivia's dataset covers the presidency of Evo Morales (2006–present) from the Movement for Socialism party, founded in 1995.⁵ Ecuador's populism is represented by the presidency of Rafael Correa (2007–2016) from the PAIS Alliance, founded in 2006.⁶ Nicaragua's dataset covers the presidency of Daniel Ortega (2007–present) from the Sandinista National Liberation Front, founded in 1961. Ortega also served as president of Nicaragua from 1985 to 1990. Finally, the most explicit case of populism is captured in Venezuela's dataset with the presidencies of Hugo Chavez (1999–2013) and Nicolás Maduro (2013–present).

In most cases, populist regimes take office soon after an economic or social crisis involving discredited political leaders. The confusion the crisis produces in the median voter allows populist leaders to emerge as new candidates with a promise of change. The crisis and the lack of new and respected candidates in the political

³ Present-day Brazil represents a case of right-wing populism, making it an outlier among Latin America's left-wing populist regimes (Edwards 2019).

⁴ We leave out countries where a significant change in populist policies is contestable, such as Lula da Silva's presidency in Brazil. In da Silva's case, populist rhetoric has not been translated into policy.

⁵ Evo Morales resigned to the Presidency in 2019, date that falls outside our sample.

⁶ Correa's presidential term ended in 2017, date that falls outside our sample.

arena make it more likely that populist rhetoric will attract the median voter. These populist leaders find a democratic way to the president's office rather than deposing a government through force.

These five countries experienced such extreme cases of left-wing populism for two reasons. The first is the presence of weak institutions that do not filter out candidates with authoritarian inclinations. This weak institutional framework also manifests as discredited political parties are unable to compete with new candidates who base their campaigns on the promise of being different. The second reason is the high price of commodities during these leaders' regimes. The financial benefits from exporting these high-priced commodities allowed the populist leaders to extend their tenures.

Under all five regimes in our sample, the populace experienced a loss of media freedom as captured by the Freedom's House *Freedom of the Press* report. In addition, three of these countries—Argentina, Ecuador, and Venezuela—ranked in the bottom tenth percentile worldwide in the Fraser Institute's *Economic Freedom of the World* index. Moreover, most cases have experienced the nationalization of domestic and foreign firms. Apart from Ecuador, all five countries have also seen a deterioration in the control of corruption as measured by the World Bank's *World Governance Indicators*. It is to be expected that these institutional changes would reduce output. Since economic agents are uncertain about the institutional framework they will face and investment is irreversible to some degree, investment slows down and eventually bottleneck effects arise.

3.2 Data

There is no objective measure, or index, of populism.⁷ Therefore, our choice of populist periods and countries requires is necessarily arbitrary. Nonetheless, we think that our choice provides a representative sample of what are commonly referred to as left-populist governments in Latin America.⁸

Our dependent variable of interest is GDP per capita (PPP 2011 int'l dollars).⁹ We are interested in observing any discernible and significant impact of populist regimes on the level of real output controlling for effects such as those mentioned earlier (commodity prices and the 2008 crisis). Figure 1 depicts the GDP per capita (PPP) for each populist regime; a dot indicates the beginning of the populist regime. Argentina and

⁷ An exception is the measure of populism developed by Hawkins (2009). However, an important issue with this measure is its subjective component. The index is developed by observing presidential speeches and looking for keywords that are representative of populist leaders. This method can lead to odd results, such as Argentina's 1990s president Carlos S. Menem having a higher populist score than Néstor Kirchner. Hawkins' work looks at populism as a discourse, while we are concerned with populism as implemented policy. Another exception is Ocampo (2015a, b). Even though Ocampo examines implemented policy, his measure is tailored for Argentina.

⁸ According to Edwards (2019), Mexico since 2018 and Brazil since 2019 would be characterized as populist regimes. These two cases, however, fall outside our dataset.

⁹ We look at PPP-adjusted GDP to consider not only changes in income but also changes in the cost of living under these populist regimes.

