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Varieties of top incomes: Power, regulation and growth models

Abstract

The recent shift within Comparative Political Economy, towards analysing the distributional implications of growth models through macroeconomic explanations, contrasts with the traditional focus on institutions and public policies. This paper examines 22 OECD cases using configurational methods (fsQCA) to analyse the necessary and the sufficient conditions for high and low income inequality. Results show that export-led growth only leads to high top 1% shares if employment protection legislations are weak. Similarly, the combination of consumption-led growth with financialization is not sufficient for elites to extract high shares, but rather is the simultaneous absence of unions' associational power and labour legislation's institutional power. Additionally, beyond these key power resources, and despite relatively low financialization, German and Spanish elites extract high shares through diminishing progressivity amid large-scale privatisations. On the other hand, most countries achieve low inequality through the combined regulation of labour and product markets. These findings reveal that agency over market regulations and workers' power remain at the centre of inequality dynamics, particularly at the top.

SER keywords: top incomes, income distribution, growth regimes, configurational methods.

JEL classification: D31 Personal Income, Wealth, and Their Distributions, J5 Labour-Management Relations, Trade Unions, and Collective Bargaining, P5 Comparative Economic Systems

1 Introduction

What was for decades absent from mainstream economic theory is now at the forefront of both academic and public debates. The increase in income inequality across the globe has been so broad in the last decades that the United Nations has defined it as a challenge of our time. There is an intrinsic sentiment that the current global economic system is unfair, which intensified after the Great Recession, with vast manifestations of disgruntlement from movements like Occupy Wall Street and the proliferation of populism.

Although income inequality increased in almost all developed countries since 1980, neoliberal capitalism has had different consequences for top income inequality across nations (Figure 1). In 2020, the top one percent shares ranged from more than 18% of pre-tax national income in the US to less than 7% in the Netherlands. In 1980, very few national elites extracted more than 11% and the figure was below 6% in several countries. Furthermore, the upsurge of top shares occurred in the twentieth century in most societies, but this process was partially reversed in some countries (e.g. Scandinavian) while other national elites have seen the sharpest rise in their shares in this century (e.g. Germany and Spain). How can we explain such diversity of top income shares among advanced political economies? In which institutional frameworks do elites thrive and what are the conditions that promote greater equality?

This paper contributes to the debate on the substantive explanations for these *varieties of top incomes* ([Hager, 2020](#)) within the OECD during neoliberal capitalism. It finds that the distributional implications of growth models are not straightforward and need to incorporate regulatory institutions and power resources. I argue that it is the institutional power of workers at the society level

(Schmalz, Ludwig, and Webster, 2018) that determines inequality in export-led regimes and not the price sensitivity of exports as proposed by Baccaro and Pontusson (2016). The condition of having a consumption-led growth model appears to be more irrelevant. Regardless of the growth model, elites thrive in all Liberal Market Economies (LMEs) due to the workers' lack of both key power resources. The simultaneous absence of unions' associational power and labour legislation's institutional power also explains high inequality in some Coordinated Market Economies (CMEs). On the other hand, most countries achieve low inequality through the combined regulation of labour and product markets. In short, the overarching argument is that top incomes are predominantly explained by market regulation and power relations, rather than by growth models and market forces, such as financialization or skill-biased technological change.

The remainder of the paper is organized as follows. It begins by briefly summarizing the two main theories for the widespread rise in income inequality under neoliberal capitalism. Section 2 reviews three approaches of Comparative Political Economy (CPE) and highlights their hypotheses for the cross-national diversity of inequality levels, while section 3 synthesizes the different features of each theoretical approach and discusses their interconnections. The former also provides an empirical review with the most relevant determinants of top 1% shares found in econometric studies. The paper complements this literature by analysing the distinct *combinations* of those determinants, rather than their average linear effects. To this end, and to support the main argument, I employ configurational methods which are contrasted with statistical strategies in section 4, where a brief explanation of the operationalization of the method can also be found. The construction of each outcome and condition are described in detail in the online appendices. Results for the necessary and the sufficient conditions for

top income inequality are analysed in section 5. Section 6 discusses the paper's findings and contributions to the literature. Finally, section 7 concludes by summarizing the paper, discussing its limitations and suggesting avenues for further research.

