

INSTITUTIONAL CHANGE AND POLITICAL CONFLICT IN A STRUCTURALIST MODEL

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Abstract

External conditions have historically influenced economic outcomes and have also impacted political institutions in developing countries. Focusing on these changes, this article develops a theoretical model of political conflict and democratic stability in a small open developing economy, using as the basis a structuralist macroeconomic model. In this model, political institutions are given in the medium run, but vary in the long run as a result of political conflict between capitalists, formal workers, and informal workers excluded from the benefits of social protection. The model suggests that a democratic breakdown is more likely the larger the informal sector, the lower the structural competitiveness of the economy, and the weaker the country's democratic tradition. The model also links the possibility of coups and democratization process with external shocks. Based mainly on the Latin American experience in democratic and dictatorial regimes, the article claims that combining industrial and technological policies—which ease the Balance-of-Payments constraint—with the building of a comprehensive system of social protection is key for the consolidation and stability of democracy.

1. Introduction

In recent decades political scientists and economists have developed formal models to explain the emergence and consolidation of democracy¹. While these models provide useful insights on the interactions between politics and some economic variables, they fail to consider key characteristics of developing economies such as external vulnerability and labor informality. By contrast, structuralist economists have highlighted the specific problems of developing economies but have generally shied away from formally exploring the implications of their models for democratic stability and political change. In this paper we take a structuralist macroeconomic model as a point of departure and extend it to discuss institutional change driven by political conflict.² We call this a structuralist model with endogenous institutions (SMI)³. We use the model to explore the ways in which political conflict can be managed without challenging democratic institutions.

The distributional struggle over the level of the wage share constitutes a key dimension of structuralist models and will represent the main driver of institutional change in the SMI model. In the medium run, when institutions are given, the wage share is driven by conflicting claims over

¹ Acemoglu and Robinson (2006, 2017) and Besley and Persson (2010, 2013) develop two models of democracy within the neoclassical tradition. Rodrik (2018) relates growing challenges to democracy to the constraints placed by a “hyper globalized” economy on the countries’ ability to mitigate the redistributive impacts of international trade. For a critique of these models and advances in modelling politics from a Post-Keynesian perspective, see Palley (2017a and 2017b). For an alternative perspective on institutions, including the role of democracy in a development context, see Chang (2002, 2003a). The discussion by Marglin and Bhaduri (1991) of the conditions for profit-led and wage-led growth and capital accumulation under different political arrangements was a major source of inspiration for this paper.

² There are different perspectives on what characterizes a structuralist model (see Taylor, 2000, pp. 1-1; Dutt, 1990). For the purposes of this article, following the ECLAC tradition, we define it as a combination of a Keynesian-Kaleckian approach to the role of aggregate demand in growth with the specific constraints that the productive structure (especially the pattern of specialization) places on economic growth and actors’ behavior (see Rodriguez, 2007; Porcile and Yashima, 2009). For comprehensive reviews and extensions of the BOP-constrained growth models, see Blecker and Setterfield (2019, especially chapter 10) and Ribeiro et al (2017).

³ There is a long tradition of studies on the political economy of development, especially in Latin America (Sunkel and Paz, 1970, and Cardoso and Faletto, 1979, are classical contributions), but to the best of our knowledge no work has yet formalized the links between conflicting claims, the external constraint, income distribution, and institutional change in developing economies. O’Donnell et al (1991) and O’ Donnell (1998) are pioneer and lasting contributions to the analysis of democracy and the transition from dictatorship to democracy in Latin America. See also Przeworski (2009).

income shares between workers and capitalists, subject to the Balance-of-Payments constraint. In the long run, institutions may change as a result of political conflict around income shares and formal employment. The intensity and direction of institutional change will depend on the relative power of three actors: formal workers, who demand protective institutions including stronger trade unions, employment protection and a more generous social wage; informal workers, who in developing countries have almost no access to labor rights and limited access to social benefits and are thus primarily concerned with formal job creation⁴; finally, capitalists, who aim at curbing protective institutions to reduce labor costs and maximize the profit rate.

Institutional change depends on the relative power of these groups and on social expectations about what constitutes an acceptable minimum (for the workers) and maximum (for the capitalists) wage shares and employment rates in a specific democratic society. These limits are historically given and are related to what we will call the “democratic threshold” of the country, defined by the degree to which actors in the society recognize democracy as the most desirable way of arbitrating conflicts and organize the polity. The democratic threshold depends on a variety of factors, including the level of education and the freedom of the media, as well as historical variables, including the persistence of democracy in the past and previous episodes of violence or civil war. The higher the democratic threshold, the lower the profit share (wage share) that the capitalists (workers) will accept without attempting to stage a coup (revolt).

Under certain conditions, the intensity of conflict becomes incompatible with democratic politics, and this makes a revolution or a coup d'état more likely. These conditions are a large share of informality in total employment, a low share of knowledge-intensive sectors in the pattern of specialization (which shapes the Balance-of Payments constraint), and a low initial democratic threshold. An underlying message of our paper is that we cannot understand domestic politics in countries like those in Latin America without understanding that the distributional conflict is more intense and volatile in the presence of high informality and external vulnerability.

This paper is inspired by our desire to explicitly incorporate the constraints placed by external disequilibrium on the stability of political democracy in developing economies. From an empirical perspective, we believe this type of analysis is relevant to understand both key features

⁴ In the SMI model, informal workers are the surplus labor allocated in subsistence activities. For a comprehensive analysis of the economic impact of surplus labor in developing economies see Ros (2000), chapter 2.

of the history of regions like Latin America as well as growing challenges to democratic values in some parts of the world (Diamond, 2015). Historically, a number of military coups took place in the 1960s and 70s when “Latin America’s growth process...had to keep struggling against a growing balance-of-payments constraint” (Palma, 2003, p. 135). More recently, Zucco and Campello (2020) have shown that the popularity of presidents and the desire for political change in Latin America is to a large extent driven by external conditions; the changes of social discontent increase significantly when commodity prices are low. In fact, the “signs of democratic erosion” evident in Latin America—as well as in parts of Africa (IDEA, 2019, p. 126; Wike and Schumacher, 2020)—may be related to the end of the commodity boom and could get worse due to the impact of COVID-19. At an international level, the literature suggests that a more integrated global economy has been an important factor in heightening economic and political tensions (Rodrik, 2018). We believe the SMI may help analyze the interactions between political and economic variables in countries whose policy space is constrained by external disequilibrium.

The paper is organized in six sections, besides this introduction. Section 2 present a simple structuralist macroeconomic model for the medium run, when the labor market and the external sector attain equilibrium by adjusting wages and prices within a given institutional setting. Section 3 incorporates politics to the model: it discusses actors’ interests, the distribution of power embedded in the SMI model and how institutions change in the long run as a result of the interplay between interests and power. Section 4 suggests a typology of political outcomes of the SMI for a given production structure, while section 5 explores cases in which institutional change may lead to a change in political regime (collapse of democracy) instead of being absorbed within the prevalent political regime. Section 6 discusses the positive association that exist between structural change and democratic stability. Structural change expands the space available to combine the absorption of informal workers into the formal labor market with external equilibrium, thereby making political democracy more stable. We also consider the possibility of a virtuous circle emerging from self-reinforcement between income distribution, structural change and political democracy. Section 7 concludes, emphasizing the usefulness of political economy theories that consider structural constraints in the periphery.⁵ The presentation in the main text relies mostly on

⁵ In this way, this paper should also be considered part of the effort to rethink development economics, recuperating insights from economists from the global South as well as heterodox economics more generally (Chang, 2003b; Amsden, 2003).

diagrams to convey the main intuitions of the model, leaving the technical details to a mathematical appendix.

2. Conflicting claims in the labor market and external constraints: explaining the medium run equilibrium

Our starting point is a structuralist model that emphasizes some key features of many developing countries, in particular informality in the labor market and a pattern of specialization in low-tech sectors. In the short run, prices, wages and productivity are given (the production function is one of fixed coefficients and constant returns of scale, see below); in the medium-run, they vary until equilibrium in the labor market (represented by a constant wage share) and in the external sector (represented by zero net exports as we assume there is no international lending in the medium run) are attained.⁶ Institutions and the pattern of specialization are constant in the medium run, but they vary in the long run.

The economy has three types of agents: formal and informal (or underemployed) workers and capitalists. Capitalists and formal workers negotiate the wage share (σ) in the formal labor market. The aim of formal workers, represented by the unions, is to increase their share in GDP, for which they set a target σ^D . Such a target is not arbitrary, but it considers the state of the demand for labor. If the formal sector is contracting and informality is on the rise, workers restrain wages demand out of fear of losing their jobs (and hence σ^D will be falling). If, on the other hand, the economy is growing steadily and so is the demand for labor, workers are encouraged to demand higher wages—their position in the negotiating table is strengthened by a more dynamic labor market (and hence σ^D will be increasing). The bargaining power of labor, *ceteris paribus*, can be captured by the level of the formal employment rate $\varepsilon = L/L^S$ (where L^S is labor supply): the higher is ε , the higher the workers' desired wage share σ^D . The difference $(1 - \varepsilon)$ is the underemployment or informality rate, which throughout the paper represents surplus labor in the

⁶ In the short run international lending can compensate transitory fluctuations in exports and imports, but the model assumes that in the medium run the deficit in current account per unit of capital must be zero. This is a more stringent equilibrium condition than the one usually used in BOP-constrained growth models, which requires that the deficit in current account as a percentage of the GDP equals a constant.

subsistence sector.⁷ Informal workers produce and consume their own subsistence salary defined as a constant proportion $\omega < 1$ of the real wage of formal workers (W/P). The implicit assumption is that productivity and welfare gains in the formal sector at least partially diffuse to the subsistence sector, improving the subsistence wage. In the rest of the paper we focus on the formal sector, assuming that the informal sector expands or contracts as a residual.

