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journal homepage: [www.elsevier.com/locate/ejpe](http://www.elsevier.com/locate/ejpe)Rara Avis: Latin American populism in the 21st century<sup>☆</sup>Luciano Campos<sup>a,b,\*</sup>, Agustín Casas<sup>c,d,1</sup><sup>a</sup> Universidad de Alcalá, Spain<sup>b</sup> RedNIE, Argentina<sup>c</sup> Colegio Universitario de Estudios Financieros (CUNEF), C/L. Prieto Castro 2, 28040 Madrid, Spain<sup>d</sup> Institute for Advanced Research in Business and Economics (INARBE), Universidad Pública de Navarra, Arrosadia Campus, 31006 Pamplona, Spain

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## ABSTRACT

Since the beginning of the 21st century, many Latin American countries have been ruled by governments characterized as populist (the so-called new Latin American Left). We focus on the macroeconomic implications of the policies adopted by these governments (instead of their leaders' rhetoric) and we investigate to what extent this characterization holds. In particular, we focus on their wage policies by doing a Structural Vector Autoregressive analysis and assuming that populist shocks have no long-run effects on real wages. This identification implies that populist leaders prioritize redistribution through nominal wages disregarding the evolution of productivity. The results indicate that economic populism is not as widespread as previously thought. Instead, our approach leads to more nuanced results: while we find that there is populism in Argentina, the results for Brazil, Bolivia and Ecuador show only sporadic populist events. In the remaining countries, we do not find persistent economic populism.

“How can we explain Latin America's proclivity toward macroeconomic mismanagement? Is it deeply rooted ignorance on the mechanics of deficit financing, or is it the deliberate consequence of Machiavellian politics or, is it, perhaps, the unavoidable outcome of distributional struggles?” [Dornbusch and Edwards \(1991\)](#).

## 1. Introduction

The sequence of economic and political crises of the XXI century are believed to have brought back the seed of charismatic leaders who pursue populist policies. Either due to the Great Recession or the failure of market-oriented policies, there is – allegedly – an ubiquitous new populist wave.<sup>2</sup> While there seems to be agreement among researchers that D. Trump in the US, B. Johnson in the UK and J. Bolsonaro in Brazil are recent examples of populism ([Edwards, 2019](#); [Rovira-Kaltwasser et al., 2017](#)), there is no “one-size fits all” definition of populism.

Sociologists ([Gidron and Hall, 2017](#)), political scientists ([Colantone and Stanig, 2019](#); [Norris, 2020](#)) and economists ([Acemoglu et al., 2013](#)), among others, use different strategies to study this phenomenon, allowing for thorough multidisciplinary studies of a

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<sup>2</sup> [Algan et al. \(2017\)](#), [Guiso et al. \(2019\)](#), [Stankov \(2018\)](#) argue that the former prompted the US and Europe's populist waves, while the latter is more linked to Latin America, nowadays and in the 90s ([Edwards, 2019](#)).

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country's populist experience. The other side of the coin is that the lack of a single definition restricts the scope for comparative and historical studies, as not all definitions or data requirements may be satisfied for all countries and periods.

For instance, [Guiso et al. \(2019, 2018\)](#) characterize populist candidates' success along three dimensions: anti-elite rhetoric, immediate "economic" protection and disregarding the costs of that protection. The last two dimensions are related to the influential work of [Dornbusch and Edwards \(1990\)](#), who defined macroeconomic populists as those governments implementing expansive policies to redistribute income. Other approaches use a stringent set of ideas ("the ideational" view) or the candidates' rhetoric to define parties or politicians (surveyed in [Guriev and Papaioannou, 2020](#)). The implementation of these definitions are based on disparate methodologies, like text analysis, political surveys, experts' surveys and so on.<sup>3</sup>

In this paper, we follow up on the tradition of the above-mentioned definitions by pinning down the concept of economic populism with a focus on actual economic outcomes rather than declamations. Our definition of populism is used retrospectively to evaluate incumbents across countries based on their wage policies. Particularly, we emphasize the economic dimension of populism with a focus on the ineffective redistributive efforts through wages. In our framework, populist governments increase nominal wages regardless of the fundamentals of the economy (i.e., factors' productivity), while non-populist ones increase them as a result of productivity improvements, if at all. Specifically, we identify populist shocks as those having no long-run effects on real wages. The underlying idea is that populist leaders are those who redistribute in the short-run by rising nominal wages but fail to improve income distribution because inflation ultimately leaves real wages unaltered.<sup>4</sup>

We use data from Argentina, Bolivia, Brazil, Chile, Ecuador, Nicaragua, Peru and Uruguay – usually called the New Latin American Left ([Levitsky and Roberts, 2011](#)) – plus Colombia and Mexico, covering most Latin American presidential terms in the XXI century, according to data availability. These countries are a perfect laboratory experiment for our methodology. They arguably have had populist experiences since the beginning of the century, so that enough time has passed to allow us to test whether their implemented policies were populist. Moreover, we benefit from high quality data: monthly periodicity over almost twenty years.

This New Latin American left has been typically defined as a populist political movement which, in many dimensions, resembled that of the old left of the 1970's and 1980's. In a sense, both movements had charismatic leaders with anti-elite rhetoric and demagogic campaign promises.<sup>5</sup> Nevertheless, is it convenient to qualify populism based in speeches given in the heat of the contest? Can we trust a method based on the leaders' attributes which more often than not are difficult to formalize? Would it not be more acceptable to rely on an approach that can be used to quantify the degree of populism instead of reaching an unobjectionable qualification?

Coincidentally, most of these countries were the muse for [Dornbusch and Edwards \(1991\)](#)'s influential perspective of macroeconomic populism in the 1980s, which became the "benchmark" of populism. Moreover, three decades later, [Edwards \(2019\)](#) adds that the populists' objective in the XXI century in Latin America is to raise wages (without discarding other types of new populism in Europe).<sup>6</sup> In this paradigm, Lula da Silva in Brazil and Evo Morales in Bolivia are seen as the paroxysm of the movement. With communist or socialist claims, they were union leaders in key economic sectors (metallurgical and coca producers), and concentrated the support of poor workers (urban and rural, respectively).

In order to classify these countries along our proposed measure of populism, we follow the methodology in [Blanchard and Quah \(1989\)](#), adapted for the identification of populist regimes. While [Blanchard and Quah \(1989\)](#) use a bivariate Vector Autoregressive (VAR) to distinguish between demand and supply shocks, this paper sets a model with nominal and real wages to identify two types of disturbances: productivity shocks, which have long-term effects on real wages, and populist shocks, which do not (as in [Campos and Casas, 2020](#)). Additionally, we account for other potential demand factors (see [Keating, 2013](#)), i.e., we identify demand shocks. This methodology is quite agnostic from a formal perspective: the underlying theory of the identification scheme is just the basic concept of the real wages determination by productivity in the long-run.

In more detail, firstly, a bivariate VAR model is estimated to disentangle populist and productivity shocks using nominal and real wages only. The identifying restriction is done on the long-run impact matrix by imposing that populist shocks cannot have permanent effects on real wages. Among the benefits of this agnostic definition of populism, three stand out: first, populism is a continuous measure rather than a dichotomous classification of governments. Second, the implementation of this definition is straightforward, and therefore can be used to evaluate populist experiences elsewhere. And third, it is not demanding in terms of the required data, nor computationally.

In the main model, the trivariate VAR, we also disentangle between populist and demand shocks by adding an industrial production index that we use as aggregate economic activity's proxy. The identification scheme imposed in this second estimation uses sign restriction on the short-term impact matrix and zero-restriction in the long-term one. The key underlying assumption to identify separately populist and demand shocks is that the latter are allowed to potentially have long-run effects on real wages. This assumption is consistent with many theoretical frameworks, as summarized by [Keating \(2013\)](#).

<sup>3</sup> The classification of political parties into populist or not usually follows a thorough study of their platforms, as in [Van Kessel \(2015\)](#) and/or Chapel Hill Expert Survey. However, the use of this measure collides with political economy/electoral models in which candidates' announcements are thought to be cheap talk.

<sup>4</sup> This idea is proposed in [Canitrot \(1975\)](#) and, to some extent, in [Dornbusch and Edwards \(1990\)](#), who underscore the fiscal imbalances as the main determinant. Among the papers studying economic populism, the emphasis on the redistributive effort is studied empirically in [Satyanath and Subramanian \(2007\)](#).

<sup>5</sup> One could even argue that they are part of the same populism cycles, as [Stankov \(2020\)](#) does.

<sup>6</sup> [Dornbusch and Edwards \(1991\)](#) is sustained with a thorough description of the Latin American experience in the 70s and 80s, but its approach has been applied to other populist experiences — in Europe and elsewhere [Guriev \(2018\)](#).

Our results come mainly from the trivariate model: the variance decomposition of nominal wages to populist shocks – how much of nominal wage variations can be explained by that disturbance– and the historical counterfactual. This last tool is particularly useful as it shows how much nominal wages would have increased were populist shocks absent. The evidence indicates that Chile, Nicaragua, Peru and Uruguay did not experience populist regimes. In Bolivia, Brazil and Ecuador some populist events were found, though barely significant. Only in Argentina did populist shocks explain nominal wages' rises significantly. As a consequence, our results suggest that the New Latin American Left cannot be qualified as an homogeneous populist movement, i.e., important distinctions among the different countries should be made.

Within the scope of our results, it could be then argued that the new Latin American left was not shaped by economic populist policies. In that regard, this is an optimistic interpretation, as it shows that societies – or politicians– may learn lessons from history. For instance, the median increase in real wages along the past twenty years is 1.5% per year. Beyond the scope of this paper, the deterioration of the institutional quality, maybe present in Latin America (LATAM) and the EU in this period, should be studied with attention, regardless of the current classification of governments.

The rest of the paper is organized as follows: Section 2 performs a literature review to contextualize the paper's contribution; Section 3 describes the new Latin American left and goes briefly through each of the governments that are analyzed in the subsequent sections. Section 4 explains the empirical approach used to disentangle between, first, productivity and populist shocks, and then, demand disturbances. Section 5 presents the evidence reported with impulse responses, variance decomposition and historical counterfactuals analysis. Finally, Section 6 concludes.

## 2. Literature review

Even though a large share of the population, including academics and political pundits, frown upon the advancements of populism, the definition, causes and consequences are debated.

The modern definitions of populism are rich and multidimensional. For instance, the increasingly predominant role played by the so-called populist leaders is largely associated with inflammatory rhetoric and myopic policy proposals (Keefer et al., 2019; Guiso et al., 2019; Algan et al., 2017; Edwards, 2019) that stand up against the “corrupt elite” (Mudde and Rovira Kaltwasser, 2018). Beyond this rhetorical approach, Rodrik (2018) distinguishes between economic and institutional populism. This distinction emphasizes a reformist dimension rather than the sociological implications of the populist discourse. Rodrik argues that economic populism may have long-term benefits; for instance, Sanders in the U.S. would be a democratic populist – i.e., that abides the political/institutional restraints but not the economic ones.

As highlighted in Guriev and Papaioannou (2020), most of these interpretations break with the traditional definition of Latin American populism, macroeconomically imprudent, and associated with left-wing governments. Although these modern (and minimal) descriptions of populism allow for a broader framework, they capture populist “intentions and declamations” rather than actual populist policies. For instance, Guriev and Papaioannou (2020) highlight the example of SYRIZA in Greece, which came to power as a “populist coalition” (according to the anti-elite discourse) but ended up implementing “conservative” policies. We contribute to the literature by using another minimal definition, that it can be measured universally, ex-post. That is, it is based on actual economic outcomes rather than ex-ante intentions.