[Figure 1 GOES HERE]

2 Explanations for the varieties of top incomes

There are several forces favouring the general rise in inequality since 1980. This paper highlights two of the most prominent theories, which are reviewed in greater detail in Appendix 2. The market-based arguments of a skill-biased technological change ([Goldin and Katz, 2009](#); [Tinbergen, 1975](#)) and the 'superstar theory' ([Rosen, 1981](#)) provide convincing reasons for the rise in wage inequality in the context of ever larger markets and multinationals. However, top incomes are determined not only by labour earnings, but also, and quite substantially, by capital and wealth dynamics ([Alvaredo, Chancel, Piketty, Saez, and Zucman, 2017](#)). Piketty's explanation is based precisely on the different speeds that capitalism entails for capital versus labour income. The author argues that capitalism has a systemic tendency to widen the income gap between the rich and the rest because returns on capital are higher than economic growth ($r > g$) ([Piketty and Goldhammer, 2014](#)). Both of these theories help us understand the overall upward trend in top

incomes. Nonetheless, they do not account for the degree of cross-national variation present in Figure 1 ([Hager, 2020](#)). This means that national institutions, power relations and policies condition the effects of the general drivers of inequality.

2.1 Power resources

Power Resource Theory (PRT) was originally developed to explain the evolution and differences in welfare states across advanced capitalist democracies ([Stephens, 1979](#); [Korpi, 1983](#); [Esping-Andersen, 1990](#)). In capitalism, wealth ownership constitutes a unique power resource since it comprises both economic and political powers and is concentrated at the top; workers, on the other hand, only possess labour power (in Marxist terms) which they can sell/rent on the market. However, democracy allows for the free association and organization of the subordinate class ([Bradley et al., 2003](#)). In sum, these original authors showed that welfare states are more generous and sophisticated where there is a coalition between social democratic parties and trade unions.

Later research uses PRT to directly explain differences in income inequality. This is because it provides a framework where workers (the 99%) can counterbalance their disadvantageous position against capitalists (the top 1%) by collectively and strategically mobilizing their power resources. The basic argument is that labour can effectively defend its interests through unions, which directly reduce market inequality, and leftist parties, which can raise the redistributive capacity of the State ([Huber, Huo, and Stephens, 2019](#); [Jacobs and Dirlam, 2016](#); [Flaherty, 2015](#); [Volscho and Kelly, 2012](#); [Kelly, 2005](#); [Bradley et al., 2003](#)). Following this premise, most of the empirical literature focuses on union membership and left-wing party seats, finding robust evidence for the theory (see review by [Hager, 2020](#)). However,

according to [Schmalz et al. \(2018\)](#), these are only two sets of actors that operationalize one type of resource: *associational power*. In addition to these, labour strength depends crucially on *institutional power* in the form of collective bargaining autonomy as well as labour market legislation, at the industry and society levels, respectively ([Schmalz et al., 2018](#)).

Trade union's associational power

Unions restrict or even reduce top shares through three channels: their capacity to organize and mobilize workers' interests, by constraining excessive rent extraction by management, and through their direct involvement in the political arena ([Hacker and Pierson, 2010](#); [Huber et al., 2019](#)). Indeed, union density is the most robust and substantial equalizing force found in this econometric literature ([Hager, 2020](#)), even if their influence appears to have weakened in the last decades.¹

The coordination of wage bargaining is also found to significantly reduce top shares ([Huber et al., 2019](#)), and is arguably the most important driver of wage equality ([Wallerstein, 1999](#)). On the other hand, [Behringer and van Treeck \(2021\)](#) found that coordination did not influence top shares, despite reducing Gini indexes. I argue that these conflicting results are perhaps explained by non-linear relationships. When compared with coordination at the industry/sector-level, national-level bargaining has no effect, but top shares are significantly higher where bargaining takes place at the firm-level ([Scheve and Stasavage, 2009](#)).