Figure 1 shows the combinations of wage share (σ) and formal employment rates (ε) that stabilize the labor market (which implies $\sigma = \sigma^D$ and hence $\hat{\sigma} = 0$), where “hats” represents proportional rates of growth (for instance, $\hat{\sigma} = \dot{\sigma}/\sigma$, and $\dot{\sigma}$ is the derivative of σ with respect to time). The $\hat{\sigma} = 0$ schedule shown in figure 1 is positively sloped. As the employment rate increases, a higher wage share is required for the labor market to be in equilibrium because the bargaining power of workers increases. In addition, negotiations between labor and capital occur within a certain institutional setting. A generous welfare system, powerful unions and collective bargaining strengthen the workers’ hand and raise the desired wage share in wage negotiations for the same level of employment ε . We denote the institutional framework with the letter V : the higher V , the higher the workers’ bargaining power. An increase in V shifts the entire schedule to the right (from $\hat{\sigma}_0 = 0$ to $\hat{\sigma}_1 = 0$ in figure 1). For any level of employment, a higher σ will be necessary in equilibrium when institutions strengthen the bargaining power of workers. As mentioned, we assume V constant in the medium run but will allow it to vary in the long run.

What about the equilibrium in the external market? When the wage share increases as a result of a rise in nominal wages, part of this increase is translated to prices. Assuming that international prices and the nominal exchange rate are given, the real exchange rate (RER⁸) falls and so does price competitiveness. In the medium run, the economy cannot sustain a level of formal employment higher (and a RER lower) than what is compatible with equilibrium in the current

⁷ The informal sector in developing economies plays the disciplinary role that Kalecki (1943) attributes to open unemployment in capitalist economies in general. More on this below.

⁸ The real exchange rate is defined as $q = EP^*/P$, where P^* are foreign prices, E the nominal exchange rate and P domestic prices. In the model presented in the mathematical appendix, we assume that domestic firms produce a single good which can be exported or sold in the domestic market at the price P with a constant mark-up. We are thus assuming the foreign and domestic goods are imperfect substitutes and that firms have some degree of control over the domestic price. Note, however, that the argument stands if we assume a flexible mark up and hence that a rise in wages increases the costs (and reduces profit margins) of exporters given the international price of the exported good. In this case, the loss of competitiveness arises from a fall in cost (not price) competitiveness, as the unitary cost of production of domestic firms increases with respect to the unitary cost of production of foreign firms.

account. Given the wage share, if the economy experiences a deficit, the level of aggregate demand and employment must fall to reduce imports. This gives rise to the external equilibrium schedule ($\hat{\varepsilon} = 0$), which shows all the combinations of wage share and formal employment that imply a zero deficit in current account. The $\hat{\varepsilon} = 0$ schedule is downward sloping: if the wage share is high (and the RER is low), the economy will be less competitive, aggregate demand will be low and hence formal employment rate must be low (see figure 2). For each value of the wage share, there will be just one value of the employment rate that returns zero net exports. This assumption is consistent with the extensive literature that highlights the role of the RER as a pivotal variable in the distributive conflict in developing economies, and especially in Latin America⁹, to the extent that such economies are seen as cases of Balance-of-Payments dominance in macroeconomic policy¹⁰.

⁹ See Bresser-Pereira (2008), Frieden (2015) and Guzman et al (2018).

¹⁰ The idea of BOP-dominance of the macroeconomic dynamics in Latin America has been suggested by Ocampo (2016).

Figure 1: Equilibrium in labor market: the $\hat{\sigma} = 0$ schedule and institutional change (increase in V)

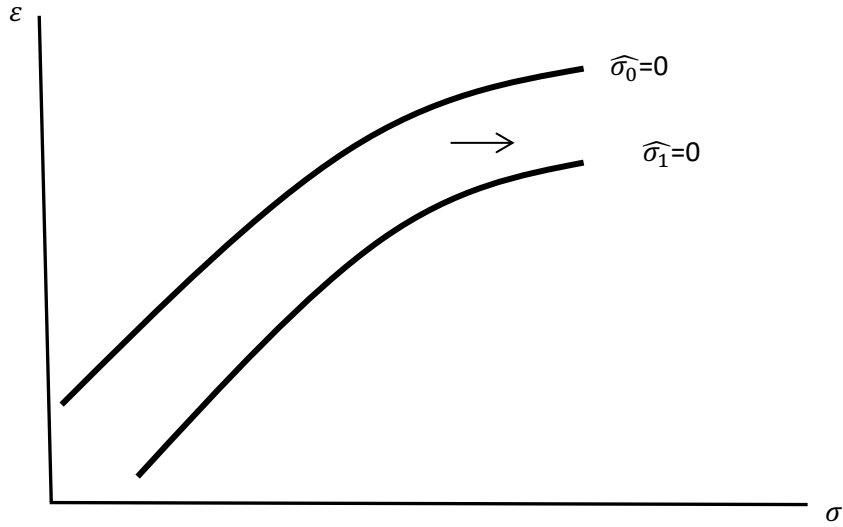
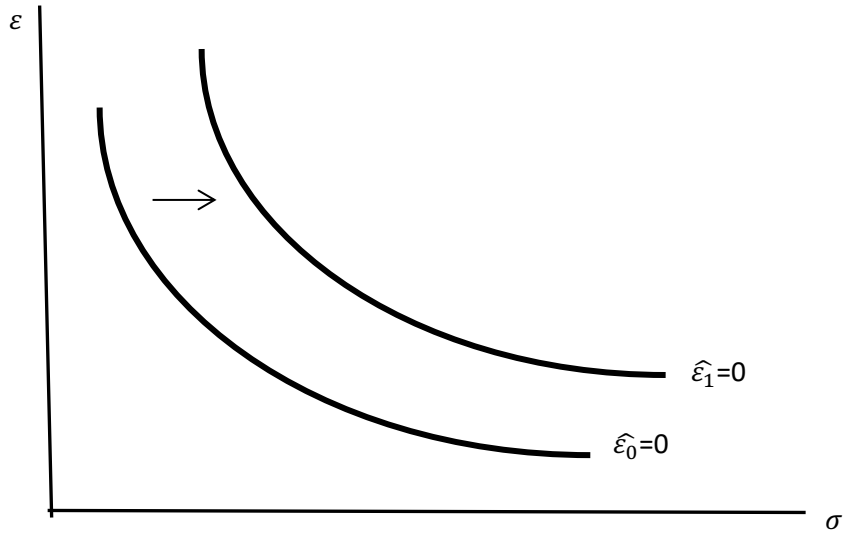


Figure 2: Equilibrium in current account: the $\hat{\varepsilon} = 0$ schedule and structural change (rise in technological capabilities)

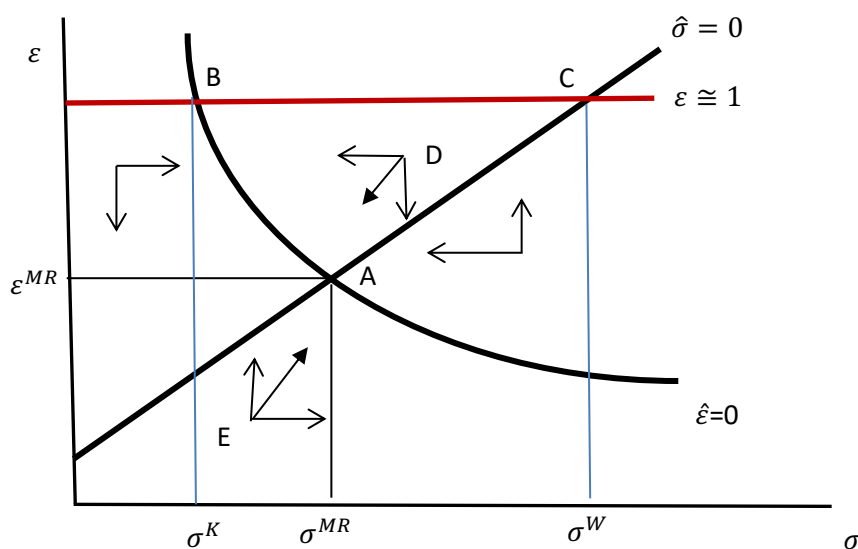


The pattern of specialization is crucial to define the formal employment rate consistent with equilibrium in the current account. An increase in technological capabilities and the diversification of exports shifts the entire $\hat{\varepsilon} = 0$ schedule to the right (from $\hat{\varepsilon}_0 = 0$ to $\hat{\varepsilon}_1 = 0$ in figure 2): countries with higher technological capabilities are able to attain a higher rate of employment for the same

level of the RER than less knowledge-intensive economies. *The ability to compete on the basis of technological capabilities define what has been called “structural” or “non-price competitiveness”*. Structural competitiveness is related to the determinants of evolution of the trade balance that do not depend on the RER¹¹. The pattern of specialization is given in the medium run but varies in the long run.

In the medium-run equilibrium, economic actors do not have reasons to modify their behavior. This means that (a) the desired and the observed wage share in GDP are equal; and (b) the external sector is in equilibrium and economic actors have no reasons to change aggregate demand and employment. The economy is on a stable equilibrium at ε^{MR} and σ^{MR} , where the superscript MR denotes “medium run”.