The literature that explains the raise to power of populist candidates is also rich. From a theoretical standpoint, Acemoglu et al. (2013) argue that in the presence of corruption, populist proposals may be honest politicians' strategy to signal honesty. And Prato and Wolton (2020) state that voters' demand for reform may cause populist proposals. Chesterley and Roberti (2018) goes a bit beyond and study the populist's incentives (and mechanisms) to remain in power. From a different angle, the seminal work of Sachs (1990) posed that income inequality was conducive to social conflict and political pressure to raise lower classes' income, and this typically ends up in macroeconomic misalignment. In the same line, Leon (2014) observed that left-wing populism redistribute too much, Gerchunoff et al. (2020) described a populist paradox, characterized as a weak equilibrium between macroeconomic balance and social peace, and Di Tella and Rotemberg (2018) highlights the choice of incompetent leaders.

Empirically, from a comparative standpoint, there is a branch of the literature that uses content-analysis or rhetorical measures of populism applied to parties and investigates the conditions for their raise to power. In this line, Guiso et al. (2019), Algan et al. (2017) show that poor economic conditions (failure of the *troika*'s policies, and raise in unemployment, respectively) increase the winning chances of populist parties. Keefer et al. (2019) focus on the effects of trust on individual preferences for populist candidates: they claim that low trust individuals tend to elect populist candidates, who would lead to low quality governments. More closely related to our focus, Satyanath and Subramanian (2007) show that societal divisions, especially income inequality, promote populist redistributive efforts.

Our paper has a similar goal than Rooduijn and Pauwels (2011), in the sense that they highlight the difficulties of pursuing serious comparative and historical analysis of populism with disparate definitions of populism. They follow a different – and we claim, more demanding– strategy: they use classical and computer-based content-analysis to identify populist ideas in the political manifesto of parties. Using the measures in Hawkins (2009) – who assess populist manifestos with an “holistic” perspective– Rode and Revuelta (2014) look at the institutional consequences of populism.<sup>7</sup> The main difference with respect to these papers is that we do not have an *a priori* classification. We rather measure whether the economic implications of populism are present in the data, and we let the results signal whether they are consistent with populist policies *a posteriori*.

<sup>7</sup> More generally, Spruk (2016) argues about the detrimental effect of these institutions.

Regarding the institutional consequences of populist governance, [Taggart and Kaltwasser \(2016\)](#) and [Guriev and Papaioannou \(2020\)](#) analyze recent ex-ante populist episodes in Latin America and Europe. The former emphasize a distinction between presidential and parliamentary regimes, i.e. the extent to which the executive branch is constrained. In this regard, our focus on presidential regimes leaves the Latin American presidents relatively unconstrained. Another important implication of these papers is that populism does not need to emerge from a leader, but it could also be from a party or a social movement. As a consequence, they may represent a cleavage that has been alienated or excluded from the policy-making ([Stankov, 2020](#)). In that regard, our focus on wages is consistent with this view.

Our contribution to this literature is two-fold. First, with our agnostic definition of economic populism, that abstracts from other components such as the leader's electoral rhetoric or appeal to voter's sentiments, we evaluate ex-post whether presidents in Latin America had implemented populist economic measures. Second, our empirical approach has basically one identifying assumption, that nominal shocks have no permanent real impact. This assumption is widely accepted and, to an extent, uncontroversial. Although structural VARs have been originally conceived for macroeconomic analysis [Sims \(1980\)](#), there is a growing literature that lies at the crossroads of political economy, economic history and structural VAR analysis. The works of [Brandt and Freeman \(2009\)](#) and [Battilossi et al. \(2013\)](#) are two relevant examples of this.

In this sense, we step on the tradition of structural VARs identified with long-run restrictions, which possess the advantage of relying on the consensus that some structural shocks are purely transitory by nature. For instance, [Blanchard and Quah \(1989\)](#), in which demand shocks can only have transitory effects on output; or [Enders and Lee \(1997\)](#), in which nominal disturbances can only have transitory effects over the real exchange rate. We claim that, like these papers, we rely on a theoretically robust prediction to justify our empirical approach.

The paper closest to ours is [Campos and Casas \(2020\)](#), who first proposed this methodology to identify populist shocks using annual data from Argentina for the period 1865–1974. Instead of doing a historical decomposition, we calculate in this paper the historical counterfactuals to quantify how much would have nominal wages increased were populist shocks absent. Additionally, we estimate the model with monthly data, which allows for more precise estimates. On the same lines, our main results come from the trivariate VAR model, which allows to disentangle demand from populist shocks. The combination of the historical counterfactuals and precise estimations permits us not only to highlight the presence of populist shocks (i.e. the statistical significance) but also quantify them to assess its economic relevance.

Conceptually, another important difference is the comparative approach: the application to this specific region, where certain presidencies in some countries were typically deemed as populist, allows for a large variability of events during the same time period. The conclusions in this work are only possible if there is a methodology that allows to measure the degree of populism instead of a black or white classification. Hopefully, the modeling framework proposed here and in [Campos and Casas \(2020\)](#) can be a useful toolkit for anyone interested in analyzing populism.

### 3. Institutional background

Known as Latin America's "lost decade", the 1980's sharp decline of income and macroeconomic failure led the impulse for orthodox policies in the 1990's. Contrary to the doctrines of the popular leaders of the 1980's (Peru's Alan García in 1985–90, or Nicaragua's Daniel Ortega in 1985–90, among others), who pursued state intervention and protectionism, the 1990's resulted in policies aligned with the Washington consensus. In some cases, even candidates with workers-based political support ended up imposing liberal systems ([Murillo, 2000](#); [Cukierman and Tommasi, 1998](#)).

Nonetheless, in a pendular fashion, after the failure of the nineties' schemes, the "New Latin American Left" was going to rule over most countries in the region and, even in some of them, with the same presidents as in the 1980's. This was the case of Alan García in Peru (2006) and Daniel Ortega in Nicaragua (2007). In others, union leaders with socialist backgrounds were being elected, as Lula da Silva in Brazil (2003) and Evo Morales in Bolivia (2006). And there was even the case of the former guerrilla leader José Mujica being elected as president of Uruguay in 2010.

Given the poor macroeconomic record of popular movements in the region, some observers highlighted the resemblance of the new left with the nationalistic governments of the 1970's and 1980's ([Barret et al., 2008](#)). Others, tried hard to difference between this new left from the old left ([Levitsky and Roberts, 2011](#)). Others even intended to discriminate between a "good" and a "bad" left among these new political movements ([Webber and Carr, 2012](#)). However, all these classifications were based on subjective evaluations of the political leaders rather than in some objective measurement. As such, the new governments were classified as populist on behalf of their speeches, their accumulation of power, their (dis)respect of institutions or their corruption scandals, all categories which are hard to evaluate in a quantitative fashion. Therefore, the new Latin American left has been set by default as a populist movement if no further clarification is attempted.

All countries we study in this period, from 2000 to 2019, had at least one president who belonged to a self-proclaimed left-wing party. And most of them share the commonality of being presumably populist regimes, either because of the past of their leaders, their anti-establishment rhetoric or their campaign promises ([Arnson and de la Torre, 2013](#)). That is, the Kirchner's in Argentina (2003–15), Evo Morales in Bolivia (2006–19), Lula da Silva and Dilma Rousseff in Brazil (2003–16), Daniel Ortega in Nicaragua (2007–now), Alan García and Ollanta Humala in Peru (2006–16), Michelle Bachelet in Chile (2006–10 and 2014–2018), Rafael Correa in Ecuador (2007–17) and Tabaré Vázquez and José Mujica in Uruguay (2005–20). Additionally, Fernando Lugo in Paraguay

(2008–12) and Hugo Chávez and Nicolás Maduro in Venezuela (1999–now), were also presidents from left-wing parties, but they are not included in the econometric analysis due to data restrictions.<sup>8</sup>

Below, we provide a brief description of the political context in each of the countries during the period analyzed. Readers acquainted with the Latin American political background are welcomed to skip to the following section.

*Argentina: Néstor Kirchner (2003–2007) and Cristina Fernández de Kirchner (2007–2015).* After the 2001 political and economic crises, which included a default on the governments debt and a large devaluation, Néstor Kirchner was elected president. He was, at the time, a *protégée* of the incumbent Eduardo Duhalde. In 2003, both Duhalde and Kirchner represented the same faction of the Peronist party, which is arguably the strongest party in Argentina since Perón's first presidency in 1946. Kirchner held office from May 2003 to December 2007. Instead of running for re-election, his wife Cristina Fernández de Kirchner was elected president. She had a prominent career in politics within the Peronist party as well (being a member of Congress since 1997). In 2007 she run as a candidate of a coalition of peronist factions, "Frente para la Victoria", and ruled until December 2015.

*Bolivia: Evo Morales (2006–2019).* "Movimiento al Socialismo" (MAS) is a political party that was originally supported by coca producers organized around *Ayllus*, whose leader was Evo Morales (Howard, 2010). His experience as a union and party leader resulted in Morales being elected president in 2006 with a large support of the Bolivian rural population — historically discriminated and excluded from power, arguably due to their indigenous origins. Evo Morales modified the Constitution and was re-elected president two times. After the first-round of the presidential elections of 2019, a *coup d'état* was organized due to electoral fraud accusations. If he had won that election, he would have served his fourth term as President of Bolivia.

*Brazil: Lula da Silva (2003–2010) and Dilma Rousseff (2011–2016).* As a metallurgic union leader, Lula da Silva raised to stardom in the "Partido dos Trabalhadores" (PT, or workers' party in english). He run for president three times before being elected in 2003. He was re-elected once and succeeded by Dilma Rousseff in 2011. Rousseff was re-elected in 2015, but she was impeached in 2016 by a coalition of her own vice-president (M. Temer) and conservative parties. Lula was imprisoned during nineteen months with corruption charges and freed in 2019, but the accusations were not dropped.

*Chile: Michelle Bachelet (2006–2010 and 2014–2018) and Sebastián Piñera (2014–2018).* Michelle Bachelet gained popularity as Ricardo Lagos' Health Minister (2000–2006) and the first female Defense Minister in Ibero-America (2002–2006). She became the candidate of the center-left coalition, called *Concertación*, and became the seventh female president in Latin America. Characterized by a low profile, away from incendiary rhetoric, her presidency was tainted by some corruption scandals. She was succeeded by a right-wing businessman, Sebastián Piñera. When he finished his term in 2014, Bachelet was again elected president.

*Colombia: Álvaro Uribe (2002–2010) and Juan Manuel Santos (2010–2018).* Álvaro Uribe ran for president without the formal support of any of the two mayor parties (Partido Liberal – his previous party – and Partido Conservador). Despite having belonged to the center-left party, he could be characterized as a center-right candidate. As such, he trumped the cause of "democratic security" against guerrillas and benefited from the support of the US through the "Plan Colombia" (Posada-Carbó, 2011). He reformed the constitution and was re-elected president in 2006. In 2010, Juan Manuel Santos, a candidate from the center-left party (Liberal) was elected president and later re-elected in 2014. In 2016, he won the Peace Nobel Prize for his efforts to struck a peace agreement with the *Fuerzas Armadas Revolucionarias de Colombia* (FARC).

*Ecuador: Rafael Correa (2007–2017) and Lenin Moreno (2017–now).* Correa served three presidential terms, in representation of the party he founded, "Alianza País", beginning in January 2007. During his first term, the Constitution was reformed, ending his mandate early in 2009. He was then re-elected until 2013 and again until 2017. Correa did not run again, and instead his two-times vicepresident, Lenin Moreno, was elected until 2021. We cover both presidents until January 2020. Additionally, since the year 2000, Ecuador adopted the U.S. dollar as its own currency. This "dollarization" is taken into account during the analysis.

*Peru: Alan García (2006–2011) and Ollanta Humala (2011–2016).* Similarly to Daniel Ortega in Nicaragua, Alan García's first term was in 1985. This term was marked by a surge of terrorism and mismanagement of the economy. He lost the elections in 2001 as the candidate of the socialist party, *Partido Aprista Peruano* (APRA). In 2006, he defeated Ollanta Humala, an ex-military who organized a *coup d'état* against Alberto Fujimori, president of the country during the period 1990–2000. Humala, as member of the *Partido Nacionalista Peruano* (PNP), won the elections in 2011 and held the office until 2016. García was investigated of corruption and, allegedly, committed suicide in 2019.