It has also been argued that although wage coordination might not directly influence top shares, it reduces the disequalizing effect of many drivers of top incomes ([Behringer and van Treeck, 2021](#)). Additionally, these authors find evidence supporting the distinction between associational and institutional powers. Where

coordination is strong, falling union density is not correlated with higher top shares despite being correlated with lower wage shares.

Labour legislation's institutional power

In addition to deunionization, labour market flexibilization, which is one of the main characteristics of neoliberal reforms, can be viewed as another source of diminishing labour power ([Dünhaupt, 2014](#)). The widespread deregulation of permanent contracts is now considered one of the main culprits for declining wage shares in almost every sector ([Ciminelli et al., 2022](#); [Dimova, 2019](#)). It is also associated with higher wage inequality ([Vlandas, 2018](#); [OECD, 2011](#)) and more unequal personal income distributions ([Checchi and García-Peñalosa, 2008](#); [Calderón and Chong, 2009](#); [Dosi, Pereira, Roventini, and Virgillito, 2018](#)).

However, the effect of employment protection legislation (EPL) on top incomes has seldom been tested. Two IMF reports show that labour market liberalization robustly increases top 10% shares ([Dabla-Norris et al., 2015](#); [Jaumotte and Osorio, 2015](#)). The latter of these report finds that this effect is driven by the deregulation of temporary employment, a result that is confirmed by the [OECD \(2011\)](#) using the D9/D1 earnings ratio. Therefore, and given that the share of atypical contracts has been rising in advanced economies, it is important to take into account the regulation of both permanent and fixed-term contracts. Recently, [Hope and Martelli \(2019\)](#) showed that EPL together with wage bargaining coordination and union coverage significantly mitigate the disequalizing effects of the knowledge economy, also at the top 1%.

The two key power resources of workers

This paper builds on PRT and incorporates these empirical findings by assessing the two main power resources of workers, namely union strength and coordination, as well as labour market legislation for both types of contracts. These two resources embody the associational power of unions and also the institutional power of collective bargaining and labour market legislation, conceptualized by [Schmalz et al. \(2018\)](#). Union strength needs to be assessed not only in terms of coverage but also membership, while the centralization of collective bargaining determines their capacity to effectively improve workers' power at the societal level in a coordinated manner.

Labour market legislation is the second fundamental source of workers' power since it operates at the societal level regardless of the power of unions. Moreover, I agree with the argument made by [Huber et al. \(2019\)](#) that the complementarities stressed by Varieties of Capitalism (VoC) may be expressed in the cooperation between employees and employers at the input/production level (e.g. in skill training), but the PRT's emphasis on class conflict always prevails at the output/distribution level (dividing the firm's surplus) ([Huber et al., 2019](#), p. 249). Thus, according to the literature, it is expected that:

- **H1: It is necessary for workers to have at least one of the key power resources to achieve low top income inequality.**
- **H2: When workers lack both key power resources, it leads to high top income inequality.**

2.2 Public policy and regulation

Public policy is another important dimension explaining the variegated nature of top incomes ([Hager, 2020](#)). Government policy, or parliamentary legislation, has wide-ranging distributional implications because it serves as an umbrella term for a myriad of different interventions – from monetary policy to regulations on labour, product and financial markets, as well as the tax-benefit system. This paper addresses all of the latter with the exception of monetary policy.