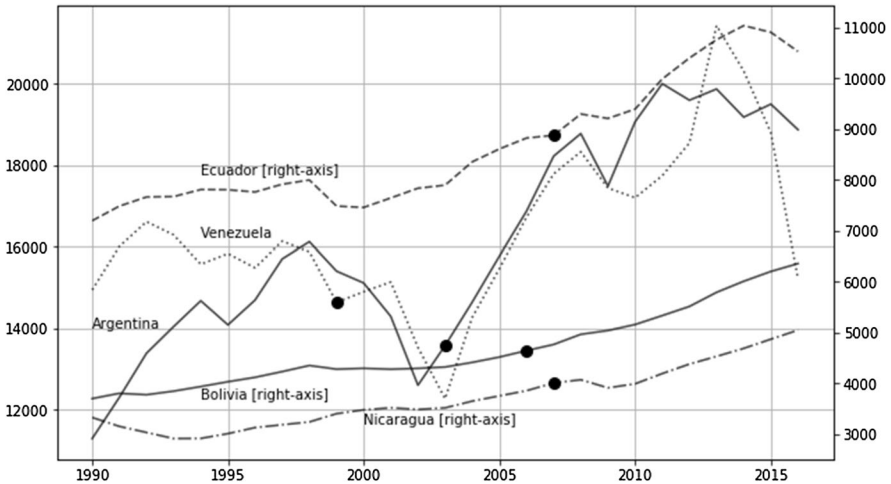


Fig. 1 GDP per capita (2011 int'l dollars), 1990–2015. *Note:* Dots denote the beginning of the populist regime. *Source:* Maddison Project Database, version 2018. Bolt, Jutta, Robert Inklaar, Herman de Jong and Jan Luiten van Zanden (2018), “Rebasing ‘Maddison’: new income comparisons and the shape of long-run economic development,” Maddison Project working paper 10

Venezuela clearly follow the previously mentioned A and B pattern of unsustainable growth in the short run followed by a stagnation or crisis in the long run. Ecuador may show similar behavior, but it is too soon to tell given the limitations of our dataset.

A few features can be observed in Fig. 1. First, for most countries (except for Venezuela), left-populist regimes take office with an already upward trend in GDP per capita which, at least in some cases, does not depict a clear change in slope. Second, the effect of the 2008 crisis can be clearly seen in Argentina and Venezuela. Third, also in Argentina and Venezuela, we observe a crisis before a high rate of GDP growth. This finding implies that it can be misleading to assign high growth rates to left-populist policies; it is possible that what happened in these cases is a “rebound” effect after the sharp fall in GDP. This reading particularly applies to Argentina, where the Kirchner–Kirchner administration is credited with good economic performance.

A disadvantage of our regression is that it uses yearly data. Our dependent variable, as well as some controls, are not available at a higher frequency. While higher frequency data (such as quarterly data) would provide more information and degrees of freedom to our regression analysis, such frequency is not available in our sample.

4 Model and analysis

4.1 Regression on GDP per capita (PPP) levels

We represent the five populist regimes defined in Table 1 as dummy variables (1 = left-populist regime, 0 = non-left-populist regime). We also include three

countries to represent non-populist regimes: Chile, Colombia, and Perú. Figure 1 shows that GDP for each left-populist country is at different levels. Therefore, our approach is a panel regression with fixed effects (FE). The FE specification has a series of advantages. It uses an independent intercept for each country, allowing us to control for the different levels of each dependent variable. In addition, it allows us to control for non-observable characteristics that are constant in each country but differ across countries, such as cultural, institutional, and geographic differences that may influence income levels. Because of this property, the fixed effect intercepts contribute to avoiding omitted variable bias. This is a valuable feature for a geographic region with limited data.