Figure 3: The employment rate and the wage share in the medium-run equilibrium



Points E and D are two different initial conditions in the phase diagram. Assume the economy is at point D in figure 3, which is above the level of employment compatible with equilibrium in the current account. Deficits make capitalists less optimistic about the future. They reduce the investment rate, aggregate demand and—as a consequence—the employment rate falls (see the mathematical appendix for the mechanics of the adjustment). With a given institutional

¹¹ For a discussion of the factors shaping “structural competitiveness” see Chesnais (1986), Gouvêa and Lima (2010) and Storm and Nastepaad (2015).

setting (V), workers regard their position as increasingly weak. Concerns about the possibility of losing jobs become more important in wage negotiations than the wage share. Unions' demands recede and the wage share in GDP declines. Prices go down and the RER goes up, making the economy more competitive. The final equilibrium in A features a lower rate of formal employment and a lower wage share in GDP. Point E is the opposite initial case in which the wage share is too low. There is a surplus in current account, an expansion of investment, and growing levels of employment and wage shares until the economy reaches A¹².

Point B represents the ideal scenario for the capitalists. The profit share ($1 - \sigma^K$) corresponds to the maximum profit share capitalists can attain with the existing production structure when the economy is approximately at full employment ($\varepsilon \cong 1$). At B there is equilibrium in the current account and the unions have no bargaining power at all in the economy (i.e., with minimum wage resistance and maximum “flexibility” in the labor market). On the other hand, point C represents the maximum wage share that is attainable with approximately full employment (σ^W) when technological capabilities and export diversification are so high that the external constraint is no longer binding. The differences between the wage share and employment rates consistent with the external constraint, full employment, and with workers' demands, set the scenario of political conflict¹³.

3. Economic and political power and the stability of democracy: introducing institutional change in the structuralist model

Institutions change as a result of actors' pressures based on their relative (economic and political) power. In capitalist democracies, economic power is mostly in the hands of the capitalists, while both workers and capitalists hold political power—coming from different

¹² The path from point D to A implies that the domestic inflation rate is lower than the international inflation rate. But if there is strong resistance from the unions to depreciation, or the capitalists aim to keep their prices rising out of fear of future increases in nominal wages, then this path will not be smooth and will intensify political instability.

¹³ In a pioneer work Olivera (1991), and more recently Gerchunoff et al (2019) and Oreiro et al (2020), discuss the implications of this scenario for the dynamics of the RER. All these models emphasize how political coalitions (formed in economies with limited technological capabilities and limited export diversification) can lead to the appreciation of the RER and compromise price competitiveness and external equilibrium. Lima and Porcile (2013) formalize the possible outcomes that emerge when different actors have different preferences over the RER.

sources. Formal and informal workers' political power come from their number and influence in electoral results. They can elect representatives that promote progressive taxes and transfers that redistribute income from capital to labor, regulations that strengthen the bargaining power of unions, and a rise in the social wage through public spending in health and education. On the other hand, in spite of being a minority, capitalists have considerable political power too. They usually control mass media, are the main donors to political parties and candidates, and influence public opinion through various means. They have what a growing number of authors call structural and instrumental power (Hacker and Pierson, 2011; Fairfield, 2015).

Workers do not constitute a homogeneous group. Informality often produces a split between “insiders” and “outsiders”. Insiders benefit from trade union rights, employment stability and more social benefits. They also benefit from a “truncated welfare state” that only provides health and pensions to those with formal jobs (Filgueira, 2007; Holland, 2018). Outsiders have low-paid jobs, weak social rights and are often under-employed. The existence of this reserve army reduces the power of unions in wage negotiations and creates a cleavage among workers. Conservative political parties and movements can create political wedges between formal and informal workers, thus weakening the overall political influence of the labor movement. This assumption is in line with Kalecki's view that capitalist economies will always retain some level of unemployment for political reasons. Unemployment (which in our model translates into higher informality because people need to make some income to survive) is a necessary tool to keep the discipline of the labor force and prevent workers from escalating redistributive demands.¹⁴

We will rely on a narrow definition of democracy, as a regime which regularly celebrates free elections and guarantees civil rights such as freedom of speech and assembly. *Contrario sensu*, a dictatorship imposes severe constraints on the activities of political parties and unions, and more generally on the ability of civil society to organize and influence political decision.¹⁵ We distinguish between institutional change within a democratic system and a change of political

¹⁴ In the words of Kalecki (1943): “...the maintenance of full employment would cause social and political changes which would give a new impetus to the opposition of the business leaders. Indeed, under a regime of permanent full employment, the 'sack' would cease to play its role as a disciplinary measure. The social position of the boss would be undermined, and the self-assurance and class-consciousness of the working class would grow. Strikes for wage increases and improvements in conditions of work would create political tension.”

¹⁵ A discussion of various concepts of democracy and the importance of agency in its definition can be found in O'Donnel (1998, 2001).

regime. Changes *within* a democracy (e.g. of the political parties in government) often result from shifts in the social coalitions between formal workers (clustered in unions), informal workers and capitalists. Yet in extreme cases, when the distributional struggle is particularly acute, a change of political regime may take place. This is so because the commitment of workers and capitalists to democracy is conditional. If democratic institutions are unable to prevent a sharp deterioration of the economy or secure an acceptable level of income distribution, political and economic forces may align to trigger a democratic breakdown. This paper deals primarily with coups aimed at disciplining unions—which have been dominant in Latin America for most of the 20th century (Drake, 2009). However, by identifying the forces that bring about explosive paths in politics, the SMI can help explain the emergence of dictatorships of any kind.

We begin the analysis with shifts occurring within democracy. Workers and capitalists have different preferences over social policies and labor protection. Workers form unions with links with (leftist) political parties, which in turn promote laws that strengthen the bargaining power of labor.¹⁶ Inversely, capitalists will push for a more flexible labor market, lower taxes and weaker welfare systems to maximize their bargaining power. Informal workers will aim to maximize formal jobs so that they can maximize their opportunities for a decent income, but will at times also support social rights (more on this below). We denote the degree of protection granted to labor within the prevailing institutional framework with the letter V , which thereafter will be labelled simply as “social protection”, always taking into account that such protection mostly covers formal workers.

The evolution of V is driven by the following differential equation:

$$(1) \dot{V} = (p - q)(\sigma^{MR}(V) - \sigma^K) - r(1 - \varepsilon^{MR}(V))$$

The motion equation (1) shows the evolution of institutions as a result of the demand for institutional change of formal workers (with political power p); the demand for institutional change of the capitalists (with political power q); and the demand for institutional change of informal

¹⁶ The enhanced power of labor explains why democracies tend to produce more public goods than dictatorships (Sen, 1999; Deacon, 2009).

workers (with political power r). $\dot{V} < 0$ implies that the bargaining power of formal workers is being weakened (social protection falters).

While capitalists seek to tame social protection, unions try to strengthen it. The higher is the difference between the medium-run equilibrium of the wage share in GDP ($\sigma^{MR}(V)$) and the wage share desired by the capitalists σ^K (i.e. the distance between points A and B in figure 3), the higher the pressure of the capitalists to reduce V . The term $(p - q)(\sigma^{MR}(V) - \sigma^K)$ reflects the political outcome of these contradictory forces. Historically, the building of social protection was a hard-won victory for workers. Such protection has never been totally guaranteed as the capitalists' push towards point B is a persistent driver of social conflict. Their continuous effort to weaken social protection are clearly expressed in the so-called "neo-liberal" and "hyperglobalization" policies from the 1990s onwards, and the austerity policies of the 2000s.

Informal workers vote and can be mobilized to influence outcomes in democratic politics. Their interests are ambiguous: we model their preferences as a nonlinear relationship between the informality ratio and demands for social protection. At low levels of informality in the total workforce, informal workers support unions' demands for more labor protection because they have a high probability of finding a job in the formal labor market; for high levels of informality, they switch to favor less protection of formal employment (see the mathematical appendix in which this nonlinear function of the informal workers political reaction to the level of formal employment is discussed). Although informal workers do have agency, they have more difficulties to organize than the capitalists and the formal workers. They may not have a clear political agenda, but their discontent can be mobilized by more organized groups to challenge and destabilize the political regime.

For the sake of simplicity, in the rest of the paper we will assume that formal and informal workers are on the opposite sides of the trade-off between wage share, price competitiveness and informality. In other words, we assume that the level of informality is high enough for informal workers to consider themselves alienated from existing institutions and mobilize (in some cases incensed by right-wing or a left-wing demagogues) to challenge them. By doing so we emphasize the "in" and "out" contradiction in the formal labor market. Therefore, the parameter $r > 0$ in equation (3) reflects the role of informal workers in weakening a social protection system of which

they feel excluded.¹⁷ Another way of expressing this idea is that the external constraint places a limit to the expansion of formal employment, which in turn prevents formal workers from making a durable political alliance with informal workers. The loss of price competitiveness (given the production structure) will always give the capitalists the power to undermine this alliance of workers through the fall of aggregate demand and the rise of informality.

The idea that the informal sector is a kind of reserve army that weakens the bargaining power of workers in the formal sector assumes that workers can move from one sector to the other. This is consistent with the existing evidence for many Latin American countries (see ECLAC, 2018; David et al, 2019). Much work in the region—and some other parts of the world—has discussed the struggle between insiders and outsiders in the labor market, including the negative impact of informality on unionization (Berens and Kemmerling, 2019; Schneider, 2013). Of course, the economic and political influence of informal workers will be less significant in cases where workers are highly heterogeneous and there are marked differences in terms of skills between workers in each sector. In this case, the value of the parameter r would be rather low due to the strict segmentation of the labor market and the term $(1 - \varepsilon)$ should be understood as representing open unemployment.