Progressive personal income taxation

One of main findings of the Top Incomes (TI) literature is that the rise in top shares has been much more pronounced in English-speaking countries than in Continental Europe, and the evolution of Southern European countries is associated with the latter ([Atkinson et al., 2011](#), p. 572). Most of this literature focuses on the effects of taxation, particularly on top marginal tax rates, to explain these differences. During post-war regulated capitalism, these rates stood above 90% in both the US and the UK ([Piketty and Goldhammer, 2014](#)). Between 1970s and mid-2000s, rich countries brought this rate down from 70% to 42%, and this significantly increased pre-tax shares ([Alvaredo et al., 2016](#)).²

Beyond the direct redistributive effects of progressive taxation on the distribution of post-tax disposable income, this literature argues that tax rates influence pre-tax shares because they discourage rent extraction and excessive compensation at the top ([Piketty, 2020](#); [Scheve and Stasavage, 2016](#)). Analysing 18 OECD countries since 1965, [Hope and Limberg \(2022\)](#) provide strong and robust evidence for this argument. Even controlling for firms' characteristics and performance, international CEO remunerations are negatively associated with top tax rates ([Piketty, Saez, and Stantcheva, 2014](#)). Therefore, progressive

personal income taxation also directly reduces market income inequality and top 1% pre-tax shares, regardless of the application of its revenues into social transfers. While the TI literature develops on the important impacts of other taxes on top incomes, top marginal tax rates is the most used indicator in empirical research.³

Regulation of markets

The liberalization of product markets since 1980s has been even more generalized and intense (OECD, 2011, fig. 1.18.) than that of labour markets, although less regressed on top incomes shares. The OECD (2011) finds that product market deregulation is one of the most robust drivers of earnings inequality, along with the weakening of labour market institutions. Most of the literature takes product market regulations (PMR) as a proxy for anti-competition policies that create rents. Arguments about its effects on inequality are usually based on who collects them, which in turn depends on the bargaining power of labour versus capital.

For Blanchard and Giavazzi (2003), PMR leads to inequality because it increases the rents that are available for some workers to extract. They argue that the observed cross-national correlation between PMR and EPL can be explained by the amount of rent available for labour to appropriate: the lower the rents, the more workers accept labour market deregulation.⁴ When PMR decreases, inequality should decline due to the disappearance of rents that were enjoyed by protected labour. On the other hand, Guadalupe (2007) does not focus on rents, arguing instead that product market competition (PMR reduction) exerts a direct impact on intra-industry returns on skills, increasing wage inequality through higher wage premia. Nonetheless, most of these authors equate PMR to lower competition (Förster and

Tóth, 2015; OECD, 2011) and according to Blanchard and Giavazzi (2003) it should be expected that:

- **H3.a: The regulation of both labour and product markets leads to *high* top income inequality**

In contrast, Reich (2016) and Stiglitz (2015) associate lower PMR to higher market power and thus more rents for some firm owners and managers. Deregulating and privatizing industries like telecommunications, transportation and finance might actually give rise to dominant firms which extract new rents based on patents and copyrights as well as their (quasi-)monopoly power (Kenworthy, 2017). According to Nolan et al. (2019), only one paper estimates the impact of a measure of product market power (firm mark-ups) on top income inequality. Han (2015) finds that market power disproportionately benefits the top 1% at the expense of the rest of the top 10%, showing that rent-extraction occurs at the very top. In short, the effects of product market regulations on inequality are complex and should be analysed in combination with labour market regulations.

- **H3.b: The regulation of both labour and product markets leads to *low* top income inequality**

Financialization

Finally, financialization has a more ambiguous effect due to its measurement and variegated nature across economies (Hager, 2020). It has a significant impact in a context of weak collective bargaining, weak labour protection and predominantly shareholder corporate governance (Roberts and Kwon, 2017). Hence, they are more relevant in LME-like countries (Roberts and Kwon, 2017), particularly in the financial

centres of the US and the UK where the financial system is heavily stock market based. Interestingly, other highly financialized economies (e.g. the Netherlands and some Scandinavian countries) register low levels of inequality despite having higher levels of household indebtedness. [Johnston, Fuller and Regan \(2021\)](#) explain this puzzle through the integration of labour market institutions (and by extension welfare states) and mortgage finance institutions. They argue that “household indebtedness will be highest in countries that possess both strong collective bargaining and permissive credit institutions” ([Johnston, Fuller and Regan, 2021](#), p. 845). Therefore, if financialization is mainly driven by the housing market rather than the stock market, inequality is lower because the highest levels of household debt are explained by strong unions, collective bargaining and welfare states, which provide income and employment security, thus limiting default risks.