We estimate a total of four models. Our first model looks at the effect of all years of populism on the log of GDP per capita (PPP). Our second model differentiates between short-run and long-run effects of left populism following the “A” and “B” effects discussed above. The short run is defined as the first 5 years of populism and the long run is defined as the remaining years after the first 5 years. Models three and four are similar to models one and two, but the independent variable is the percent change of GDP per capita (PPP) instead of the log of GDP per capita. In turn, each of the four models are run with six different specifications (different controls and estimation methodologies). Table 2 summarizes our models. Our general model is the following:

$$y_{i,j} = \alpha_i + \beta_1 \cdot TT_t + \beta_2 P_t + \beta_3 (P_t \cdot TT_t) + \beta_4 X_{i,t} + \beta_5 Y_{i,t-1} + \varepsilon_{i,t}$$

where subscript *i* denotes the country and subscript *t* denotes the time period; α_i is the country fixed effect; *TT* is the time trend; *P* is the left-populist regime dummy; *X* is a set of control variables; and ε is the error term. Dependent variable *y* denotes the log of GDP or the change in the log of GDP depending on the model specification.

Our controls include (1) a time trend (recall the trends observed in Fig. 1), (2) the percent change of U.S. GDP to account for foreign shocks, (3) a composite of commodity prices (price shocks), (4) the nominal exchange rate, (5) the real interest rate, (6) a dummy for sovereign debt default, (7) a dummy for economic crisis, (8) the Economic Freedom of the World index (EFW), and (9) the lagged value of the dependent variable.

The short-term effect is a dummy variable that controls for level and time-trend breaks in the model. In short, the dummy variable is capturing whether before and after 5 years of a populist regime we can observe a change in either the level or the growth rate of the log of GDP (and similarly in the change of the log of GDP). For instance, a difference in level can capture short-run gains at the expense of long-run losses.

Table 2 Summary of regression models

	Model 1	Model 2	Model 3	Model 4
Dependent variable	Log of GDP per capita (PPP)	Log of GDP per capita (PPP)	% GDP per capita (PPP)	% GDP per capita (PPP)
Populism treatment	All years	Short run and long run	All years	Short run and long run
Number of model specifications	6	6	6	6

Table 3 FE and AB panel data for log of GDP per capital (PPP), all populist years

	(1) FE	(2) FE	(3) FE	(4) AB	(5) AB	(6) AB
Time trend	0.024*** (0.00)	0.020** (0.00)	0.019** (0.00)	0.002* (0.00)	0.004*** (0.00)	0.005 (0.00)
Populism (level)	-0.172** (0.03)	-0.306*** (0.05)	-0.299** (0.08)	0.036 (0.02)	-0.072** (0.02)	-0.001 (0.05)
Populism (trend)	0.003 (0.00)	0.008 (0.00)	0.010 (0.01)	-0.001 (0.00)	0.003** (0.00)	-0.000 (0.00)
% US GDP		0.000 (0.00)	-0.007 (0.00)		0.006*** (0.00)	0.009*** (0.00)
Commodity price		0.002* (0.00)	0.002* (0.00)		0.001*** (0.00)	0.001*** (0.00)
Exchange rate		-0.000 (0.00)	-0.000** (0.00)		-0.000 (0.00)	0.000 (0.00)
Real interest rate		-0.000 (0.00)	-0.002* (0.00)		0.000 (0.00)	0.001 (0.00)
Default		-0.017 (0.01)	0.007 (0.02)		0.014 (0.01)	0.028* (0.01)
Crisis		-0.097 (0.05)	-0.106 (0.07)		-0.108*** (0.02)	-0.129*** (0.02)
EFW			0.039 (0.03)			0.002 (0.01)
Lag 1 of ln(GDP)				0.894*** (0.04)	0.780*** (0.04)	0.843*** (0.06)
Constant	8.790*** (0.04)	8.725*** (0.04)	8.497*** (0.15)	0.946** (0.31)	1.877*** (0.32)	1.265* (0.55)
R2 within	0.8065	0.8557	0.8780			
R2 overall	0.0759	0.0230	0.0074			
R2 between	0.0135	0.1687	0.1393			
Observations	216	171	115	200	156	93
Groups	8	7	7	8	7	7