The alliance between capitalists and informal workers does **not require the latter** to have an articulated anti-social protection or right-wing political preference. In practice, what happens is that high informality places informal workers in such a difficult situation that they demand radical change, heightening the intensity of the political conflict. The literature usually emphasizes the channel that goes from political instability to informality (see Elbahnasawy et al. 2016). However,

¹⁷ The model does not exclude the possibility that formal workers “buy” some support from informal workers for enhanced labor rights through the extension of social benefits for the latter. In fact, this is arguably what has happened in Latin America during the 2000s in the context of the commodity boom (Carnes and Mares, 2015; Garay, 2016). If the extension of protection is financed through indirect taxes or payroll contributions, price-competitiveness will be reduced. Therefore, the effect of extending social protection through taxes on price competitiveness is the same as that of a rise in the wage share. On the other hand, if the extension of social protection is financed by means of a lump-sum tax on profits, the RER is unaffected. In this case the coalition between formal and informal workers will confront growing (political and economic) opposition of the capitalists to the taxation of profits. We believe these scenarios can be contemplated in the model by changing the values of p , q and r , but we do not explore this possibility in the paper.

there is a feed-back channel that goes from high levels of informality to a more volatile political setting, which is highlighted in our model.¹⁸

The social protection system will be on its long-run equilibrium V^{LP} when:

$$(2) \quad \frac{(p-q)(\sigma^{MR}(V^{LP})-\sigma^K)}{r} = 1 - \varepsilon^{MR}(V^{LP})$$

In equation (2), $\varepsilon(V^{LP})$ and $\sigma(V^{LP})$ are the employment rate and the wage share when $V = V^{LP}$. In this case σ will not only be in equilibrium in the medium run, but also in the long run, since there will be no further institutional change. When $V = V^{LP}$, the power of the alliance between informal workers and capitalists is exactly compensated by the political power of the unions that defend a protective institutional setting. Equation (2) can be used to discuss scenarios of democratic stability, instability and regime change.

4. A typology of political outcomes in the SMI when there is no structural change

In this section, we consider the different paths that political conflict may follow, depending on specific country's circumstances, focusing on equation (1). Taking the derivative of \dot{V} with respect to V gives:

$$(3) \quad \frac{\partial \dot{V}}{\partial V} = r\varepsilon_V + (p-q)\sigma_V, \quad \varepsilon_V < 0, \sigma_V > 0$$

The stability condition for the differential equation (3) requires that $(\partial \dot{V} / \partial V) < 0$ at $V = V^{LP}$. Recall that ε_V is negative and σ_V is positive. Stronger labor protection (a higher V) increases the wage share (hence $\sigma_V > 0$) and reduces the formal employment rate with current account equilibrium (hence $\varepsilon_V < 0$). If $p \geq q$, the stability condition boils down to:

$$(4) \quad |r\varepsilon_V| > (p-q)\sigma_V \Rightarrow \frac{\partial \dot{V}}{\partial V} < 0$$

¹⁸ See Perry et al (2007) and Tanaka (2010).

In equation (2), the share of informal workers ($1 - \varepsilon^{MR}(V^{LP})$) and the difference between the equilibrium wage share and the ideal wage share for the capitalists ($\sigma^{MR}(V^{LP}) - \sigma^K$) are necessarily positive. Therefore, a meaningful equilibrium requires $p - q > 0$. Equation (4) in turn states that democratic stability requires that the efforts of formal workers (employed workers with political power p) to expand social protection exactly compensates the combined forces of the informal workers (with political power r) and capitalists (with political power q) that seek to reduce social protections. Since $p > q$, the political power of formal workers should be higher than the political power of the capitalists to check their push to dismantle the welfare system.

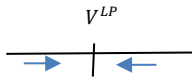
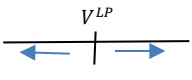
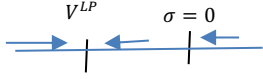
Equations (2), (3) and (4) produce three alternative paths for political institutions, summarized in table 1. In the analysis that follows we assume that the pattern of specialization does not change with changes in institutions (V)—that is, social protection has no impact on structural competitiveness (we will remove such an assumption later). This implies a stark trade-off between the employment rate and the wage share of formal workers. With no structural change, the economy always moves along the same isocline $\hat{\varepsilon} = 0$, all points representing combinations of employment rates and wage shares that ensure a balanced current account.

We define two critical levels for democratic stability: a critical level of employment, ε^Z , and a critical level of the wage share, σ^Z . These parameters represent democratic thresholds that trigger regime change. First, if the observed employment rate falls below ε^Z , informality will be so high, growth so slow and the wage share so high that the pressure of capitalists and the unrest of informal workers become strong enough to challenge democracy. An inverse situation happens when, with high levels of employment, the wage share falls below a critical level σ^Z —the minimum workers can accept. With $\sigma^Z > \sigma$ there will be protests and social unrest that strain democratic institutions to its limits. Protests and conflict accumulate entailing very high cost for the capitalists. In this context a coup will happen when the costs of staging it for the capitalists becomes lower than the costs of political turmoil and economic disorganization in firms and the labor market.

The critical employment rate ε^Z and the critical wage share σ^Z are exogenous in the model and depend on the “democratic threshold” of a country—i.e. democratic tradition, education and political culture—and the costs of a coup—e.g. GDP losses due to the economic disruptions that follow political crises, political violence, international support or condemnation, and economic

sanctions. The higher the democratic threshold and the costs of a coup, the lower will be ε^Z (higher levels of informality will be tolerated before the protests of informal workers combine forces with the elite to encourage a coup) and the lower will be σ^Z (lower levels of wage share in GDP will be tolerated by formal workers before political upheaval). Under a dictatorship, $p = r = 0$ ¹⁹ since formal and informal workers have no political power. It immediately follows that in equilibrium with a coup, the wage share is the one desired by the capitalists ($\sigma = \sigma^K < \sigma^Z$).

Table 1: Institutional change with no structural change: democratic and nondemocratic paths

<p>I. A stable democratic path</p> $ r\varepsilon_V > (p - q)\sigma_V$ $p > q$ $\varepsilon \geq \varepsilon^Z, \sigma \geq \sigma^Z$ <p>Phase line: institutional change</p> 	<p>II. Instability and coup: labor unions' resistance (profit squeeze and rise of the unemployed)</p> $ r\varepsilon_V < (p - q)\sigma_V$ $p > q$ $\varepsilon < \varepsilon^Z$ <p>Phase line: institutional change</p> 	<p>III. Equilibrium at $\sigma < \sigma^D$: a bridge too far (weak labor unions, growing social unrest)</p> $ r\varepsilon_V > (p - q)\sigma_V$ $p < q$ $\sigma < \sigma^D$ <p>Phase line: institutional change</p> 
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The different combinations of p, q and r that give rise to different paths of the political system are summarized in table 1.

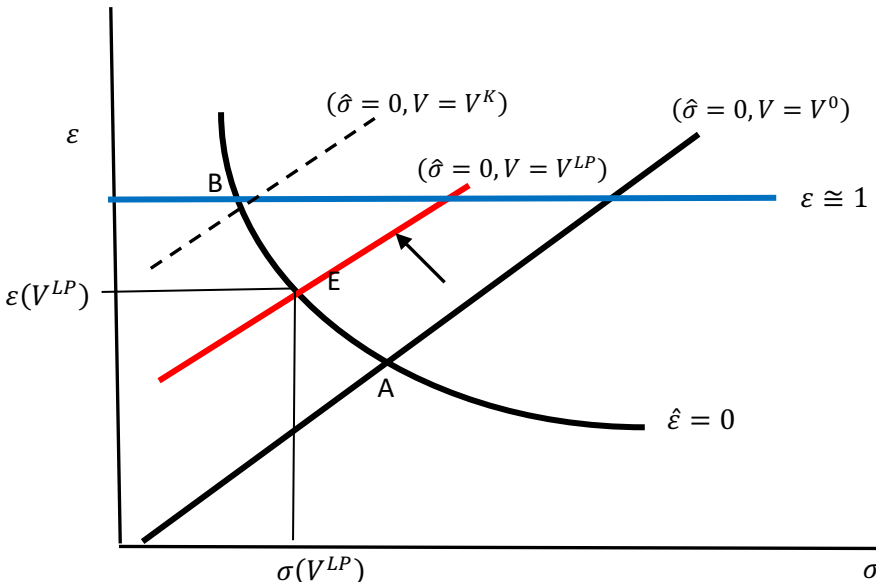
¹⁹ Recall that the focus of the paper is on right-wing coups aimed at weakening labor unions and social protection. This is equivalent to assuming that capitalists can more easily solve their collective action problem and challenge the political regime than workers, or that the costs of a coup for the capitalists is higher than the cost of a revolution for workers.

The first path (panel I) is consistent with the stability of democracy. The second path (panel II) does not lead to a stable equilibrium (because $|r\varepsilon_V| < (p - q)\sigma_V$): if the capitalist sector is unable to form a tacit or explicit coalition with the informal workers, social protection for formal workers would tend to expand without limits. The third path (panel III) entails a stable equilibrium which is inviable (a bridge too far) for it implies an unattainable low wage share ($p < q$). The two latter paths are associated with explosive conflicts leading to the downfall of democracy. We will analyze each of these cases, assuming that in the initial position of the system (which is the medium-run equilibrium $(\sigma^{MR}, \varepsilon^{MR})$ of the previous section, see point A in figure 3) the wage share is higher and the employment rate lower than in the long-run equilibrium. Other initial conditions are discussed later.