I focus on the two main transformations associated with financialization: the shift in corporate strategy to maximize shareholder value and the shift from production to finance as the centre of profit-making ([Hager, 2020](#)). These transformations are usually measured through the economic size of the stock market capitalization ([Hager, 2020](#); [Roine, Vlachos, and Waldenström, 2009](#)) and the stock of external assets and liabilities ([Flaherty, 2015](#); [Cabral, García-Díaz, and Mollick, 2016](#); [Huber et al., 2019](#)), respectively. Since these are the two most consistent determinants of top incomes in cross-national studies, they are the main indicators used in this paper to capture the phenomenon of financialization.

2.3 Growth Models and Regimes

Recently, [Baccaro and Pontusson \(2016\)](#) outlined the development of a new theoretical framework for comparative political economy. The Growth Models

Approach (GMA) shifted the attention to the demand-side and aimed to put “the distribution of income, among households and between labour and capital, at the centre”. Analysing the growth components of aggregate demand of four industrialized economies, the authors argue that different growth model alternatives were pursued after the end of the Fordist wage-led growth model.

The UK followed a *consumption-led* growth model, fuelled by credit and rising wages from buoyant household demand, which had a negative contribution from net exports. Germany is at the other extreme with its *export-led* growth, grounded on the VoC argument of institutionalized wage moderation within a fixed-exchange rate regime. Sweden was able to achieve a mix between these two models, arguably through the investment in higher-valued and knowledge-intensive services which diversified Swedish tradables and enabled lower price-sensitivity of their exports. And finally, Italy failed to develop a sustainable growth model.

Macroeconomic arguments of the Growth Models Approach

The main argument is that less export-led models (Sweden) do not require as much wage moderation as models that are very dependent on exports (Germany). The implicit income inequality driver is the greater decrease in the German wage share arising from the decoupling of productivity gains and wages, particularly in the low-end service sector. The wage gains are kept in line with productivity in the manufacturing core, at the expense of this wage repression for unskilled workers. Indeed, this is reflected in rapidly rising wage inequality at the bottom half of the distribution (p50-p10 ratio).

Importantly, it is argued that this occurs in Germany (and not in Sweden), not because of institutional differences or legitimization narratives ([Polyak, 2024](#)) and

political agency ([Spielberger and Voss, 2024](#)), but due to two macroeconomic reasons. First, the German growth model is much more dependent on exports than the Swedish balanced model. Second, the bulk of German exports is composed of manufactured goods which have become much more price sensitive and, thus, require the repression of wages and consumption to ensure competitiveness.

On the other hand, "[c]onsumption-led growth in the United Kingdom as well as Sweden has generated labour-market conditions favourable to unskilled (service-sector) workers" ([Baccaro and Pontusson, 2016](#), p. 177). Although not entirely neglecting institutional differences (e.g. higher union membership, more encompassing collective bargaining, and lower dualization of labour markets in Sweden), the paper argues that Sweden achieves more equality through a growth model which is less dependent on the price competitiveness of its exports. Moreover, to highlight this macroeconomic explanation, it shows that wages in low-end services also followed aggregate productivity in the UK (the ultimate LME).

The implicit logic is that, regardless of institutions, a consumption-led growth model allows for lower inequality as it thrives on wages. Similarly, analysing some EMU members before the 2008 crisis, the GM approach argues that "income inequality widened substantially in export-driven growth models (because of wage moderation and higher interest rates; and $r > g$) but declined markedly in domestic demand driven models (because of faster wage growth and lower interest rates; and $g > r$)" ([Johnston and Matthias, 2022](#), p. 124). Finally, anchored in the Kaleckian tradition, the GM approach also deems export-led models to be less affected by income inequality. This is because growth suffers less from the reduced private consumption arising from the lower marginal propensity to consume among those at the top. For these reasons, we expect an export-led growth model to lead to inequality, mainly because it requires wage restraint.