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

The nominal exchange rate and the real interest rate have a daily frequency, while our dependent variable has a yearly frequency. While this situation is not ideal, we still decided to include these regressors to capture any limited statistical information they might bring to the model. The EFW index has fewer observations than the other regressors, so the model that uses this control must drop a few years of observations. The trade-off with respect to this regressor is to include some institutional control at the expense of losing some years of data. To account for autocorrelation in the dependent variables, we repeat our three specifications mentioned above, including a lagged term of the dependent variable. To minimize the Nickell bias produced by the lagged term, we run an Arellano–Bond (AB) estimation for the models with an autoregressive term.

Since our panel has more time periods than sections, we use only one lagged term to minimize the weak instruments problem. In addition, for a small sample, any bias

due to serial correlation in a dynamic model is likely to be less significant in a simple OLS regression than in a more complex technique such as a panel data regression. One reason is that in an OLS regression in a dynamic model, serial correlation produces two effects that cancel out, minimizing the bias effect, which is not the case in more complex estimation techniques (Maeshiro 1996). A second reason is that the size of serial correlation in small samples is likely to also be small (Keele and Kelly 2006).

Tables 3 and 4 show the regression results for the effects of populism (all years and short run vs. long run) in the log of GDP per capita. Random effects (RE) regression results are included in the appendix.

Table 4 FE and AB panel data for log of GDP per capital (PPP), short-run and long-run populist years

	(1) FE	(2) FE	(3) FE	(4) AB	(5) AB	(6) AB
Time trend	0.024*** (0.00)	0.019** (0.00)	0.018** (0.00)	0.001 (0.00)	0.004*** (0.00)	0.005* (0.00)
Pop. (1st 5) [Level]	-0.245** (0.05)	-0.210** (0.05)	-0.140 (0.07)	-0.035 (0.04)	-0.058 (0.04)	0.025 (0.07)
Pop. (after 5) [Level]	-0.154 (0.10)	-0.602** (0.12)	-0.493** (0.10)	0.244*** (0.04)	-0.069 (0.05)	0.056 (0.08)
Pop. (1st 5) [Trend]	0.007 (0.00)	0.003 (0.00)	0.001 (0.00)	0.002 (0.00)	0.002 (0.00)	-0.002 (0.00)
Pop. (after 5) [Trend]	0.002 (0.00)	0.021* (0.01)	0.019* (0.01)	-0.010*** (0.00)	0.003 (0.00)	-0.003 (0.00)
% US GDP		-0.000 (0.00)	-0.009* (0.00)		0.006*** (0.00)	0.009*** (0.00)
Commodity price		0.002* (0.00)	0.002* (0.00)		0.001*** (0.00)	0.001** (0.00)
Exchange rate		-0.000 (0.00)	-0.000* (0.00)		-0.000 (0.00)	0.000 (0.00)
Real interest rate		-0.000 (0.00)	-0.002* (0.00)		0.000 (0.00)	0.001 (0.00)
Default		-0.012 (0.01)	0.014 (0.03)		0.014 (0.01)	0.024 (0.02)
Crisis		-0.106 (0.05)	-0.120 (0.06)		-0.107*** (0.02)	-0.124*** (0.02)
EFW			0.040 (0.03)			-0.000 (0.01)
Lag 1 of ln(GDP)				0.926*** (0.03)	0.779*** (0.04)	0.842*** (0.07)
Constant	8.790*** (0.04)	8.712*** (0.04)	8.483*** (0.14)	0.669* (0.31)	1.889*** (0.35)	1.285* (0.58)
R2 within	0.8073	0.8652	0.8867			
R2 overall	0.0718	0.0186	0.0101			
R2 between	0.0255	0.1983	0.1195			
Observations	216	171	115	200	156	93
Groups	8	7	7	8	7	7