*Uruguay: Tabaré Vázquez (2005–2010, 2015–2020) and José Mujica (2010–2015).* Both men belonged to the same party, *Frente Amplio*, traditionally left-wing. Vázquez (a medical doctor) was the first Uruguayan president not to come from the two traditional parties (Colorado and Blanco). Mujica was a member of the *Tupamaros* (a left-wing guerrilla) and was "imprisoned" for his guerrilla activities in the 70s.

<sup>8</sup> Nominal wages' series from Venezuela are only available in quarterly frequency from 2009 until 2013. As for Paraguay, data is only in bi-annual frequency and available for a short period.

Venezuela: *Hugo Chávez (1999–2013) and Nicolás Maduro (2013–now)*. Hugo Chávez was elected president in 1998 and re-elected three times. His second term was briefly interrupted by a coup d'etat and his last ended with his death in March of 2013. He was succeeded by Nicolás Maduro, who was the acting president until he beat Henrique Capriles in a close election in April 2013. Chávez instated the “Bolivarian Revolution” financed with record-high price of oil. Although his presidency and that of his successor are typically classified as populist, we are unable to include the country in our sample because of lack of data, as noted above.

Among the non South American countries, we include Mexico and Nicaragua:

Mexico: *Vicente Fox (2000–2006), Felipe Calderón (2006–2012) and Enrique Peña Nieto (2012–2018)*. Vicente Fox was the first elected candidate from a party different than the *Partido Revolucionario Institucional* (PRI) since 1910. His policies were consistent with the Washington Consensus. Both Fox and his successor, Felipe Calderón, belonged to the traditional opposition to PRI, the *Partido de Acción Nacional* (PAN). Calderón's presidency was marked by the arguably failed “drug war” that led to many thousands of homicides during his term. In 2012, the PRI comes back to the presidency of Mexico by the hand of Enrique Peña Nieto. Fox took office in December 2000 and our period covers since January 2001 until the end of Peña Nieto's term.

Nicaragua: *Daniel Ortega (2007–now)*. He is part of the “Frente Sandinista de Liberación Nacional” since its foundation and the president of that party since 1991. He first served as president of the country in 1985 for five years. He run for president again in 1996 and 2001, but only won in 2006, when he was elected president again, and re-elected for other two terms. He is currently serving his last term.

#### 4. The empirical approach

We use two vector autoregressive models to identify populist shocks. First, following [Campos and Casas \(2020\)](#), we estimate a bivariate VAR with nominal and real wages and we identify populist shocks assuming that they cannot have permanent effects on real wages, which is in line with much of the literature on macroeconomics of populism. Second, as this model can potentially confound demand with populist shocks, we extend the VAR framework by adding output as a third variable. This allows to identify demand shocks by imposing sign-restrictions in the short-run impact matrix, while the long-run identifying assumption of populist shocks is kept.

While the relative performance of these models in this application depends on the results discussed below, each model has its pros and cons. The trivariate VAR allows for a distinction between demand and populist shocks, a priori sustained with previous work ([Keating, 2013](#)). The bivariate VAR is less demanding, both in terms of the data and the identifying assumptions required. Although it could be the case that both models deliver the exact same results, this will not be case in most of the countries in our sample, hinting the presence of demand shocks.

Lastly, it is worth to point out that both positive and negative shocks can be calculated in our framework. And that, because of the linearity of our VAR models, both disturbances are symmetric. We discuss positive populist shocks only because (i) [Fig. 1](#) shows that there are few events in which the nominal wages decrease (the figure shows four inter-annual decreases, in around 20 years, for 10 countries). Also, (ii) populist governments would not have an interest in decrease the nominal wage. In other words, although both positive and negative populist innovations can be identified in a statistical sense, the former are more relevant in an economic sense, in our sample. Consequently, from now on, positive populist shocks are referred to simply as populist shocks, for convenience.

##### 4.1. The VAR model

For each country, we estimate the bivariate VAR, with real and nominal wages, and the trivariate VAR, where we add the industrial production index (IPI) growth used as a proxy for real output growth.<sup>9</sup>

In the bivariate VAR, the identification is done in the long-run impact matrix only, which allows to disentangle between two sources of innovations: a productivity shock, that can have long-run effects over both variables, and a populist shock, which is restricted not to have any long-run impact on real wages. In the trivariate VAR, a demand shock can be identified as well with a mix of sign and exclusion restrictions applied in the short and long-run, respectively.

The starting point of the methodology is the moving average (MA) representation of the structural VAR model:

$$B(L)Y_t = e_t \quad \text{with} \quad e_t \sim N(0, I_K) \quad (1)$$

where  $Y_t$  is the vector of endogenous variables,  $B$  represents the matrices of structural coefficients with their respective lag order ( $L$ ) and  $e_t$  are the structural shocks. As this is a fully identified model,  $K$  represents both the number of variables and the number of structural shocks.

<sup>9</sup> In spite that the industrial production does not represent a large share of total output in our sample, we use IPI as a proxy for aggregate output in order to make a cleaner comparison across countries. That is, it is the only monthly measure of production that is present in all countries in the sample. Moreover, this index is highly correlated with GDP in our case studies.

**Bivariate VAR.** The identification is performed in the VAR's structural-form:

$$\underbrace{\begin{bmatrix} \Delta w_t \\ \Delta W_t \end{bmatrix}}_{Y_t} = \underbrace{\begin{bmatrix} \cdot & 0 \\ \cdot & \cdot \end{bmatrix}}_{\Xi_\infty} \underbrace{\begin{bmatrix} e_t^y \\ e_t^p \end{bmatrix}}_{e_t} \quad (2)$$

where the vector of endogenous variables consists on real ( $\Delta w_t$ ) and nominal wages ( $\Delta W_t$ ) yearly variations, and is used to identify two structural shocks: the productivity ( $e_t^y$ ) and the populist innovations ( $e_t^p$ ). Notice that the upper-right coefficient in the long-run impact matrix  $\Xi_\infty$  is set to zero to impose that populist shocks cannot have permanent effects over real wages.<sup>10</sup>

The model (2) is estimated by OLS and the uncertainty around the estimates is calculated by bootstrapping from its residuals with 2000 repetitions. The [Appendix](#) below shows the details of the estimation.

**Trivariate VAR.** A potential issue with the VAR model described above is that some populist shock might be confounded with positive demand disturbances. To identify demand shocks in addition to populist and productivity disturbances, we propose an extended setting of the VAR where both signs and long-run restrictions are imposed. In this framework, populist shocks are still the only disturbance with no long-run effects over real wages. Because, as stated by [Keating \(2013\)](#), who confronted [Blanchard and Quah \(1989\)](#), many theoretical models show that demand shocks can potentially have permanent real effects.

For the trivariate VAR, industrial production index (IPI) yearly growth is included as an additional variable in model. It is then possible to identify three sources of innovations with the algorithm of [Arias et al. \(2014\)](#), which was designed to combine sign and exclusion restrictions at different time horizons. In particular, the identification proposed is:

$$\underbrace{\begin{bmatrix} \Delta y_t \\ \Delta w_t \\ \Delta W_t \end{bmatrix}}_{Y_t} = \underbrace{\begin{bmatrix} \cdot & + & + \\ \cdot & + & - \\ + & \cdot & \cdot \end{bmatrix}}_{B_0^{-1}} \underbrace{\begin{bmatrix} e_t^p \\ e_t^y \\ e_t^d \end{bmatrix}}_{e_t} \quad (3)$$

$$\vdots = \underbrace{\begin{bmatrix} \cdot & \cdot & \cdot \\ 0 & \cdot & \cdot \\ \cdot & \cdot & \cdot \end{bmatrix}}_{\Xi_\infty} \vdots$$

where  $\Delta y_t$  is IPI yearly growth,  $e_t^d$  is a demand shock,  $B_0^{-1}$  is the short-run impact matrix and the rest of the elements were described above. A populist shock is identified as a short-run increase in nominal wages with no permanent impact on real wages. On the other hand, productivity and demand shocks can potentially have long-run effects on real wages. In the short-run, a productivity innovation raises output and real wages. Whereas a demand shock increases output but decreases real wages, because prices rise.

As mentioned above, when compared to the Bivariate VAR, the trivariate model has the disadvantage of being more demanding in terms of the assumptions needed for identification. Particularly, we need to assume that demand shocks can have potential long-term effects and that these shocks make prices move faster than nominal wages in the short-run.

The model (3) is estimated by Bayesian methods and the uncertainty around the estimates is calculated by drawing 10,000 elements from its posterior distribution. The [Appendix](#) below shows the details of the estimation.

#### 4.2. Data

The annual variations in nominal and real wages are shown in [Fig. 1](#). Yearly CPI inflation, used to calculate real wages variations, and annual IPI growth variations, used as proxy for aggregate output, are shown in the [Appendix](#). Variables for all countries are in monthly frequency, except for Bolivia's production for which quarterly real GDP was used. For Mexico, Nicaragua and Peru, global activity indexes were used instead of IPIs, which were not available for the whole samples. All data is seasonally adjusted.

In [Fig. 1](#) it can be observed that both nominal and real wages are relatively stable and follow a similar pattern, likely due to responsible macroeconomic policies and low inflation (in lines with [Guriev and Papaioannou, 2020](#)). Argentina is an exception, nominal wages decouple from real wages since 2007. This is precisely when inflation started an ascending path, as shown in [Fig. A.7](#) of the [Appendix](#).

The data sources for Argentina are the national statistic institute (INDEC) and [Cavallo \(2013\)](#) for CPI from 2007 until 2015 because the official index was known to be underestimated during those years. The sample goes from 2003:M5 to 2015:M12, which includes all Kirchners' administrations. For Bolivia, the data is from its national statistic institute (INE) and it starts at 2006:Q1 until 2019:Q3. It includes all of Evo Morales' governments. Brazilian data is from its national statistics institute (IBGE) from 2004:M3 until 2016:M8. This period includes most of Lula's administrations and Rouseff's one.

<sup>10</sup> [Dornbusch and Edwards \(1990\)](#), among others, pointed out that populist governments might even leave workers worse off. This can be implemented in our framework by setting a minus instead of the zero long-run restriction of real wages to populist shocks. However, when we make this restriction, the algorithm used to obtain suitable candidate impact matrices is unable to obtain a sufficiently large amount of them in a reasonable time. This suggests that populist shocks rarely decrease real wages in the long-run in our sampled countries.

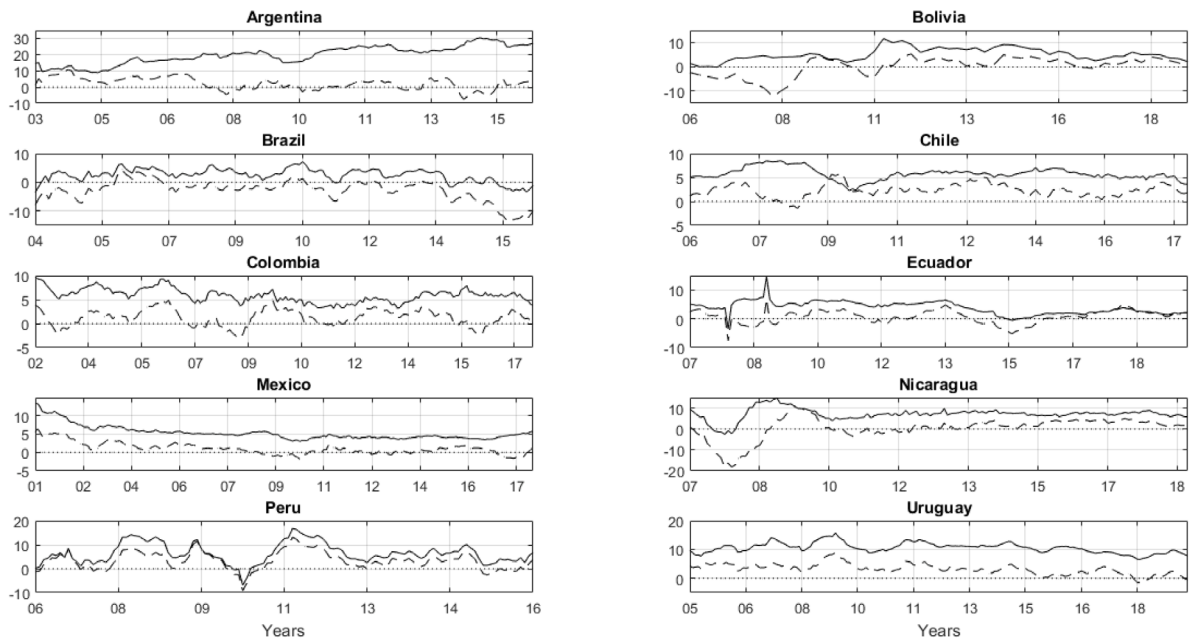


Fig. 1. Nominal (—) and real wages (---). Note: yearly variations in the logs of nominal wage ( $\Delta W$ ) and real wages ( $\Delta w$ ).