- **H4: Export-led growth model is a sufficient condition for high top income inequality.**

Despite striving to put inequality at the centre of the discussion, the argument that consumption-led regimes produce lower inequalities was unconvincing outside CMEs (Hope and Soskice, 2016, pp. 212–13). Quite simply, while less export-led countries are more egalitarian (e.g. Sweden versus Germany), the most consumption-led economies are also the most unequal (LMEs).

Same growth models but different growth regimes

Two recent books help to clarify this puzzle regarding the distributional implications of growth models. Hassel and Palier (2021) propose that Growth Regimes are determined through three dimensions: (i) main engine of growth, (ii) institutional organization, and only then check the (iii) main component of aggregate demand. In the first stage, it is necessary to identify the main engine of growth, i.e. what are the most important sectors (agriculture, manufacturing, finance, housing, knowledge-intensive and ICT). Export-led growth may arise from high-quality manufacturing (Germany), dynamic services (Northern Europe) or FDI (Eastern Europe and Ireland). The first is associated with dualized social and employment protection to maintain price competitiveness. The second requires general social investment in both Active Labour Market Policies (ALMP) and higher education to flourish in the digital economy, while the third model (of Eastern Europe and Ireland) grows through fiscal and social attractiveness. These three export-led models have different implications for inequality.

Crucially, consumption-led growth from financial services (in the US and the UK) is distinguished from that fuelled by government policy to boost social benefits

and wages (in Southern Europe including France). In the first consumption-led regime, the privatization and marketization of housing, pensions and education promote their engine of growth (the financial industry). In the second, the Eurozone has almost completely prohibited the boosting of domestic demand through public deficits, social benefits and minimum wages. The inability to devalue the currency and the budgetary rules led to a regime based on “competitive impoverishment”. Hence, the distributional implications of consumption-led models are quite different depending on how they are financed.

Distinguishing consumption-led growth models

The distinction between the financing of consumption-led models is also a little more explicit in the ambitious book by [Baccaro, Blyth, and Pontusson, \(2022\)](#) that is contesting the VoC hegemony in CPE ([Regan, 2024](#)). Apparently contradicting the end of Fordist wage-led growth announced by [Baccaro and Pontusson \(2016\)](#), modern Post-Keynesian literature provides robust econometric evidence that advanced economies are in fact wage-led (i.e. an increase in the wage share leads to growth) (e.g. [Onaran and Obst, 2016](#)). In the book, [Stockhammer and Onaran \(2022\)](#) explain that, even under a wage-led *demand regime*, a wage-led *growth model* (like that of the post-war period) is only possible if the wage share is not falling.

They argue that advanced political economies, which are mostly wage-led demand regimes experiencing falling wage shares (under “actual neoliberalism”), are left with two options. In order to avoid stagnation, countries must resort to external demand stimulation either via debt-driven or export-driven growth. Hence, in consumption-led growth models, inequality should be lower if consumption is financed through wages (there is an increase in the wage share) but higher if it is financed more through debt/credit (due to the falling wage share).

The US and the UK are usually analysed to explain why debt-driven consumption growth is associated with higher inequality. Their financial systems, which are their growth engines, provide credit to compensate for low wage growth and redistribution, which allows those at the bottom to emulate the consumption patterns of those above them in the distribution ([Frank, Levine, and Dijk, 2014](#)). This is associated with higher inequality because a larger financial sector not only entails wider wage inequality and higher top executive remunerations ([Julia and Watson, 2022](#)) but also higher profits from the recycling of growing wealth at the top towards those at the bottom in the form of debt ([Kumhof, Ranci re, and Winant, 2015](#)).