In panel I (democratic stability), unions' bargaining power is gradually weakened (V decreases from its initial value, in point A, where $V = V^0$), moving the formal employment rate up and the wage share down (as shown through successive leftward shifts of the $\hat{\sigma} = 0$ isocline in Figure 4). The fall in V comes, as mentioned, from the pressure of the disgruntled bourgeoisie and unsettled informal workers, who overcome the power of the unions in the political arena.²⁰

²⁰ This is, as mentioned, the political meaning of the stability condition $-r\varepsilon_V > (p - q)\sigma_V$.

scenario (panel I)



The political dynamics will lead to a change in government, probably from a center-left coalition (more identified with the interests of the labor unions) to a center-right coalition (more identified with the interests of the capitalists). Politics reshape the institutions of the labor market while keeping the democratic rules of the game. As V falls, political pressure from the capitalists recedes, and the economy settles at the equilibrium value V^{LP} (point E in figure 4). At this point the demand for change from informal workers and capitalists is exactly compensated for by the resistance of unions. The new institutional setting in equilibrium produces, at the same time, a rate of employment above the critical level of employment (ε^Z) and a wage share above the critical wage share acceptable by the formal workers in democracy σ^Z . This result in an equilibrium in the sense that none of the actors have forces to change the outcome, even though it is likely that all of them are not entirely satisfied with it.

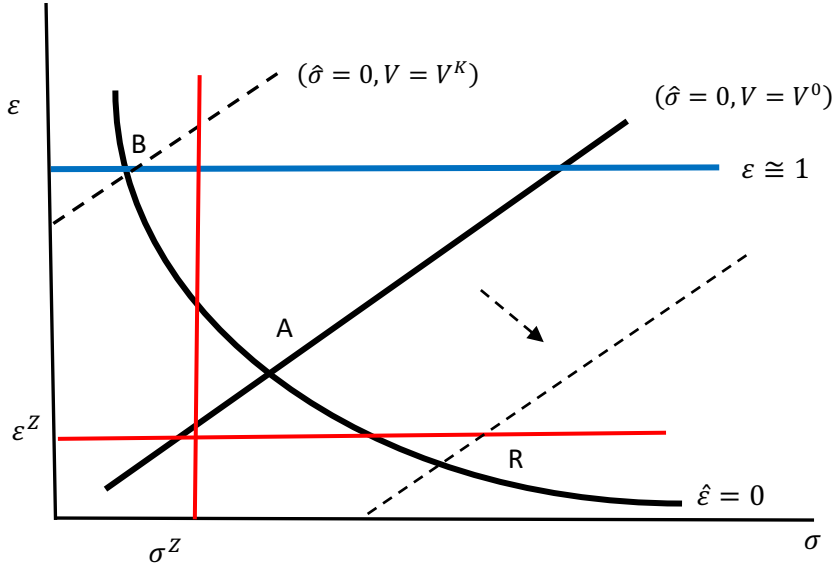
5. When politics go South: political instability and coups

Coalitions to stage a coup are formed in two cases, both of which reflect unbalanced political power. In these cases, the power of the three key actors (formal workers, informal workers and capitalists) fail to compensate each other in the context—as mentioned above—of a Balance-of-Payments constraint.

In the first case, the combined forces of informal workers and capitalists cannot prevent the bargaining power of formal labor to continuously grow ($|r\varepsilon_V| < (p - q)\sigma_V$) (panel II in table 1). A high wage share—for *given* technological capabilities and specialization—reduces price-competitiveness, while the external constraint depresses the animal spirit and investment. The profit rate remains low and informality high. From any initial value of $V > V^{LP}$, the distance between V and V^{LP} increases, the $\hat{\sigma} = 0$ isocline shifts downwards (as pointed by the dashed arrow in figure 5) and at some point in time it crosses point R, that marks the critical employment rate ε^Z that triggers the coup. If the antidemocratic coalition succeeds (in the shape of a crude military coup or the rise of a right-wing populist), and democracy is replaced by a dictatorship (or by a regime which retains the formal appearance of democracy, but which sweeps civil rights away), capitalists will have a free hand to redefine the institutions of the labor market according to their preferences. They will set pro-welfare institutions at their minimum V^K , point B in figures 3 and

5. This was, of course, the most common type of authoritarian reversal in Latin America in the 1960s and 70s from Brazil and Argentina to Chile and Uruguay²¹.

Figure 5: Equilibrium incompatible with democratic politics: unbalanced political power and explosive paths



The second case leading to a coup (panel III in table 1) is when V falls so much that the wage share in GDP falls below the critical level σ^Z that workers can tolerate. This is the opposite case to the one discussed above (in which unions hold great power). Panel III is associated with rather weak protective institutions. The political power of the capitalists exceeds the political power of unions ($q > p$) to such an extent that the political dynamics spontaneously leads to the institutional setting preferred by the capitalists (V^K , to point B in figure 3), beginning from the initial institutional setting $V = V^0$ in point A. However, the long-run equilibrium in B is inconsistent

²¹ Argentina (1976), Brazil (1964), Chile (1973) and Uruguay (1973) went through coups explicitly geared towards weakening the power of trade unions and remove protective institutions. A collapse in real wages was an immediate consequence of these coups. See Schvarzer (1998) for an account of the reconstruction of institutions with the aim of eliminating the influence of the unions under the Argentine dictatorship. Reducing the ability of civil society to tax and pursue social protection was also the aim of the 1988 Chilean constitution, whose replacement has been a central demand of social protests in this country since October 2019.

with political stability because it entails an unattainably low wage share in GDP. When the economy crosses the point in which σ falls below σ^Z , political democracy becomes inviable. Workers launch protests and strikes to revert what they regard as exorbitant inequalities. If political parties are dragged into the increasing polarization of society or loss control over the protests, and the government turns to a more violent suppression of the protests (enhancing the power of the military and the risks of spiraling violence), then the probability of having a revolution or a coup is high. Note that a low V implies low unemployment and high competitiveness, which strengthens the resolve of workers to claim a higher share of the economic prosperity. Capitalists will have incentives to stage a coup to restore discipline in the labor market, tame the political conflict, curb inflation and eventually impose V^K (and hence making $\sigma = \sigma^K < \sigma^Z$).

6. Opening space for positive-sum games: the role of structural change

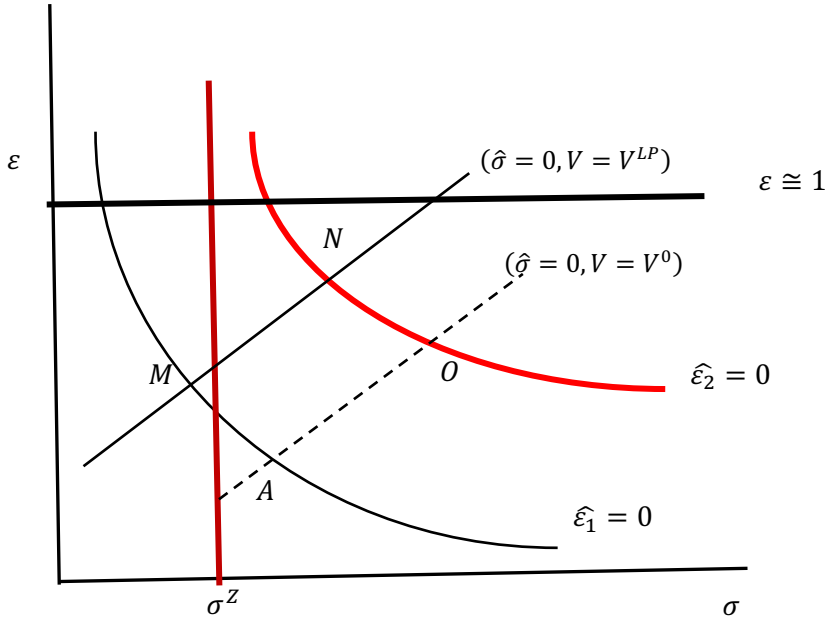
The model presented above suggests that the interests of formal and informal workers as well as those of trade unions and capitalists are in direct contradiction. *This contradiction originates in the external constraint, more specifically in the link between a high wage share and a low real exchange rate, low price competitiveness and a low level of formal employment (and profit rate) consistent with equilibrium in the current account.* Politics is necessarily contentious in this context and democracy unstable. There is a trade-off between formal employment, wage share and competitiveness that haunts the political economy of democracy in the global South.

How can this zero-sum game be overcome? By shifting the pattern of specialization: if competitiveness relies more on technology and skills (i.e. on structural competitiveness²²) than on a high RER, then the economy will be able to sustain a higher level of employment at any given level of the wage share and RER. Structural change contributes to turn a scenario conducive to a coup into a scenario of stable democracy. This happens because structural change makes more likely an equilibrium in which $\sigma > \sigma^Z$ and $\varepsilon > \varepsilon^Z$. A positive shock in the pattern of specialization shifts the $\hat{\varepsilon} = 0$ curve to the right. This is represented in figure 6: with the old production structure

²² The structuralist Fajnzylber (1990) called this kind of competitiveness as “authentic competitiveness”, highlighting its role in combining income distribution with external equilibrium. “Spurious” competitiveness, on the other hand, is based on lower wages and a worsening of income distribution.