For Chile, the data was obtained from its national statistic institute (INE) for the period 2006:M3–2018:M3, which includes two governments of Bachelet and, between them, the first Piñera’s administrations. For Colombia, wages and IPI are from its national statistics institute (DANE) and the CPI is from its central bank. The sample goes from 2002:M8 until 2018:M3 and includes Uribe’s and Santos’ governments. For Ecuador, wages are from its central bank, while CPI and IPI are from its national statistics institute (INEC). The data goes from 2007:M1 to 2020:M1, including all of Rafael Correa’s governments and part of that of his successor, Lenin Moreno. For Mexico, the wages are from its social security institute, the CPI was obtained from its national statistics institute (INEGI) and a global activity indicator (IGAE) was used instead of the IPI and obtained from its central bank. The sample goes from 2001:M1 to 2018:M4, which includes the governments of Fox, Calderón and Peña Nieto. For Nicaragua, all data comes from its central bank from 2007:M1 to 2018:M12, including all of Daniel Ortega’s last governments. For Peru, the data comes from its central bank, which reports real GDP in monthly frequency and was used instead of the IPI. The data goes from 2006:M7 to 2016:M7, which includes the governments of Alan García and Ollanta Humala. Finally, the data of Uruguay comes from its national statistics institute (INE) and goes from 2005:M3 to 2020:M1, including the presidencies of Tabaré Vázquez and José Mujica.

## 5. The evidence

We now turn to the main results of the work, presented with accumulated responses, forecast error variance decompositions and historical counterfactuals. Accumulated responses are preferred to impulse response functions because the focus here is on the long-run, rather than the short-run effects of the structural shocks. The most important results are derived, though, from the variance decompositions and historical counterfactuals, which do not indicate the presence of widespread populism in the region.

In Figs. 2 and 3, we report the accumulated responses using the estimates of the model in Eq. (1) with the identification scheme in Eq. (2) for the bivariate model (in dashed lines). Instead, for the trivariate model (in solid lines) we rely on the identification scheme in Eq. (3) and we present the confidence intervals at 68% (dark gray) and 95% (light gray).

Fig. 2 shows the accumulated responses of nominal wages to populist shocks under both specifications. Even though populist shocks’ effects over nominal wages in the long-run were left unconstrained under both specifications, nominal wages consistently rise due to the populist shock. So, it is comforting to see that this shock has generally the expected positive permanent effect over nominal wages.

Moreover, the median effect on nominal wages is consistently larger under the bivariate model than the trivariate VAR. These results in Fig. 2 are compatible with the presence of demand shocks that increase nominal wages but are confounded with populist shocks under the bivariate model (a la Keating, 2013). In the cases of Peru and Nicaragua, the median estimates in the short run are greater under the trivariate model but not statistically different to the bivariate one.

We turn now to the accumulated responses of populist shocks on real wages, shown in Fig. 3. While there is no permanent impact because of the long-run restriction, it is important to highlight that real wages’ responses to populist shocks can be different from zero in the short-run. One would expect positive populist shocks, that rise nominal wages, to produce at least transitory increases in real wages. There is a group of countries for which that is the case: Brazil, Chile, Colombia and Ecuador. For these countries,



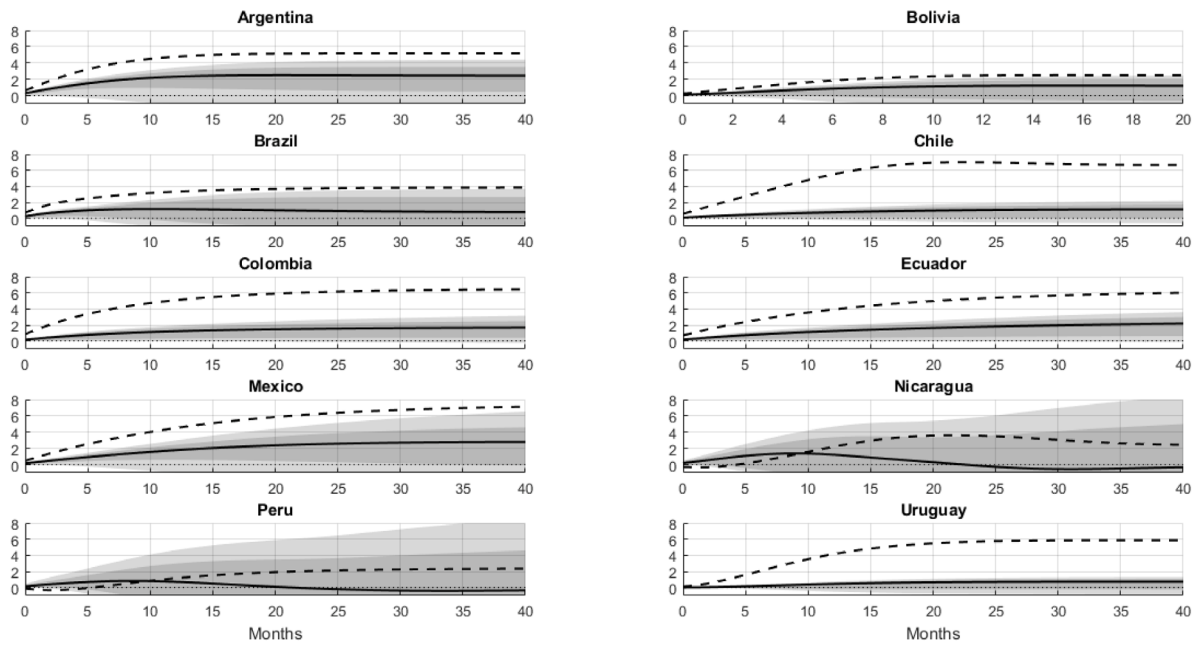


Fig. 2. Accumulated responses of nominal wages to populist shocks, trivariate (—) and bivariate (---) VAR medians.

Note: The median and the 68% and 95% confidence intervals of the trivariate VAR are shown with the solid line and the shaded areas, respectively. The dashed line shows the median of the bivariate model. The horizontal axis depicts months, except for Bolivia that consists on quarters. Based on 2000 bootstrap replications of the bivariate VAR and on 10,000 posterior draws of the trivariate VAR.

both models produce qualitatively similar positive responses, although the trivariate VAR response is quantitatively weaker than the bivariate one. This quantitative difference between models is consistent with the presence of demand shocks.

There is a second group of countries for which the real wages barely change, according to the trivariate VAR responses. This phenomenon suggests a strong short-run price pass-through of labor costs to goods' prices in Argentina, Mexico, Nicaragua, Peru and Uruguay. In fact, [Aaronson \(2001\)](#) has verified that prices might not be so sticky when nominal wages rise. It can be assumed that countries with faster price pass-through of wages can be those with higher inflation. This reasoning can certainly apply to the case of Argentina.

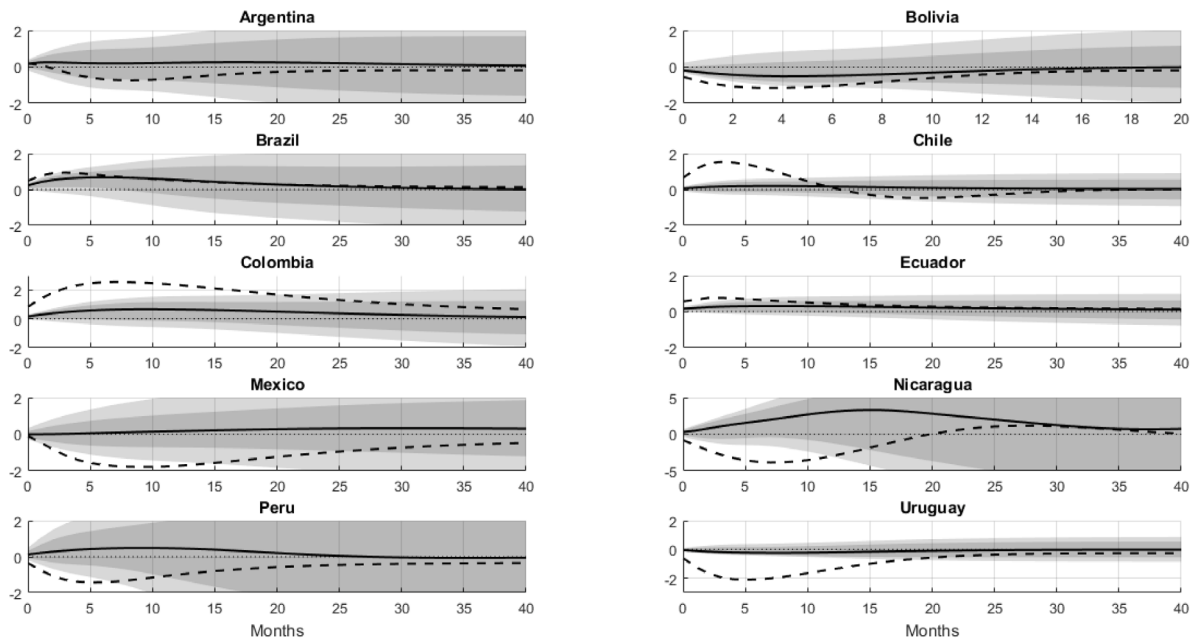
For this same group, under the bivariate model, the accumulated responses even show a fall in real wages after a populist shock. This is the case for Argentina, Mexico, Nicaragua, Peru, Uruguay, and Bolivia (for the latter, this is the case in both models). One plausible explanation for this counterintuitive short-run dynamics of real wages is that workers might have monetary illusion. In such a scenario, real wages might fall because of the misperceptions generated by the populist policies. In other words, workers might be fooled to work more even with lower real wages, as in the money surprise model of [Lucas \(1972\)](#).

[Figs. A.8 and A.9](#) in the [Appendix](#) show the remaining accumulated responses for the bi- and the trivariate VAR models, respectively. The interested reader can verify there that positive productivity shocks increase both real and nominal wages for most countries. The only exceptions are the nominal wage decrease in Chile and Argentina when subject to productivity shocks under the bivariate and trivariate VAR specification, respectively. This result can be interpreted in line with the technology shocks described in [Galí \(1999\)](#), that decrease hours worked and, hence, can have a negative impact on nominal wages. The rest of the accumulated responses shown in [Fig. A.9](#) of the [Appendix](#) are also as expected.<sup>11</sup>

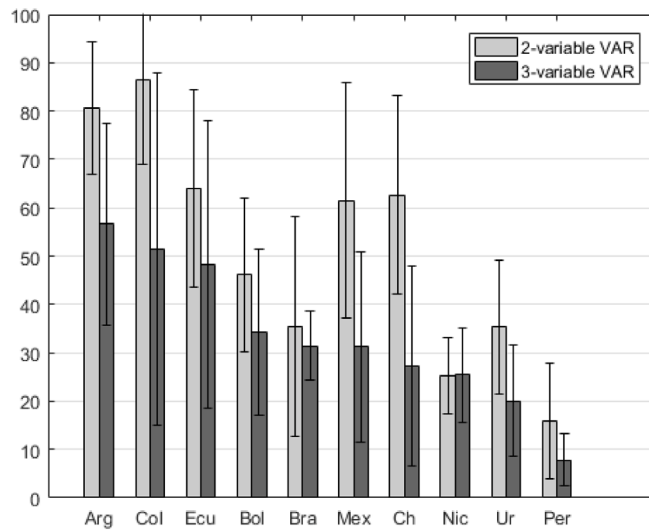
### Variance decomposition

From the estimation of the bi- and trivariate VAR models we obtain the variance decomposition of nominal wages to populist shocks. In particular, we focus on how much of nominal wages' volatility can be explained by populist shocks in the infinite horizon, as reported in [Fig. 4](#). This graph provides a first comparative insight into the degrees of populism in Latin America. According to our identification strategy, populist governments are those who influence income distribution in favor of workers by raising their nominal wages, disregarding the productivity of labor. Hence, those countries where populist shocks explain an important share of nominal wages' variations, can be suspected of populism.