- **H5: Consumption-led growth models that are financialized lead to high top income inequality.**

“Fuzzy” distributional implications of growth models

Importantly, however, these CPE approaches are mostly concerned with macroeconomic competitiveness and stability, and address wage inequality without looking into top income shares. The exception is a recent paper which aimed to link VoC and GR through the role of income distribution and international imbalances ([Behringer and van Treeck, 2021](#)). The authors use the level of wage bargaining to identify the VoC and conclude that it plays a limited role in current accounts (CA) compared to income inequality. Top income shares are associated with CA deficits (fuelled by debt-led growth) while lower wage shares are correlated with CA surpluses (under export-led growth). Somewhat surprisingly, they argue that wage shares did not decline as much in LME mainly due to booming top earnings. This demonstrates the disconnect between functional and personal income inequalities,

which are actually negatively correlated cross-nationally (Behringer and van Treeck, 2021, pp. 7-8).

All in all, the GM approach frequently states that different growth models have distinct distributional implications. Behringer and van Treeck (2021, p. 2) claim that CPE has failed to separate personal and functional income inequality and to clearly identify the inequality mechanisms operating within each growth model. I agree with this critique and further argue that this failure will persist if the importance of regulatory institutions and power dynamics is neglected and the focus shifts towards explanations centred on the macroeconomic system, even if the underlying politics are sometimes addressed.

3 Synthesis of the three theoretical approaches

The Power Resource Theory (PRT) is rooted in Marxist class analysis, emphasizing that the balance of power between social classes is central to understanding top income inequality. PRT emphasizes two main *power resources for workers* to counterbalance the structural advantage of capitalist: unions and left-wing parties.

In contrast, the public policy framework focuses on the distributional implications of various *government interventions*, such as fiscal policy, deregulation of markets, and financialization. This approach underscores how policy choices can enable or constrain rent-seeking behaviour at the top of the income distribution, particularly focusing on progressive taxation. Nonetheless, both approaches have somewhat neglected the importance of employment protection legislation.

The growth model approach (GMA) shifts the analytical focus to the composition of aggregate demand, mobilizing macroeconomic explanations. This framework argues that export-led growth models are more likely to generate high

top income inequality, because they require wage moderation given the price sensitivity of exports. However, it also recognizes that the distributional effects of consumption-led growth vary depending on how such consumption is financed – through wages or debt. It predicts that financialized consumption-led growth models also lead to high top income shares.

While these three approaches offer distinct analytical lenses, they also share important interconnections. PRT's emphasis on power dynamics provides a crucial foundation for understanding how policy choices and macroeconomic configurations affect inequality. For example, Hager (2020, p. 13) points to Kenworthy's argument that, in the past, the reduction of top tax rates was less correlated with top incomes because executives faced stronger opposition from unions against excessive remuneration. This shows how the effect of tax progressivity on pre-tax shares might be dependent on the bargaining power of unions. On the other hand, the GMA adopts an arguably more functionalist view where institutions are subordinated to macroeconomic factors.

Now that the differences and interconnections between the three theoretical approaches are clarified, we turn to section 4 which briefly highlights the differences between configurational and statistical methodologies, presents the sample and describes the operationalization of the method.

4 Data and method

This paper mobilizes the main determinants of top shares found in econometric studies and attempts to identify and explain the configurations that underlie the observed varieties of top incomes. I employ fuzzy-set Qualitative Comparative Analysis (fsQCA) ([Ragin, 2008](#); [Schneider and Wagemann, 2012](#); [Duşa, 2018](#)) to

study the complex interplay between (as opposed to the independent average effect of) the drivers of top income inequality. In doing so, I try to shed more light on the distributional implications of different institutional arrangements and growth regimes.

Qualitative Comparative Analysis serves as a bridge between quantitative research, which focuses on isolated effects of independent variables, and qualitative investigations that analyse cases as configurations (Ragin, 2008). QCA identifies patterns across cases and reveals causal conditions that are insufficient but necessary for an outcome, as well as conditions that are equally sufficient but different (Ragin, 2008). The latter property of *equifinality* is particularly useful to identify distinct combinations of conditions that can lead to the same outcome (Ragin, 1989), here seen as paths towards inequality. The second element of complex causality underlying QCA is that it deals with *conjunctural causation* (Hall, 2003) where inequality is determined by the combination of factors rather than their independent effects. Finally, *asymmetric causation* means that, unlike econometric coefficients, QCA does not assume that configurations causing high inequality are necessarily the inverse of those leading to low inequality. For these reasons, I do not deem QCA to be a superior methodology to econometrics but rather an excellent complement.