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3 shows a statistically significant negative wealth effect, mostly across the board for all model specifications. There is one case of a positive effect, but with no statistical significance. Special attention should be given the interaction term between the populist dummy and the time trend. It seems that in our sample, populist governments have a negative *level* effect but a positive *trend* effect, which is mostly non-statistically significant. Yet, the positive trend effect of populism on the trend of income should be interpreted with caution. The reason for this positive trend effect may be because the regression is unable to completely isolate the effect of the high price of commodities from the populism variables; the correlation between the price of commodities and the interaction term is 0.81. This collinearity means that the model may be wrongly inputting some of the effect of commodity prices into the populism interaction term regressor. In other words, the *interpretation* of the populism interaction term is inconclusive. In spite of this collinearity, we believe it is important to control for the populism interaction term to avoid any potential omitted variable bias.

The non-significance and impact of EFW is not surprising. Since EFW is an institutional variable, it has long-run effects that presumably would be captured with significant lags. As mentioned above, the EFW series does not go back in time enough to include an appropriate lagged analysis. We still decided to run two models with EFW as a robustness check. We should be cautious, however, before concluding from the models above (and below) that EFW has no effect on GDP per capita.¹⁰

Finally, when we compare the size of the populist dummy coefficient with that of the crisis coefficient, we see that the wealth effect of populism can be as big as an economic crisis. While the effects of a crisis are easy for the median voter to observe, the long-term effects of populism are harder to perceive since they occur over a longer period and behind a complicated set of policies and political rhetoric. In other words, the wealth effect estimation of left populism corresponds to all years of populism and not to a one-year fall in GDP, as could be the case with an economic crisis. In other words, while the economic cost of left populism may be spread over a number of years, the economic cost of a crisis can happen in a single year.

¹⁰ If the EFW values were mostly constant, they could just be included in the fixed effects. However, these values show a level of variation in the EFW that warrants its inclusion in a model specification to capture any potential effect. Also, a large literature shows empirically the strength of the link between economic freedom, economic growth, and income levels. At the cross-country level, Faria and Montesinos (2009, p. 123) “report the existence of a strong, positive, statistically consequential impact of EFW [Economic Freedom of the World] on growth and the level of income.” See also Gwartney et al. (2004) and Easton and Walker (1997), who also find strong, positive relationships between the level of economic freedom, economic growth, and income. Hall and Lawson (2014, p. 1) survey the economic literature using the economic freedom of the world as an independent variable and find that “over two-thirds of these studies found economic freedom to correspond to a ‘good’ outcome such as faster growth, better living standards, more happiness, etc. Less than 4% of the sample found economic freedom to be associated with a ‘bad’ outcome such as increased income inequality. The balance of evidence is overwhelming that economic freedom corresponds with a wide variety of positive outcomes with almost no negative tradeoffs.”

Table 4’s results are similar to those in Table 3. Even though Table 4 splits the populist experience into short- and long-run effects while Table 3 looks at the overall populist sample, the story told by each set of regressions does not show significant differences. Contrary to the expected sign, the short-run level effect shows some negative impact. The only case of a statistically significant positive level effect after the first 5 years of populism is a model that does not include the price of commodities, so these results may be affected by an omitted variable bias. Finally, the most statistically significant trend effect in the long run has a negative sign; the other two with a positive, statistically significant trend effect are at the 10 percent level. The non-populist coefficients show similar results to those in Table 3.

Table 5 shows an estimation of the overall impact of populism on GDP per capita (PPP). The estimation, though simple, still offers results that are easier to interpret than those in the regression output. The estimation takes the difference between the natural log of the average GDP per capita (PPP) for the years without a populist government and what would be the average GDP per capita (PPP) in the presence of a populist government according to the regression results. The table also presents the percent changes for each country according to each model specification. Once more, the cost of populism looks so high because the results encompass all the populist years (in some cases for a time frame of a decade). These results are also consistent with Grier and Maynard’s (2016) findings.