<sup>11</sup> [Fig. A.9](#) in the [Appendix](#) shows that demand shocks have generally a non-significant effect over nominal wages and a negative impact over real wages, which suggests that wages are more sticky than prices. The last three columns of [Fig. A.9](#) show the effects of the structural shocks over output: productivity shocks have permanent effects, populist innovations have a negligible impact and demand disturbances have positive effects.



**Fig. 3.** Accumulated responses of real wages to populist shocks, trivariate (—) and bivariate (---) VAR medians. Note: The median and the 68% and 95% confidence intervals of the trivariate VAR are shown with the solid line and the shaded areas, respectively. The dashed line shows the median of the bivariate model. The horizontal axis depicts months, except for Bolivia that consists on quarters. Based on 2000 bootstrap replications of the bivariate VAR and on 10,000 posterior draws of the trivariate VAR.



**Fig. 4.** Variance decomposition of nominal wages to populist shocks. Note: The bars show the variance decomposition median estimate at the infinite horizon and their respective standard errors. Based on 2000 bootstrap replications of the bivariate VAR and on 10,000 posterior draws of the trivariate VAR.

In [Fig. 4](#) we show the results for both VAR specifications (the bivariate in light gray and the trivariate one in dark gray). The countries are ordered from the most to the least populist, according to the trivariate model. First of all, the estimates from each model are relatively similar (or not different from each other, statistically speaking). In fact, the ordering would not be too different if the bivariate VAR were used to rank the countries' populist experience. The only exceptions are Mexico and Chile, for which the variance decomposition with the bivariate VAR indicates more populism. This result suggests that, for these countries, demand shocks were relevant sources of nominal wages' fluctuations, as shown in [Fig. A.11](#).

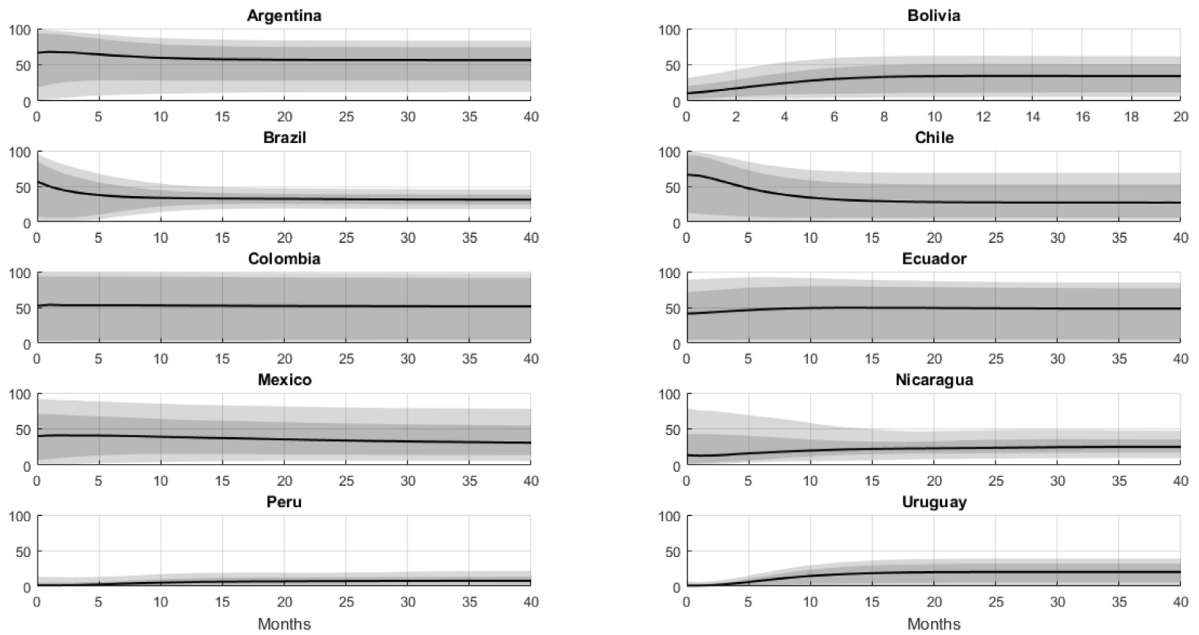


Fig. 5. Variance decomposition of nominal wages to populist shocks, trivariate VAR.

Note: The solid line depicts the posterior median, while the shaded areas show the 68% and 95% posterior confidence intervals. The horizontal axis depicts months, except for Bolivia that consists on quarters. Based on 10,000 draws of the estimated VAR model (1) identified with scheme (3).

**Countries' classification.** The results in Fig. 4 are useful to categorize countries into three broad groups: the non-populist, the potential populist and the intermediate ones. These categories are roughly speaking, as follows: if the majority of the variation in nominal wages is consistently explained by the populist shock, then the country is potentially a populist one, i.e., if the median estimate is above 50%. Similarly, if the median estimate of the variation in nominal wages explained by the populist shock in the trivariate VAR model is less than a quarter, we classify the country as non-populist. We are in an intermediate case when the populist shock explains between 25% and 50% of the nominal wages variation in median.<sup>12</sup>

For instance, in spite of the coarse comparison between populist, productivity and demand shocks, the cases of Nicaragua and Peru are manifestly **non-populist**. The populist shocks explain less than 25% in median of their nominal wages' volatility under both models. This suggests that the bivariate model provides a robust classification of non-populist regimes. Moreover, in the case of Peru, according to the trivariate model indicates than less than 10% of the nominal wages variability is explained by the populist shock. Relying on Fig. 4 and also on Fig. 5, which shows the intermediate horizons of the variance decomposition, we also include Uruguay in this category.<sup>13</sup> The country's variation of nominal wages is consistently (and precisely) estimated below 20%. These results are revealing, especially so because the presidencies of Daniel Ortega in Nicaragua, Alan García and Ollanta Humala in Peru and Tabaré Vázquez and, especially, Pepe Mujica in Uruguay have been typically considered populist.

The **potential populists** are also clear: Argentina, Colombia and, to some extent, Ecuador.<sup>14</sup> While the case of Argentina is consistent with previous findings in economic history (see Campos and Casas, 2020), the case of Colombia is, at least, puzzling. Colombia's presidents during the period were either right-wing or center-right and have not been characterized as populist. Looking back in the recent history, the literature does not signal classical populist leaders either. On the contrary, Colombia has a track of sustained growth and orthodox economic policies since the 1980's.

Instead, the administrations of the Kirchners in Argentina and Correa in Ecuador have been already characterized as populists by Acemoglu et al. (2013). Additionally, the case of Ecuador is interesting, due to the dollarization of the currency, which implies that there is no possibility of debt monetization and, hence, populism becomes less likely. However, our identifying assumption relies on wage policy. So, it can be assumed that a populist leader can make pressure for wage rises in the private sector without the need of deficit financing.

The **intermediate cases** are the most interesting ones: Brazil, Bolivia, Mexico and Chile. These countries had between 25% and 50% of the variation of nominal wages explained by populist shocks, at longer time horizons. Prima facie, the case of Brazil and

<sup>12</sup> Note that the 25% and 50% thresholds are relatively arbitrary. In this specification, more than 50% implies that the populist shock is more important than the productivity and demand innovations in determining the nominal wages.

<sup>13</sup> Fig. A.11 in the Appendix shows the full variance decomposition of nominal wages, to all shocks.

<sup>14</sup> The median estimate for Ecuador is 48%, too close to our 50% threshold to discard it as a potential populist, considering the uncertainty around the estimates.

Bolivia are not surprising, Lula da Silva and Evo Morales are both stereotypical representatives of the Latin American new Left: ex-union leaders, left wing charismatics with good oratorical skills. The Mexican case is less obvious: traditionally ruled by the *Partido Revolucionario Institucional* (PRI),<sup>15</sup> the conservative party PAN ruled two thirds of the period we study. Similarly, for almost half of the period, Chile was ruled by Michelle Bachelet who belongs to the Socialist Party, but was never associated with New Latin American left due to her relatively centrist policies and moderate ruling style. According to the literature, Chile never had classical populist leaders, except for Salvador Allende in Chile in the 1970, who is sometimes consider as such (Dornbusch and Edwards, 1990).

For both, Mexico and Chile, there is a large degree of uncertainty, as seen in Figs. 4 and 5. In particular, Chile is the country with the lowest median estimate of the group, 27%, close to the 25% lower threshold, especially considering the uncertainty around the estimates. If we constructed a model with three equiprobable random shocks, this country would be more populist. Hence, we consider it a “mild” intermediate case or even a non-populist one.

For completeness, in the Appendix we report the full set of the variance decompositions of the bivariate and the trivariate VARs in Figs. A.10 and A.11, respectively. In particular, these figures show that real wages are not significantly affected by populist shocks. Instead, they are mainly affected by either productivity or demand innovations. This evidence is quite comforting as populist shocks are not expected to have a significant impact on the variations of real wages.<sup>16</sup>

In sum, we are left with countries for which there is a large suspicion of populism, via increases of nominal wages that are not paired with productivity (nor demand) shocks: Argentina, Ecuador and Colombia. Also, there are three countries, who could be considered populists: Brazil, Bolivia and Mexico. Except for the case of Colombia and Mexico, the remaining countries could have been suspected of economic populism before this analysis. Remarkably, Peru, Uruguay, and Nicaragua – countries ruled by charismatic and popular leaders from the left – are definitely not populist according to our estimates.

Hence, we look with more detail on the shocks and construct an historical counterfactual, which will allow us to disentangle the intermediate cases and more.

### Historical counterfactuals

The forecast error variance decomposition of nominal wages described above is crucial to quantify populism. However, an historical counterfactual can complement that tool by focusing on increases on nominal wages only, and by observing how were these rises affected by populist shocks. This is important, because our main interest here are positive populist shocks that typically rise nominal wages, as shown in Fig. 2. In addition, a historical counterfactual allows us to compare different magnitudes of rises in nominal wages.

Fig. 6 shows the actual (detrended) nominal wages variations with continuous lines, together with its historical counterfactual for the bivariate and the trivariate VAR estimates with dashed and dotted lines, respectively.<sup>17</sup> These lines represent the evolution that nominal wages’ would have had if there were no populist shocks. The shaded areas represent the positive differences between the wage and its counterfactuals. The dark plus the light gray shaded areas represent the presence of populism under the bivariate VAR estimation only, while the dark shaded area indicates the presence of populism for both specifications. In extent, the bigger the shaded areas are, the stronger were the populist shocks during the nominal wages’ increases. And the bigger the dark shaded area is, the more confident can we be of the presence of populism, because this estimate is robust to both specifications.

Focusing on the darker areas, it can be observed in Fig. 6 that populism has not been a characteristic feature of this period. Beginning with the non-populist countries (Peru, Uruguay and Nicaragua), even when there are large variations of nominal wages, the differences between the counterfactual and the observed wage are negligible, and rarely explained by both models. A similar situation is observable in the case of Chile and, especially, Mexico. In these cases, it is not only that the counterfactuals overlap almost entirely, but also the nominal wages are relatively constant during this period. The only small discrepancies that could be explained by populist shocks are during the Great Recession of 2008.