($\hat{\varepsilon}_1 = 0$), the initial medium-run equilibrium is in point A , and the final long-run equilibrium is point M . In the transition to the long run equilibrium (as V declines towards $V = V^{LR}$), the economy crosses σ^Z , the critical level of the wage share which triggers either a coup or a revolution. However, if there is a change in structural competitiveness that shifts the $\hat{\varepsilon} = 0$ isocline from $\hat{\varepsilon}_1 = 0$ to $\hat{\varepsilon}_2 = 0$, the new medium-run equilibrium will be in point O and the long-run equilibrium in point N . The economy path towards N (where $V = V^{LR}$) no longer passes through σ^Z . Structural change allows institutional change to occur without threatening the political regime (institutions are modified within a stable democracy). Inversely, a negative external shock may shift the isocline $\hat{\varepsilon} = 0$ in the opposite direction. The transitional dynamics from N to M in figure 6 destabilizes the democratic regime. The historical evidence suggests that coups d'état tend to occur in the context of negative external shocks (see below).

Figure 6. Structural change and the consolidation of democracy



The corollary of the previous analysis is that structural change and the building of technological capabilities foster more stable democracies. *Moreover, stability can be reinforced by a positive feed-back from social protection to structural competitiveness*—a relationship historically evident, for example, in Nordic countries. The possibility of a positive feed-back from pro-welfare policies to structural change has been highlighted in the literature. Equality can help create an environment of trust and cooperation required for enhancing learning and technical change (Martínez Franzoni and Sánchez-Ancochea, 2016; Mkandawire, 2006). If social institutions contribute to the expansion of health and education (and the social wage more generally), labor productivity will also increase. In a pioneer work, Katzenstein (1978) argued that the provision of welfare and social security was the necessary counterpart to the ability of the small open economies of Europe to thrive in the international system. Bowles (2012), Stiglitz (2013) and ECLAC (2010, 2018, for the Latin American case) make the case for the productivity-enhancing effects of social protection and equality; Doner and Ross-Schneider (2016) highlight how inequality compromise the effectiveness of productivity-enhancing policies. In the words of Bowles²³:

²³ Bowles (2012), p. 162.

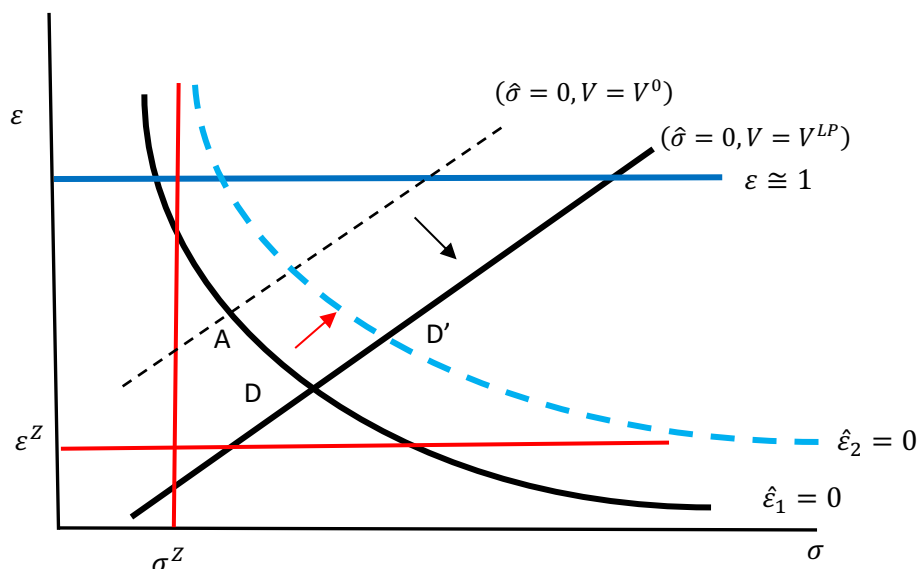
“A prominent reason to doubt equality pessimism (...) is the cost of economic disparity: the blunted incentives of the wage worker, the exclusion of the would-be entrepreneur from credit markets, the impediments to trust and mutual concern essential to finding co-operative solutions to workplace, neighborhood, and global problems, and the mounting cost of containing the conflicts endemic to a society of haves and have-nots”.

By opening space for a positive-sum game, structural change favors cooperation over conflict. The literature points out the existence of a positive association between a more complex production structure and equality (Hartman et al, 2017), and between equality and democracy (Boix, 2013). There are mutual reinforcements between structural change and democracy, as highlighted by Ian Shapiro: *“the diversification of the economy matters more than inequality, and perhaps even as much as per capita income [for the stability of democracy]. What counts is the extent to which everyone’s eggs are in the same basket”* (Dahl and Shapiro, 2015, p. 198). One could easily interpret many European experiences under social-democracy in this light: tripartite alliances between workers, capitalists and the state sustained dynamic structural change and contributed to a deepening of democracy (Huber and Stephens, 2001). The pressure of the capitalists to erode V for the sake of price-competitiveness will be potentially tempered if there are negative collateral effects on productivity and structural competitiveness. This offers a different perspective for the formulation of economic policy respecting growth and distribution in economies with external vulnerability: diversification, and industrial policy are strategic complements to redistributive policies. There is a critical supply-side effect stemming from institutions that foster equality.

This supply-side impact of social protection is illustrated in figure 7. A strengthening of the welfare system and thus an increase in the social wage shifts the equilibrium from point A to point D by moving the labor market equilibrium to the right, from $\hat{\sigma} = 0, V = V^0$ to $\hat{\sigma} = 0, V = V^{LP}$. The new equilibrium shows a lower rate of employment but a higher wage share. The process does not stop at this point. The expansion of social policies encourages building new capabilities in the economy (for instance, through a more educated population) and shifts the external equilibrium isocline from $\hat{\epsilon}_1$ to $\hat{\epsilon}_2$. The new equilibrium in D’ entails a higher wage share and a rate of employment which is lower than in point A, but higher than in point D. Both forces help stabilize

the political system. The interaction between institutional change and structural change places the economy more firmly within the stability area to the right of σ^Z and above ε^Z .

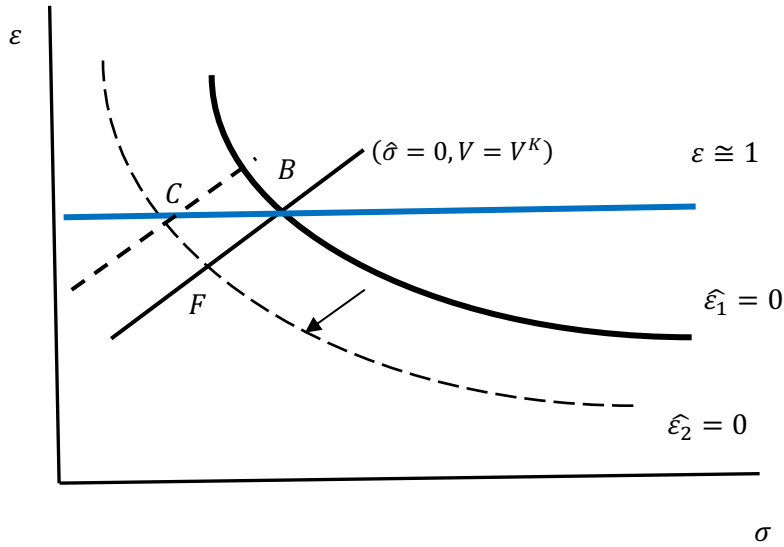
Figure 7. Institutional change impacts of structural change: the reshaping social of and technological capabilities



The positive shock in exports growth does not always come from structural transformation. It may also come an exogenous change in global demand for the commodities produced by the developing country (good luck in the “commodity lottery”) as evident in many parts of Africa and Latin America during the 2000s. But these demand shocks are in general short lived; only the construction of indigenous capabilities and economic diversification give rise to a new sustainable long-run equilibrium, with higher formal employment and better income distribution. Otherwise, volatility and political conflict will come back when commodity prices go down again, exactly the problems some Latin American countries are experiencing at the moment.

An external shock may also trigger a process of democratization. Assume that the initial condition is a dictatorship, with the equilibrium represented in in point *B*. Assume now that there is a negative shock in external demand that moves the $\hat{\varepsilon} = 0$ to the left (to the dashed line $\hat{\varepsilon}_2 = 0$). The medium-run equilibrium moves to point *F* after a period or fall *in both* the wage share and in the employment rate.

Figure 8. Democratization under an external negative shock



However, point F is not the end of the economic transition after the negative shock. In point F the rate of capital utilization is below what maximizes the profit rate. With a free hand to choose the institutional setting, capitalists have an incentive to further reduce social protection (they thus transfer to the workers the additional strain posed by the external crisis). The labor market slowly reanimates as price-competitiveness increases, but at the cost of a new round of reductions in the wage share. The period of falling employment and falling wage sows the seeds for a new wave a social unrest, leading to a regime change if the dictatorship is no longer able to suppress workers' demands.

7. Conclusion

In this paper we have included political conflict and endogenous institutional change in a structuralist model. In our structuralist model with endogenous institutions (SMI), the conflict between classes and interests are especially acute due to the existence of a large informal sector and poor structural competitiveness—reflected in poor diversification of the production structure—, two common characteristics of developing countries. The intensity of the conflict in some cases can be contained within the limits of a democratic regime; in other cases, the conflict

is explosive leading to a change of the political regime. We argue that the model is useful to understand the forces behind democratic instability, democratic collapse, and democratic recovery in developing economies, particularly in Latin America. Yet it should be seen as a first attempt to formally model institutional change within the structuralist tradition; we have explored only a small number of potential scenarios, alliances and outcomes.