4.2 Regressions on changes in GDP per capita (PPP)

Estimations on the percent change of GDP per capita (PPP) show scattered statistical significance on the left-populist regressors. Table 6 shows the regression for all populist years and Table 7 shows the same for short-run and long-run populist effects.

Table 5 GDP per capita level impact of populism per country, all populist years

	GDP per capita (2011 int’l dollars) Non-populist period average	(1) RE	(2) RE	(3) RE	(4) AB	(5) AB	(6) AB
<i>Level of GDP per capita (PPP)</i>							
Argentina	14,922	12,564	10,988	11,065	15,469	13,885	14,907
Bolivia	4134	3481	3044	3065	4285	3847	4130
Ecuador	7845	6606	5777	5818	8133	7300	7838
Nicaragua	3324	2798	2448	2465	3446	3093	3320
Venezuela	15,866	13,359	11,684	11,766	16,448	14,764	15,850
<i>Percent change of GDP per capita (PPP)</i>							
Argentina	–	–15.8%	–26.4%	–25.8%	3.7%	–6.9%	–0.1%
Bolivia	–	–15.8%	–26.4%	–25.8%	3.7%	–6.9%	–0.1%
Ecuador	–	–15.8%	–26.4%	–25.8%	3.7%	–6.9%	–0.1%
Nicaragua	–	–15.8%	–26.4%	–25.8%	3.7%	–6.9%	–0.1%
Venezuela	–	–15.8%	–26.4%	–25.8%	3.7%	–6.9%	–0.1%

Table 6 FE and AB panel data for change in log of GDP per capital (PPP), all populist years

	(1) FE	(2) FE	(3) FE	(4) AB	(5) AB	(6) AB
Populism (level)	0.058 (0.03)	0.005 (0.06)	0.049 (0.06)	0.074** (0.03)	-0.003 (0.03)	0.002 (0.04)
Populism (trend)	-0.002 (0.00)	0.000 (0.00)	-0.002 (0.00)	-0.003* (0.00)	0.001 (0.00)	0.000 (0.00)
% US GDP		0.007* (0.00)	0.010** (0.00)		0.008*** (0.00)	0.011*** (0.00)
Commodity price		0.001* (0.00)	0.001* (0.00)		0.001*** (0.00)	0.001** (0.00)
Exchange rate		-0.000 (0.00)	-0.000 (0.00)		-0.000 (0.00)	0.000 (0.00)
Real interest rate		0.000 (0.00)	0.000 (0.00)		-0.000 (0.00)	0.000 (0.00)
Default		0.014 (0.01)	0.029 (0.02)		0.018* (0.01)	0.033* (0.02)
Crisis		-0.109*** (0.02)	-0.125*** (0.00)		-0.105*** (0.02)	-0.130*** (0.02)
EFW			-0.004 (0.01)			0.001 (0.01)
L.ln(GDP) [diff.]				0.343*** (0.07)	0.176* (0.07)	0.123 (0.08)
Constant	0.016*** (0.00)	-0.041* (0.01)	-0.031 (0.05)	0.008* (0.00)	-0.040** (0.01)	-0.062 (0.08)
R2 within	0.0272	0.3513	0.5355			
R2 overall	0.0012	0.2873	0.3665			
R2 between	0.7245	0.0706	0.5407			
Observations	208	165	109	192	150	93
Groups	8	7	7	8	7	7

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

As expected, a crisis is statistically significant with respect to changes in GDP. Other regressors do not show a consistent statistical significance across the different model specifications. One interpretation of these results is that overall, populist governments do not impact average growth rates. If a populist regime takes office *after* a crisis has occurred, it fails to consistently produce above-average growth rates and therefore, as the first set of regressions shows, our results suggest that these types of governments are correlated with lower levels of GDP per capita (PPP) but are uncorrelated with different growth rates. The two cases that show different results are Argentina and Venezuela (Fig. 1). Recall, however, that the rapid growth seen in these two countries coincides with the rise of commodity prices and occurs after the 2001 crisis in the case of Argentina and after the 1999 crisis in the case of Venezuela.