The remaining intermediate cases (Brazil and Bolivia) and the populist ones (Argentina, Colombia and Ecuador) are analyzed individually.

**Argentina’s** case is straightforward. There is a large volatility of nominal wages that shows persistent differences with the counterfactuals for sustained periods of time. And these discrepancies are largely explained by the populist innovations (with both models).

In **Colombia**, the increase in nominal wages since 2014 coincides with Santos’ second term, and they were mainly driven by populist shocks. Nonetheless, these rises were mild when compared with the rest of the countries. So, it can be observed that the presence of populism was barely significant in economic terms.

**Brazil’s** nominal wages are relatively volatile but the discrepancies with the counterfactuals are explained mostly with the bivariate model (i.e., they are not robust to the trivariate VAR specification). That is, they are not generally robust to introducing a demand shock, except during the Great Recession. Only during that time, populism may have played a role according to both models.

<sup>15</sup> PRI means Institutional Revolutionary Party, as it was founded by some participants of the Mexican revolution.

<sup>16</sup> As for the output response calculated with the trivariate VAR shown in Fig. A.11, there is no clear pattern. Though productivity and demand disturbances tend to dominate, populist shocks seemed to play a non-negligible role in Bolivia, Peru and Uruguay.

<sup>17</sup> Nominal wages are detrended in Fig. 6, as it is usually done when comparing any variable with its counterfactual. On the other hand, when the data is described in Fig. 1, nominal wages are not detrended in order to show their actual evolution.

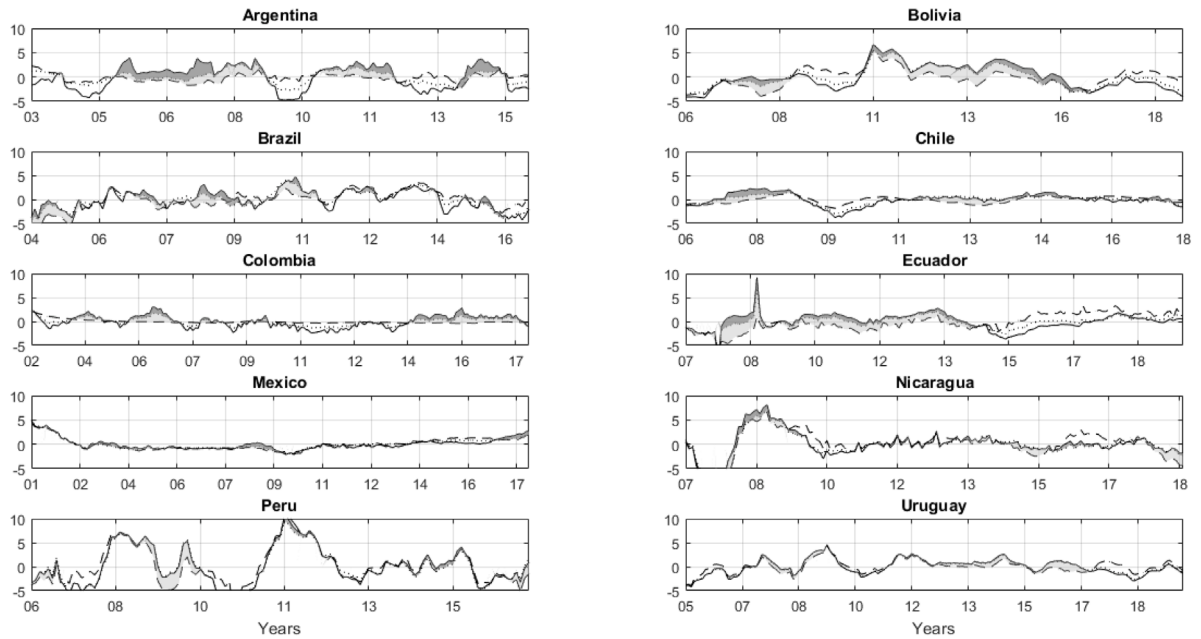


Fig. 6. Counterfactuals of (detrended) nominal wages without populist shocks.

Note: Nominal wages variations (—), bivariate (---) and trivariate (···) counterfactuals without populist shocks. Dark plus light gray areas indicate populism for bivariate VAR only. Dark area indicates populism for both models. Based on 2000 bootstrap replications of the bivariate VAR and on 10,000 posterior draws of the trivariate VAR.

**Bolivia** shows relatively large volatility of nominal wages and discrepancies with its counterfactuals. These differences are explained with both models, to a certain extent, both before the Great Recession and between 2014 and 2016. In comparison to the least populist country (Peru), and taking into account the variance decomposition, Bolivia could be considered to have had populist economic policies that increased nominal wages, regardless of the workers' productivity.

**Ecuador's** case is similar to Bolivia's. There is a relative large volatility with sustained discrepancies, mostly explained by populism since the Great Recession until 2014. Coincidentally, this period coincides with Correa's terms until the year after his last re-election.

In sum, we confidently say that Argentina had populist policies in the XXI century, and that, to some extent, Correa's Ecuador and Evo Morales' Bolivia as well. Brazil has seen some variation of the nominal wages explained by populist shocks, especially during the great recession.

A caveat: It could be argued that other populist economic policies may have an effect on the workers' capacity to consume goods and services. In general, social spending and market interventions may have populist intentions. In particular, price controls, cash transfers and the fiscal system (taxes and subsidies) could be interpreted as populist policies. If any of these policies were extensively used in non-populist countries (like Nicaragua and Peru), then it may raise suspicions about the use of nominal and real wages to identify populist regimes. It turns out that the opposite is true, more populist countries are more likely to rely on those policies (Peláez, 2009; Lustig et al., 2014).<sup>18</sup>

Similarly, our data does not include wages in the informal sector. This is not problematic because populist governments' policies are more likely to have a direct effect in the regulated, formal market rather than the informal one. Beyond this institutional argument, although there is a gap between informal and formal markets, the wages are positively correlated (Loayza and Rigolini, 2011). Moreover, this gap depends on long-term institutional changes (Ceni, 2014 and Loayza et al., 2009), which tend to be sluggish.<sup>20</sup>

It is important to highlight that our analysis flows from the variance decompositions to the historical counterfactuals without entering into contradictions, but refining the results. For instance, the variance decomposition implied that, in order of importance, Argentina, Colombia, Ecuador, Bolivia, Brazil and Mexico had a significant presence of populist innovations driving nominal wages. However, the following step discards Mexico and Colombia from this group, as it becomes clear by looking at Fig. 6 that these results

<sup>18</sup> According to Peláez (2009) and the Index of Economic Freedom,<sup>19</sup> there is more economic freedom in the countries that are not populist with our measures. Similarly, when we look at the use of taxes, subsidies and transfers, Brazil and Argentina are at the top of our sample, while Nicaragua and Peru are at the bottom (see Azevedo et al., 2013; Lustig et al., 2014, 2020). Hence, the degree and effectiveness of social spending seems to actually be correlated with populism.

<sup>19</sup> Heritage Foundation: <https://www.heritage.org/index/heatmap>.

<sup>20</sup> Additionally, using an index of informal wages for the case of Argentina, we find that (i) the correlation between them is large (0.6) and (ii) including this data does not change the results of our empirical exercise. Available upon request.

were probably amplified by calculating the effect of populist shocks both in rises and drops of nominal wages, and not taking into account the magnitude of these changes.

## 6. Conclusions

In this paper we propose an updated measure of populism in Latin America, and a novel methodology to quantify populist shocks. The advantages of using this methodology to investigate populism is that it is not demanding in terms of the data required and that the identifying assumption is quite accurate. This is, that populist shocks cannot have permanent effects on real wages. The main idea underlying this identifying assumption comes from the work of [Canitrot \(1975\)](#) who, among others, stated that truly populist leaders force income distribution favoring workers in the short-run, but causing prices to rise in the long-run.<sup>21</sup>

Our results come from two VAR models, with two and three variables, with similar identification strategies of the populist shock. Even though the results are qualitatively similar, the bivariate model may overestimate the degree of populism as some demand shocks may be confounded with populist ones. Indeed, in most cases, the trivariate model shows a lower degree of populism (as measured with the median estimate of the variance decomposition). Hence, the bivariate model seems more appropriate for when there are data limitations (like in historical estimations). In spite of its simplicity, the bivariate VAR does well in determining the absence of populism. On the contrary, given the richness of our data, the trivariate VAR allows us to derive more conclusive results, especially when looking at the historical counterfactuals.

The main results of the work are obtained calculating the accumulated responses, the variance decompositions and the historical counterfactuals. The last two tools are particularly useful as they can determine, respectively, how were nominal wages variations affected by populist shocks and which would have been the increase in nominal wages were these shocks absent. The evidence indicates that the governments in Nicaragua, Peru and Uruguay were clearly non-populist and that those of Bolivia, Brazil and Ecuador had quite a moderate level of populism. Only in Argentina were populist shocks important drivers of nominal wages' rises. It is then concluded that, with the exception of Argentina, there is no evidence of a predominance of populist shocks elsewhere in the region. Hence, the New Latin American left should not be characterized as a populist movement. Or at least, important distinctions between these countries should be taken into account.

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Appendix

**VAR estimation.** We describe here the estimation of the VAR model under both specifications. For a detailed description, see [Kilian and Lutkepohl \(2017\)](#).

In order to perform the estimation, the structural MA model (1) is expressed in its VAR form:

$$Y_t = A_1 Y_{t-1} + A_2 Y_{t-2} + \dots + A_p Y_{t-p} + A_0 e_t$$

where  $A_i = B_0^{-1} B_i$  for  $i = 1, 2, \dots, p$  and  $A_0 = B_0^{-1}$  is the impact matrix. Once stationarity of the variables is checked, the VAR is represented in its reduced-form:

$$Y_t = \mathbf{A} Y_{t-1} + u_t \quad u_t \sim \mathcal{N}(0, \Sigma_u)$$

where  $u_t = A_0 e_t$  and  $\mathbf{A}$  is the companion form. The bivariate VAR is estimated by OLS and confidence bands are built by bootstrapping 2000 times from estimated residuals.

For the trivariate VAR, a Bayesian estimation is performed instead. Because, whenever sign restrictions are used, the VAR is more often estimated with Bayesian rather than frequentists methods. This implies that the confidence bands and the point estimates are derived from a posterior, instead of a bootstrapped distribution. In addition, it must be kept in mind that inequality restrictions, like the ones imposed in (3), imply that the model is only set identified. Hence, any model satisfying those restrictions is equally valid. So, the confidence bands reflect not only estimation but also identification uncertainty.

The reduced-form VAR is estimated with the independent Gaussian–Inverse Wishart prior and the Gibbs sampler by:

$$g(\theta | y) \propto f(y | \theta)g(\theta)$$

where the posterior distribution  $g(\theta | y)$  is estimated from the joint sample  $f(y | \theta)$  with the  $g(\theta)$  prior distribution, and  $\theta = (\alpha, \Sigma_u)$  are the parameter estimates (where  $\alpha$  represents the reduced-form VAR coefficients). The prior is assumed to be:

$$g(\alpha, \Sigma_u) = g_\alpha(\alpha)g_{\Sigma_u}(\Sigma_u) \quad ; \quad \alpha \sim \mathcal{N}(\alpha^*, V_\alpha) \quad ; \quad \Sigma_u \sim \text{IW}_K(S_*, n)$$

<sup>21</sup> Also present in [Dornbusch and Edwards \(1990\)](#).

where a random walk prior is selected for the prior mean ( $\alpha^*$ ), because the data shown in Figs. 1 and A.7 show persistence. And for the prior variance  $V_\alpha = \eta I_K$ , the hyperparameter is set at  $\eta = 1$ , reflecting the ignorance about its true value. As for the hyperparameters of the covariance matrix, the draws are obtained from the Wishart distribution with prior  $S_* = I_K$  and  $n$  degrees of freedom. A burn-in sample of 20,000 draws is run, and then 10,000 draws are kept to obtain the estimates of the reduced-form VAR parameters  $\theta$ . As for the structural estimation, it is performed based on the algorithm developed by Arias et al. (2014) drawing with replacement from the reduced-form estimates and keeping only those short and long-term impact matrices satisfying the identification scheme described in (3).