Democratic stability requires that formal workers have enough political power—based on their links to political parties, their organization in trade unions and the electoral power of numbers—to check the economic and political power of the capitalists. At the same time, the threat of growing informality, inflation and unemployment restrain organized labor from crossing critical values of the wage share and unemployment that could trigger a coup. A transition from democracy to dictatorship can result from two different processes. On the one hand, when formal workers are so strong that the wage share increases beyond what is acceptable by the capitalists, leading to an appreciation of the exchange rate and a fall in exports, employment, and growth. The capitalists, taking advantage from the unrest of the informal and unemployed, will promote a coup to restore the profit rate and capital accumulation. Second, democratic collapse can arise from an excessively low wage share in GDP in the context of a high employment rate: an escalation in the number and intensity of demonstrations and strikes may either produce a revolutionary situation (not considered in this paper) or prompt a military intervention.

The trade-off between wages, social protection and informality is rooted in the external constraint, which is a barrier to the emergence of a durable social democratic consensus based on a win-win interaction between workers and capitalists, predicated on the expansion of employment and aggregate demand. As far as the rise in the RER leads to a loss of international competitiveness, the external constraint will hinder the expansion of aggregate demand. The policy implication of the model is that economic diversification and the building of technological capabilities should be part and parcel of a strategy for consolidating democracy and income distribution. Higher structural competitiveness raises the employment rate associated with each level of the wage share—and as a result expands the space for class compromise in democracy. A positive force in the efforts of combining democracy with technological competitiveness is that *an advanced welfare system can produce productivity-enhancing supply-side effects*. Learning and cooperation are higher in more inclusive societies, allowing for the emergence of virtuous circles in which equality and technical change reinforce each other. It is therefore critical for the stability

of a democratic path to development to explore the complementarities between social protection, and technological and industrial policies.

The model may be extended or modified in many different directions to cover other possible scenarios. We will mention two that are particularly important, and which we did not discuss in the paper. One is when structural change is pushed forth by an authoritarian developmentalist state. This is what happened in countries like Korea and other East Asian countries in the four decades after World War Second, and more recently China. The model gives no hints about why some countries adopt policies in favor of structural change and others reinforce patterns based on natural resources and low wages. However, it may provide a suggestion about the forces that encourage democratization in this kind of states. The rising bargaining power of workers and the expansion of the negotiation space between capital and labor made possible by structural change may have been a contributing factor to democratization in South Korea. However, since our focus has been on the Latin American political and economic trajectory, where advances towards structural competitiveness has been weak or (as in the case of Brazil and Mexico) interrupted after the debt crisis of the early eighties, this problem was not addressed in the paper. Another important extension (closely related to the previous one) that may be considered in future works is the role of rentist actors in the economic system—either in the financial sector or in sectors intensive in natural resources—and the alliances they could make with other capitalist groups to reinforce the existing pattern of specialization.

Mathematical Appendix: The Kaleckian-Structuralist model in the short and medium-run

This mathematical appendix presents the Kaleckian-structuralist economic model which sustains the political dynamics discussed in the main text of the paper.

A.I. The short-run

The production function uses capital, labor and imported intermediate inputs in fixed proportions. Formally:

$$A.1 \quad X = \min(vuK, aL, bM^I), u \equiv \frac{X}{vK}$$

In equation (A.1) X is total output, v is the productivity of capital, u is the rate of capital utilization (defined as the ratio between effective output X and potential output vK , where K is the total stock of capital), a is labor productivity, L is employed workers, b is the productivity of imported inputs and M^I total imported inputs. In equilibrium, the following equality holds:

$$A.2 \quad X = uvK = aL = bM^I$$

The real exchange rate provides a key link between the distributive conflict and the external constraint. To make the link explicit, consider first how prices are set under imperfect competition:

$$A.3 \quad P = z \left(\frac{W}{a} + \frac{P^*E}{b} \right)$$

Equation (A.3) states that prices are formed by applying a mark-up factor $z > 1$ on the variable costs of the firm. Such costs comprise: (i) unitary wage costs, W/a , where W is the nominal wage and $a = X/L$ is labor productivity; (ii) unitary cost of imported inputs in the production process, P^*E/b , where P^* is the price of imported inputs in units of the foreign currency, E is the nominal exchange rate (defined as the price of the foreign currency in units of the domestic currency), and $b = X/M^I$ is the productivity of imported inputs.

The level of z is a function of the “degree of monopoly” in the goods market. The degree of monopoly, in turn, is a function of barriers to entry, which are institutional and technological. It should be expected to be very high in protected markets (i.e. if the good is non-tradable or the country imposes tariffs and / or non-tariff barriers on imports), in sectors with significant dynamic

and static economies of scale, or in sectors with persistent asymmetries in technological capabilities.

The wage share (σ^T) in total output is:

$$\text{A.4} \quad \sigma^T = \frac{WL}{PX}$$

Note that the price equation A.3 can be written as: $P = [z(Wb + P^*Ea)/ab]$. Using this result and $a = X/L$ in equation (A.4) gives the following result for the wage share:

$$\text{A.5} \quad \sigma^T = \frac{Wb}{z(Wb + P^*Ea)}$$

It is straightforward that the wage share in total output increases *ceteris paribus* with a rise in nominal wages and the productivity of imported inputs, while decreases with the increase in the mark-up factor, foreign prices, the nominal exchange rate and labor productivity. The rise in nominal wages raises real wages because firms do not transfer all the increase in wages to prices, but just a fraction which depends on the share of labor costs in total costs. Equation (A.5) also shows that nominal devaluations (E), or a rise in the price of imported inputs in the international markets (P^*), diminishes the wage share.

The real exchange rate is defined as:

$$\text{A.6} \quad q = \frac{P^*E}{P}$$

A higher q increases the firms' international price competitiveness. Inversely, a rise in domestic prices P means *ceteris paribus* a real appreciation of the domestic currency (a fall in q which reduces international competitiveness), as foreign goods become more expensive in terms of the domestic good.

More generally, using (A.3) in (A.6):

$$\text{A.7} \quad q = \frac{P^*Eab}{z(Wb + P^*Ea)}$$

Per equations (A.5) and (A.7), a rise in P^* and E reduces the wage share in total output and increases price-competitiveness. A rise in price competitiveness (higher q) is only compatible with a rise in the wage share when it comes out of a fall in z (Blecker and Setterfield, 2019, pp. 190-197) or a rise in b .

The profit share in total output is: $\pi^T = 1 - \sigma^T - q/b$. Plugging (A.5) and (A.6) in this result, gives $\pi^T = \frac{z-1}{z}$ ²⁴, which will remain constant as long as the firms' monopoly power (that determines z) remains constant. The nominal GDP of the economy, PY , equals $PY = PX - P^*E/b$, and hence the real GDP is $Y = X(1 - q/b)$. This result can be used to compute the profit share in GDP:

$$\text{A.8} \quad \pi = \frac{\pi^T}{1-q/b} \text{ is:}$$

And the wage share in GDP is:

$$\text{A.9} \quad \sigma = 1 - \frac{\pi^T}{1-q/b}$$

It is straightforward that (given z and b) σ and q moves in opposite directions²⁵. Since both σ and q are negative functions of z , a fall in z improves at the same time price competitiveness and income distribution. In the same vein, since σ and q are positive functions of b , a rise in b favors at the same time price competitiveness and income distribution.

As it is usual in Kaleckian models, we assume that workers do not save and capitalists do not consume. Hence the savings share in GDP (s) equals the profit share in GDP, $s = \pi = 1 - \sigma$.

The profit rate is:

$$\text{A.10} \quad r = \frac{PY - WL}{PK} = (\pi^T)vu$$

In equation (A.10) we used (A.2), more specifically $X = uvK$. In the short run, only the rate of capital utilization varies (prices, wages and productivity are all given) to satisfy the equilibrium conditions in the goods market:

$$\text{A.11} \quad \pi^T vu = g(k, u) + x^n, \text{ with } g_u > 0, g_k > 0$$

²⁴ In effect, we have $\pi^T = 1 - \underbrace{\frac{Wb}{z(Wb + P^*Ea)}}_{\sigma^T} - \underbrace{\frac{P^*Eab}{z(Wb + P^*Ea)b}}_{q/b} = \frac{(Wb + P^*Ea)(z-1)}{(Wb + P^*Ea)z} = \frac{(z-1)}{z}$

²⁵ It can be easily checked that $\frac{\partial \sigma}{\partial q} = \partial \left[\frac{1 - (q/b) - \pi^T}{1 - q/b} \right] / \partial q = \frac{-\pi^T(1/b)}{(1 - q/b)^2} < 0$

Equation (A.11, shows that savings per unit of capital $\pi^T uv$ equal the investment rate ($g = I/K$) plus the trade balance per unit of capital (x^n). We assume a simple Kaleckian investment function $g = g(k, u)$, in which the investment rate depends on the rate of capital utilization (u) and the capitalists' "animal spirit" (k). The latter variable, in turn, is a function of the expectations of the capitalists about future growth..