Table 7's results, like those in Table 6, do not depict many statistically significant results in the populist regressors. The significant results show a positive level effect and a negative trend effect in the long run. This means that in the long run, GDP per

Table 7 FE and AB panel data for changes in log of GDP per capital (PPP), short-run and long-run populist effects

	(1) FE	(2) FE	(3) FE	(4) AB	(5) AB	(6) AB
Time trend	-0.000 (0.00)	-0.001 (0.00)	-0.001 (0.00)	-0.000 (0.00)	0.000 (0.00)	0.001 (0.00)
Pop. (1st 5) [level]	-0.031 (0.07)	-0.028 (0.07)	0.040 (0.07)	0.016 (0.04)	-0.018 (0.04)	-0.004 (0.07)
Pop. (after 5) [level]	0.263* (0.08)	0.087 (0.04)	0.131** (0.03)	0.261*** (0.05)	0.087 (0.05)	0.061 (0.09)
Pop. (1st 5) [trend]	0.003 (0.00)	0.002 (0.00)	-0.001 (0.00)	-0.000 (0.00)	0.002 (0.00)	0.001 (0.00)
Pop. (after 5) [trend]	-0.010* (0.00)	-0.003 (0.00)	-0.005* (0.00)	-0.010*** (0.00)	-0.003 (0.00)	-0.002 (0.00)
% US GDP		0.008* (0.00)	0.011* (0.00)		0.009*** (0.00)	0.012*** (0.00)
Commodity price		0.001** (0.00)	0.001** (0.00)		0.000* (0.00)	0.000 (0.00)
Exchange rate		0.000 (0.00)	-0.000 (0.00)		-0.000 (0.00)	0.000 (0.00)
Real interest rate		0.000 (0.00)	0.000 (0.00)		-0.000 (0.00)	0.000 (0.00)
Default		0.008 (0.00)	0.024 (0.01)		0.016 (0.01)	0.027 (0.02)
Crisis		-0.101*** (0.02)	-0.116*** (0.01)		-0.101*** (0.02)	-0.127*** (0.02)
EFW			-0.003 (0.00)			-0.000 (0.01)
L.ln(GDP) [diff.]				0.279*** (0.07)	0.170* (0.07)	0.120 (0.08)
Constant	0.020 (0.01)	-0.039* (0.01)	-0.029 (0.04)	0.011 (0.01)	-0.043** (0.01)	-0.062 (0.08)
R2 within	0.1367	0.3879	0.5572			
R2 overall	0.0596	0.3365	0.3606			
R2 between	0.7080	0.5315	0.4673			
Observations	208	165	109	192	150	93
Groups	8	7	7	8	7	7

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

capita (PPP) grows, on average, at a higher rate, but said average enters a decreasing trend. Perhaps the five-year definition of short- and long-run is not capturing the right breaking point for all countries. It may also be the case that our sample is not large enough for the estimation technique to clearly separate all these effects. Further, it is unclear when the short run ends and the long run starts in each year, but our estimation uses a five-year mark for all countries.

5 Conclusion

Our analysis measures the effects of left-of-center populism on GDP per capita adjusted for cost of living. Our results indicate that price shocks matter and may account for some cases in which average income rose faster during a left-populist regime than before it came to power.

Our results also show that the cost of left populism can be as large (or even greater) than that of an economic crisis. Furthermore, our results are consistent with those of other studies—in particular, estimations for Venezuela (Grier and Maynard 2016). Nonetheless, these regressions (which suffer from some data limitations) should be considered preliminary in a field that needs to increase its supply of empirical work and where data frequency and lags between policy and economic impact are constrained.

Further work in this area should try to expand on the sample size in terms of countries and years covered. It should also look at the recent emergence of right-of-center populism in Eastern Europe and the United States. More important, attempts to measure “how much” populism is in place would open research questions and opportunities for a better understanding of the costs of populism.

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