After the VAR is identified using both schemes, we obtain the accumulated responses:

$$\Psi_n = \sum_{i=0}^n \Theta_i$$

where  $\Theta_i = (JA^iJ')B_0^{-1}$ ,  $J$  is an operational matrix and  $i = 0, 1, 2, \dots, H$  is the desired horizon. In order to allow for an easier comparison of the accumulated responses across countries in Figs. 2, 3, A.8 and A.9, the estimated covariance matrices are normalized using their first elements as denominator.

Next, the variance decomposition of variable  $k$  to shock  $j$  at horizon  $h$  is obtained with:

$$VarDec_j^k(h) = MSPE_j^k(h) / MSPE^k(h)$$

where  $MSPE_j^k(h)$  is the mean squared prediction error of each shock and  $MSPE^k(h)$  is the sum of the contribution of all disturbances to each variable.

Finally, we do the counterfactual of nominal wages without populist shocks with:

$$W_t - \hat{W}_t^p$$

where  $W_t$  is the (detrended) actual series of nominal wages variations and  $\hat{W}_t^p$  is the cumulative contribution of populist shocks to them up to date  $t$ , calculated with:

$$\hat{W}_t^p = \sum_{i=0}^{t-1} \Theta_{W,p,i} e_{p,t-i}$$

where,  $\Theta_{W,p,i}$  is the response of nominal wages to the populist shock at horizon  $i$  and  $e_{p,t}$  is the populist shock at time  $t$ .

Additional figures

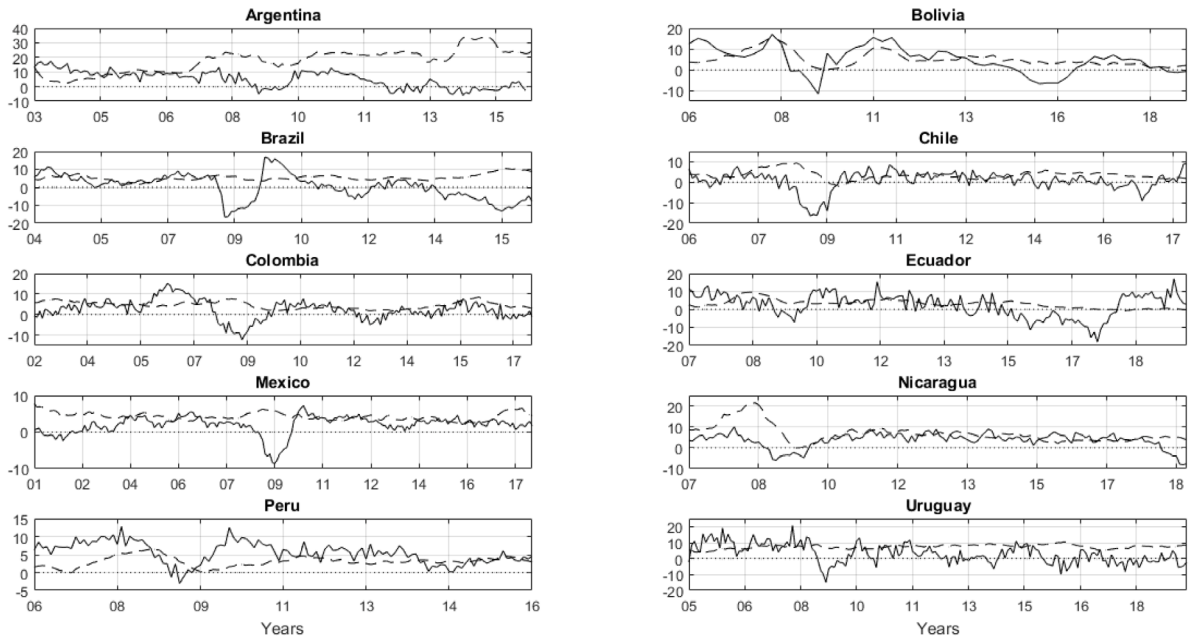


Fig. A.7. IPI (—) and inflation (---). Note: yearly variations in the log of IPI and CPI prices.

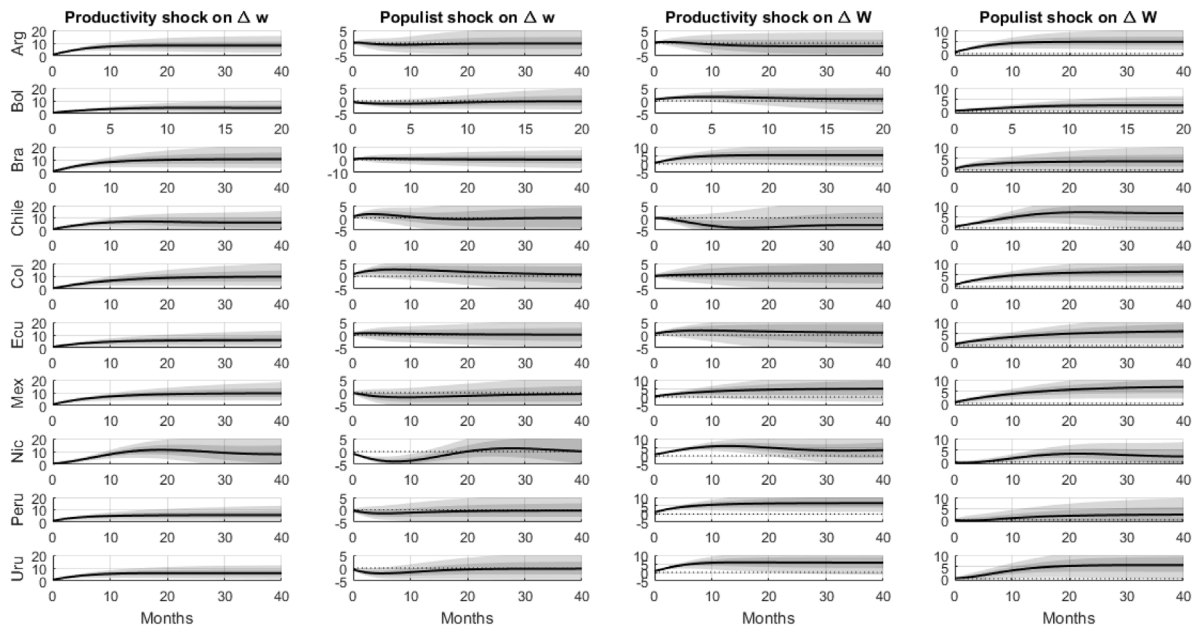


Fig. A.8. Accumulated responses, bivariate VAR.

Note: The median and the 68% and 95% confidence intervals are shown with the solid line and the shaded areas, respectively. The horizontal axis depicts months, except for Bolivia that consists on quarters. Based on 2000 bootstrap replications of the bivariate VAR.

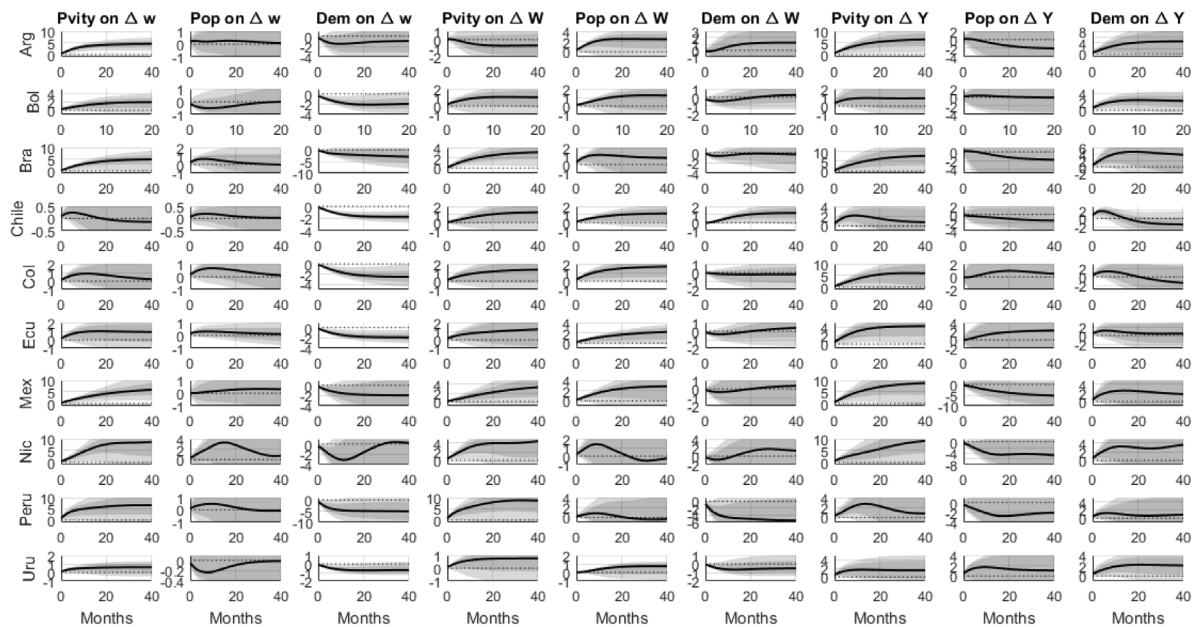


Fig. A.9. Accumulated responses, trivariate VAR.

Note: The median and the 68% and 95% confidence intervals are shown with the solid line and the shaded areas, respectively. The horizontal axis depicts months, except for Bolivia that consists on quarters. Based on 10,000 posterior draws of the trivariate VAR.



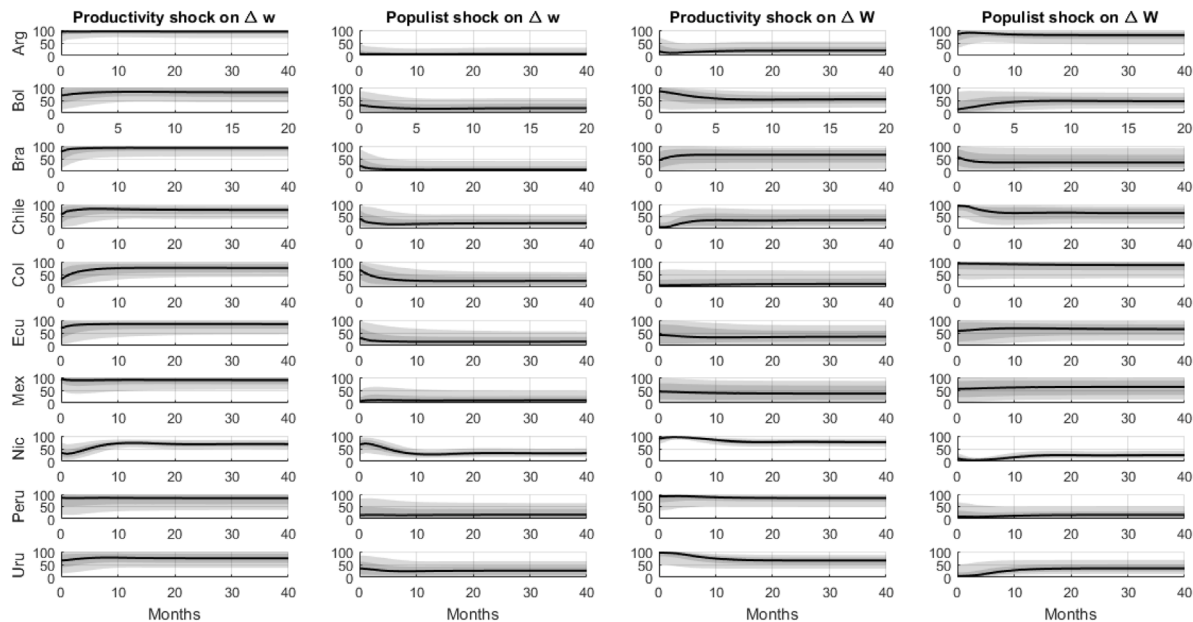


Fig. A.10. Variance decomposition, bivariate VAR.