Net exports per unit of capital (x^n) depends on the real exchange rate, the rate of capital utilization at home (u , which shapes domestic demand) and the rate of capital utilization abroad (which drives external demand for exports):

$$\text{A.12} \quad x^n = x(\sigma, u, h, u^R), \text{ with } x_\sigma < 0, x_u < 0, x_h > 0, x_{u^R} > 0$$

In equation (A.12) we used equation (A.9) that allows writing the wage share as a negative function of the real exchange rate when the wage share increases due to a rise in nominal wages or the nominal exchange rates (i.e. z, a and b are constant). As the wage share increases, the real exchange falls, and net exports follow suit. In addition, exports and imports depend (respectively) on foreign and domestic aggregate demand. It is assumed that there are no differences in the import propensity of capitalists and workers. Exports increase with the rate of capital utilization in the rest of the world (u^R), while imports increase with rate of capital utilization (u) of the home economy.

Last but not least, net exports increase along with "structural competitiveness" (h), which is the type of competitiveness that does not depend on prices. Structural competitiveness depends on technological capabilities, product differentiation and technological externalities giving rise to competitive advantages to those firms that are closer to the international technological frontier.

A.II. Conflicting claims and external equilibrium in the medium run

The labor market is the locus in which a central part of the bargaining process over income shares occurs. Workers aim to increase their share in GDP, and they set a target σ^D . Such a target cannot ignore the state of labor demand: the higher the employment rate $\varepsilon = L/L^S$ (where L^S is total labor supply), the higher the desired wage share σ^D the workers demand. The desired wage share also depends on the institutions that shape the bargaining power of labor: the higher is V , the higher the workers' bargaining power.

Assume that the supply of workers L^S is constant and hence $\hat{\varepsilon} = \hat{L}$. In addition, assume that in the short run labor productivity is constant, while in the medium run responds to a Kaldorian technical change function by which labor productivity increases *pari passu* with capital accumulation, and hence $\hat{a} = \hat{K}$. Since from equation (1) we have $\hat{u} + \hat{K} = \hat{a} + \hat{L} = \hat{a} + \hat{\varepsilon} + \hat{L}^S$, and $\hat{L}^S = 0$, in the medium run $\hat{u} = \hat{\varepsilon}$. Note also that $u = \varphi\varepsilon$, where $\varphi \equiv (aL/vK) > 0$ is constant²⁶.

The law of motion of the wage share in GDP is given by:

$$A.13 \quad \hat{\sigma} = \rho(\sigma^D(\varepsilon, V) - \sigma)$$

When the desired wage share is higher than the effective wage share, workers raise wage demands. As wages rise, the wage share increases until the desired and effective wage shares converge. In this process wages, wage shares and prices move upwards, inflation accelerates and the real exchange rate falls, compromising international price competitiveness.

The adjustment process does not end with the increase in the wage share in GDP. This just represents equilibrium in the labor market. The economy cannot sustain a level of employment higher than what is compatible with equilibrium in the external sector. We will assume that the expectations of the capitalists about future growth (the animal spirit k of the investment function) responds to the current account balance. If there is a surplus, the capitalists will be optimistic and capital accumulation accelerates; if there is a deficit, capitalists will pull down investments as they expect troubled times in the future. In the words of Joan Robinson (1967):

“the most important benefit of a surplus on income account, which affects the whole economy, is that, provided that there are energetic enterprises and thrifty capitalist to take advantage of it, it permits home investments to go full steam while a deficit country is nervously pulling on the brake for fear of excessive imports”.

In other words, investment and domestic aggregate demand fall when the economy experiences a trade deficit. Formally, we can express this idea saying that the increase in

²⁶ The rate of profit is $(\pi^T)uv = (\pi^T)\varphi\varepsilon$. Since φ is constant and π^T only depends on monopoly power z , for a given z the maximum rate of profit in this economy will be attained with approximately full employment, i.e. $\varepsilon \cong 1$. This implies that the objective of the capitalists to maximize the profit share in GDP in point B in figures 3, 4 and 5 in the main text, also leads to maximizing the rate of profit.

investment, output and employment growth will be a function of net exports in accordance with the following motion equation:

$$\text{A.14} \quad \dot{\varepsilon} = \mu[x^n(\sigma, \varepsilon, h)], x^n_\sigma < 0, x^n_\varepsilon < 0, x^n_h > 0$$

If the wage share increases and the real exchange rate falls, then the economy will become less competitive and experience a worsening in current account (hence $x^n_\sigma < 0$); if the rate of employment and hence domestic demand increases, imports will increase and the current account deteriorates (hence $x^n_\varepsilon < 0$). The employment rate will be stable when $x^n = 0$ (recall the model assumes no debt in the medium run).

Structural competitiveness h is constant in the medium run but change in the long run. The drivers of this change are the industrial and technological policies. In addition, h can also be affected by improvements in income distribution through its impact on learning and skills of the labor force, social cohesion and cooperation within and across firms (as previously discussed). When this is the case, the loss of price-competitiveness associated with a rise in protective institutions will be partially compensated by higher structural competitiveness.

In equilibrium the desired and the observed wage share in GDP are equal, which implies that workers have incentives not to demand higher wages: they consider that the prevailing wage share reflects the bargaining power they effectively have in the labor market, given the institutional setting and the level of employment. In turn, the expectations of the capitalists are perfectly stable because the current account is in equilibrium and they have no reasons to expect turbulences in the future. This produces a stable equilibrium at ε^{MR} and σ^{MR} discussed in figure 1.

A.III. The political behavior of informal workers: nonlinear response to the employment rate and total (formal and informal) income

Rewrite equation (1) now assuming that informal workers take sides with formal workers at low levels of employment (because this implies a higher probability of becoming formal workers) but favor the capitalists' stance in politics when unemployment is high. Formally:

$$\text{A.15} \quad \dot{V} = (p - q)(\sigma^{MR}(V) - \sigma^K) + r(\varepsilon^{MR}(V) - f)\varepsilon^{MR}$$

Informal workers will help formal workers to strengthen their bargaining power when $\varepsilon^{MR}(V) > f$. The stability condition requires:

$$A.16 \quad \frac{\partial \dot{V}}{\partial V} = r\varepsilon_V(2\varepsilon^{MR} - f) + (p - q)\sigma_V < 0$$

When the level of employment is low, $2\varepsilon^{MR}(V) - f$ will be negative and this challenges the drive towards stronger labor protection. For employment levels higher than f , on the other hand, informal workers bet on the higher probability of getting a job in the formal labor market. They will then be willing to join the “ins” in their struggle for the rights of formal workers.

Since $r\varepsilon_V < 0$ and $(p - q)\sigma_V > 0$, a stable solution requires both $\varepsilon^{MR} > (f/2)$ and that the absolute value $|r\varepsilon_V(2\varepsilon^{MR} - f)| > (p - q)\sigma_V$. The stable solution is necessarily the one in which the employment rate has already surpassed the critical value $f/2$. This is the case assumed in equations (1) - (3) in the main text.

The discussion in the main text excludes the share of the informal sector in total income because it represents a subsistence residual whose dynamics depends entirely on that of the formal sector. Total income (considering both the formal and informal sectors) will be:

$$A.17 \quad Y^T = Y^{Inf} + Y = \underbrace{\gamma(1 - \varepsilon)}_{Y^{Inf}} + \underbrace{a\varepsilon(1 - q/b)}_Y,$$

Y^{Inf} is the income accrued to the informal workers and the GDP of the formal sector is Y . Each informal worker produces and consumes γ units of the domestic good using only labor which renders Y^{Inf} , while $a\varepsilon(1 - q/b) = uvK(1 - q/b)$ is the real GDP produced in the formal sector in accordance with the Leontieff production function defined in equation (A.1).

The real wage in the subsistence sector is a fixed proportion ($\omega < 1$) of the real wage in the formal sector, i.e. $\gamma = \omega(W/P)$. The average wage (including formal and informal workers) in this economy is therefore:

$$A.18 \quad w^A = \omega \left(\frac{W}{P} \right) (1 - \varepsilon) + \varepsilon \left(\frac{W}{P} \right) = \left(\frac{W}{P} \right) [\omega(1 - \varepsilon) + \varepsilon]$$

In equation A.18 (W/P) is the real wage in the formal sector. Each informal worker produces and consumes γ units of the domestic good; each formal worker consumes the real wage W/P of domestic goods. Equation A.18 can be rewritten as:

$$\text{A.19} \quad w^A = \left[\frac{\omega(1-\varepsilon)+\varepsilon}{\varepsilon} \right] \left(\frac{W\varepsilon X}{PX} \right) = \left[\frac{\omega(1-\varepsilon)+\varepsilon}{\varepsilon} \right] \sigma^T X$$

In equation A.19 we used $(W\varepsilon/PX) = \sigma^T$. Now, recalling that $X = a\varepsilon$, $\sigma^T = 1 - (q/b) - \pi^T$ and $\pi^T = \frac{z-1}{z}$, then using this result in A.19 gives:

$$\text{A.20} \quad w^A = \left[\frac{\omega(1-\varepsilon)+\varepsilon}{\varepsilon} \right] a\varepsilon(1 - (q/b) - \pi^T) = [\omega(1 - \varepsilon) + \varepsilon]a \left(1 - (q/b) - \frac{z-1}{z} \right)$$

Since ε and q are negative functions of social protection V , the average real wage is a nonlinear function of V . It would be possible to find an optimum V that maximizes the average real wage considering both formal and informal workers. This is not a feasible policy, however, since there is no benevolent dictator to set V at any level. Instead, V will vary along with the intensity of political conflict. Formal employment does the heavy lifting in defining w^A through two channels: by affecting the intensity of wage demands of formal workers (which falls when informality increases) in the medium run (i.e., for given institutions); and by affecting the pressure for downgrading social protection (the higher the informality, the higher the regressive pressure on labor rights) in the long run (changing institutions).

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