Note: The median and the 68% and 95% confidence intervals are shown with the solid line and the shaded areas, respectively. The horizontal axis depicts months, except for Bolivia that consists on quarters. Based on 2000 bootstrap replications of the bivariate VAR.

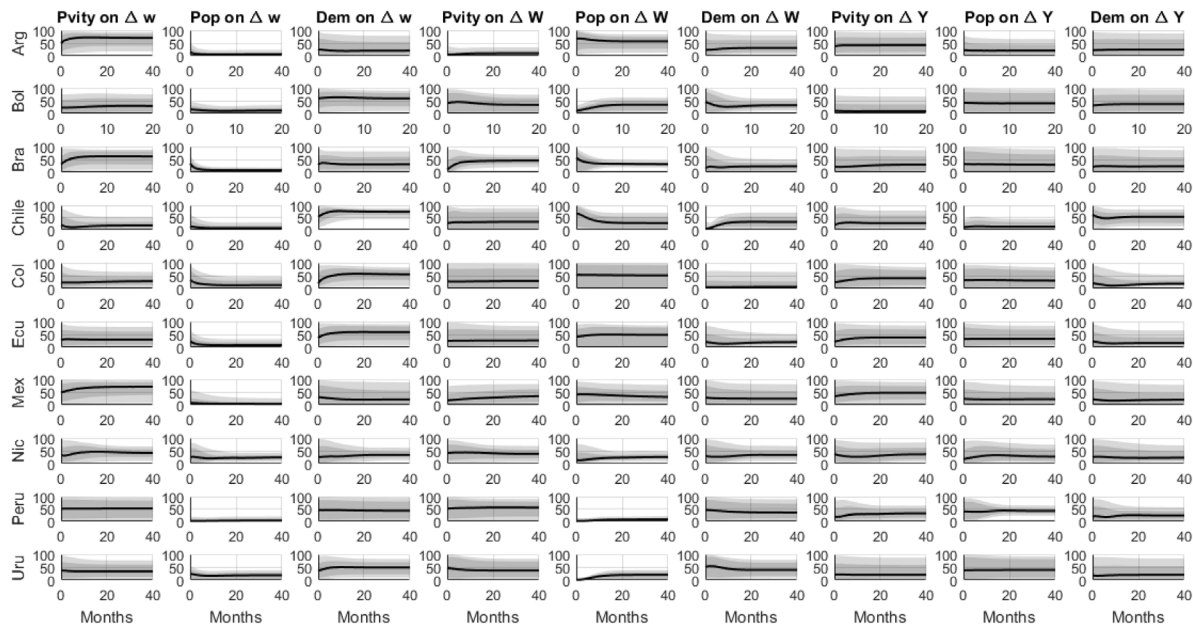


Fig. A.11. Variance decomposition, trivariate VAR.

Note: The median and the 68% and 95% confidence intervals are shown with the solid line and the shaded areas, respectively. The horizontal axis depicts months, except for Bolivia that consists on quarters. Based on 10,000 posterior draws of the trivariate VAR.

## References

- Aaronson, D., 2001. Price pass-through and the minimum wage. *Rev. Econ. Stat.* 83 (1), 158–169.
- Acemoglu, D., Egorov, G., Sonin, K., 2013. A political theory of populism. *Q. J. Econ.* 128 (2), 771–805.
- Algan, Y., Guriev, S., Papaioannou, E., Passari, E., 2017. The European trust crisis and the rise of populism. *Brook. Pap. Econ. Act.* 2017 (Fall), 309–400.
- Arias, J., Rubio-Ramírez, J., Waggoner, D., 2014. Inference based on SVARs identified with sign and zero restrictions: theory and applications. Working Paper, Federal Reserve Board, No. 1100.
- Arnson, C., de la Torre, C., 2013. *Latin American Populism in the Twenty-First Century*. Woodrow Wilson Center Press with Johns Hopkins University Press.
- Azevedo, J.P., Inchaust, G., Sanfelice, V., 2013. Decomposing the recent inequality decline in Latin America. The World Bank.
- Barret, P., Chavez, D., Rodríguez-Garavito, C., 2008. *The New Latin American Left: Utopia Reborn*. Pluto Press.
- Battilossi, S., Escario, R., Foreman-Peck, J., 2013. Fiscal policy response to cycles under two regimes: Spain 1950–1998. *Cliometrica* 7, 267–294.
- Blanchard, O., Quah, D., 1989. The dynamic effects of aggregate demand and supply disturbances. *Amer. Econ. Rev.* 79 (4), 655–673.
- Brandt, P., Freeman, J., 2009. Modeling macro-political dynamics. *Polit. Anal.* 17 (2), 113–142.
- Campos, L., Casas, A., 2020. Populism and income redistribution. *Econom. Lett.* 186 (108773), 1–5.
- Canitrot, A., 1975. La experiencia populista de redistribución de ingresos. *Desarrollo Econ.* 15 (59), 1–30.
- Cavallo, A., 2013. Online and official price indexes: measuring Argentina's inflation. *J. Monetary Econ.* 60 (2), 152–165.
- Ceni, R., 2014. Informality and government enforcement in Latin America. In: *Serie Documentos de Trabajo*; 21/14. Udelar. FCEA. IECON.
- Chesterley, N., Roberti, P., 2018. Populism and institutional capture. *Eur. J. Political Econ.* 53, 1–12.
- Colantone, I., Stanig, P., 2019. The surge of economic nationalism in western Europe. *J. Econ. Perspect.* 33 (4), 128–151.
- Cukierman, A., Tommasi, M., 1998. When does it take a nixon to go to China? *Amer. Econ. Rev.* 88 (1), 180–197.
- Di Tella, R., Rotemberg, J.J., 2018. Populism and the return of the “Paranoid Style”: Some evidence and a simple model of demand for incompetence as insurance against elite betrayal. *J. Comp. Econ.* 46 (4), 988–1005.
- Dornbusch, R., Edwards, S., 1990. Macroeconomic populism. *J. Econ. Dev.* 32, 247–277.
- Dornbusch, R., Edwards, S., 1991. The Macroeconomics of Populism in Latin America. National Bureau of Economic Research Conference Report.
- Edwards, S., 2019. Echoes around the World. *J. Econ. Perspect.* 33 (4), 76–99.
- Enders, W., Lee, B.S., 1997. Accounting for real and nominal exchange rate movements in the post-Bretton Woods period. *J. Int. Money Finance* 16 (2), 233–254.
- Gali, J., 1999. Technology, employment, and the Business Cycle: Do technology shocks explain aggregate fluctuations? *Amer. Econ. Rev.* 89 (1), 249–271.
- Gerchunoff, P., Rapetti, M., de León, G., 2020. La paradoja populista. *Desarrollo Econ.* 59 (229), 299–328.
- Gidron, N., Hall, P., 2017. The political of social status: economic and cultural roots of the populist right. *Br. J. Sociol.* 68 (S1), 57–84.
- Guiso, L., Herrera, H., Morelli, M., Sonno, T., 2018. Demand and supply of populism. *Bankpedia Rev.*
- Guiso, L., Herrera, H., Morelli, M., Sonno, T., 2019. Global crises and populism: the role of Eurozone institutions. *Econ. Policy* 34 (97), 95–139.
- Guriev, S., 2018. Economic drivers of populism. *AEA Pap. Proc.* 108, 200–203.
- Guriev, S., Papaioannou, E., 2020. The political economy of populism. *SSRN Electron. J.* (February).
- Hawkins, K.A., 2009. Is Chávez populist? *Comp. Polit. Stud.* 42 (8), 1040–1067.
- Howard, R., 2010. Language, signs, and the performance of power: The discursive struggle over decolonization in the Bolivia of Evo Morales. *Latin Am. Perspect.* 37 (3), 176–194.
- Keating, J., 2013. What do we learn from Blanchard and Quah decompositions of output if aggregate demand may not be long-run neutral? *J. Macroecon.* 38 (Part B), 203–217.
- Keefer, P., Scartascini, C.G., Vlaicu, R., 2019. Social trust and electoral populism: explaining the quality of government. *SSRN Electron. J.* (November).
- Kilian, L., Lutkepohl, H., 2017. *Structural Vector Autoregressive Analysis*. Cambridge University Press.
- Leon, G., 2014. Strategic redistribution: The political economy of populism in Latin America. *Eur. J. Political Econ.* 34, 39–51.
- Levitsky, S., Roberts, K., 2011. *The Resurgence of the Latin American Left*. Johns Hopkins University Press.
- Loayza, N.V., Rigolini, J., 2011. Informal employment: safety net or growth engine? *World Dev.* 39 (9), 1503–1515.
- Loayza, N.V., Servén, L., Sugawara, N., 2009. Informality in Latin America and the Caribbean. The World Bank.
- Lucas, R.E., 1972. Expectations and neutrality of money. *J. Econom. Theory* 4, 103–124.
- Lustig, N., Pessino, C., Scott, J., 2014. The impact of taxes and social spending on inequality and poverty in Argentina, Bolivia, Brazil, Mexico, Peru, and Uruguay: Introduction to the special issue. *Publ. Finance Rev.* 42 (3), 287–303.
- Lustig, N., et al., 2020. *Inequality and Social Policy in Latin America*. Technical Report, Tulane University, Department of Economics.
- Mudde, C., Rovira Kaltwasser, C., 2018. Studying populism in comparative perspective: Reflections on the contemporary and future research agenda. *Comp. Polit. Stud.* 51 (13), 1667–1693.
- Murillo, M.V., 2000. From populism to neoliberalism. *World Polit.* 52 (January).
- Norris, P., 2020. Measuring populism worldwide. *Party Polit.* 26 (6), 697–717.
- Peláez, R.F., 2009. Economic freedom: a comparative study. *J. Econ. Finance* 33 (3), 246–258.
- Posada-Carbó, E., 2011. Colombia after Uribe. *J. Democr.* 22 (1), 137–151.
- Prato, C., Wolton, S., 2020. Rational ignorance, populism, and reform. *Eur. J. Political Econ.*
- Rode, M., Revuelta, J., 2014. The Wild Bunch! An empirical note on populism and economic institutions. *Econ. Gov.* 16 (1), 73–96.
- Rodrik, D., 2018. Is populism necessarily bad economics? *AEA Pap. Proc.* 108, 196–199.
- Rooduijn, M., Pauwels, T., 2011. Measuring populism: Comparing two methods of content analysis. *West Eur. Polit.* 34 (6), 1272–1283.
- Rovira-Kaltwasser, C., Taggart, P., Ochoa, P., Ostiguy, P., 2017. *The Oxford Handbook of Populism*. Oxford University Press.
- Sachs, J., 1990. Social conflict and populist policies in Latin America. In: *Labour Relations and Economic Performance*. International Economic Association Series, pp. 137–169.
- Satyanath, S., Subramanian, A., 2007. The political economy of nominal macroeconomic pathologies. In: *IMF Staff Papers*, Vol. 54. (3), pp. 419–453.
- Sims, C.A., 1980. Macroeconomics and reality. *Econometrica* 48 (1), 1.
- Spruk, R., 2016. Institutional transformation and the origins of world income distribution. *J. Comp. Econ.* 44 (4), 936–960.
- Stankov, P., 2018. The political economy of populism: An empirical investigation. *Comp. Econ. Stud.* 60 (2), 230–253.
- Stankov, P., 2020. *The political economy of populism: An introduction*. Routledge.
- Taggart, P., Kaltwasser, C.R., 2016. Dealing with populists in government: Some comparative conclusions. *Democratization* 23 (2), 345–365.
- Van Kessel, S., 2015. Populist parties in Europe: Agents of discontent? In: *Populist Parties in Europe: Agents of Discontent?* Palgrave Macmillan UK, London, pp. 1–227.
- Webber, J., Carr, B., 2012. *The New Latin American Left: Cracks in the Empire*. Rowman & Littlefield Publishers.