Two fsQCAs are employed to assess necessary and sufficient conditions for both high and low inequality across advanced political economies. Following the selection by Brady et. al (2020), the sample is composed of 22 countries, including all OECD founding members in the 1960s except for Turkey and Iceland, but including Australia and New Zealand. The study focuses on the present time, represented by a four-year average spanning 2017 to 2020, selected to smoothen variables and to deal with

missing years.⁵ The analyses capture the main institutional dimensions mobilized within the CPE scholarship (industrial relations, financial intermediation, product market regulation and welfare states) through five conditions. Concerning the first dimension, union strength and labour market regulation also represent the two main power resources of workers. The sixth and last condition identifies the country's growth model. These concepts are measured through several indicators which are combined to create macro-conditions (Marques and Salavisa, 2017).

Top income inequality, captured by the top 1% share of pre-tax national income from the WID database, serves as the outcome measure. A country is characterized by *High top income inequality* (OUT) when its top 1% holds more than 11% of the nation's income. This crossover is chosen because it divides a gap situated in the middle of the rank and only a few OECD countries surpassed it in the 1980s. The six macro-conditions used are: *Progressive personal income taxation* (PG), *Strong and coordinated unions* (U), *Regulated labour market* (L) and *product market* (PM), a *Large and globalized financial system* (F) and an *Export-led growth model* (X).

To calibrate the outcome as well as the macro-conditions, the paper follows the direct method applying some theoretical knowledge but mostly following an empirical approach. Low levels of skewness are ensured by consistently defining the crossover through a gap around the middle of the rank, while the fully-in and fully-out thresholds constantly leave a similar number of cases beyond those values (three to five, depending on evident gaps). It was through this neutral and systematic approach that all calibrations were performed. Given paper length limitations, a detailed description of the construction of these macro-conditions and the direct method of calibration (Table 1) is presented in Appendix A.

[Table 1 GOES HERE]

5 What explains the variety of top incomes?

In this section, I first analyse the necessary conditions for high and low top income inequality and then the sufficient conditions for the outcome (the paths towards high inequality). But first it is important to understand the definition of these concepts.

A condition is necessary when all outcome cases have that condition. On the other hand, a condition is sufficient when all cases with the condition also have the outcome. In a fuzzy-set QCA, belonging or not belonging to a set is not binary. Instead, membership has different degrees (*i.e.* fuzzy-set scores) ranging from 0 to 1, where the 0.5 crossover determines the qualitative dimension. Since cases do not entirely belong to any set, fsQCA results have different degrees of consistency and coverage. Therefore, sufficiency is additionally assessed through Proportional Reduction in Inconsistency (PRI) to ensure that a (combination of) condition(s) explains the outcome rather than its absence. Necessity is also assessed in terms of relevance (RoN) to avoid identifying a trivial necessary condition which corresponds to a set almost as big as the set of possible realities. For a condition to be deemed necessary, first its consistency must be higher than 0.9, which reduces the likelihood of there being contradictory cases – with the outcome despite not having that condition (Ragin, 2008, p. 46; Schneider and Wagemann, 2012, p. 143; Oana, Schneider and Thomann, 2021, p. 69). For the other parameters there are no strict thresholds, but research practice suggests that a necessary condition must have at least a coverage of

0.6 (Hinterleitner, Sager and Thomann, 2016; Online Appendix, p. 3) and 0.5 of relevance to avoid trivialness (Oana, Schneider and Thomann, 2021, p. 74).

5.1 Necessary conditions

Reflecting the strictness of the concept of necessity and given the variety of top incomes, no individual condition is necessary for either the outcome or its negation (Table 2). This means that not all cases with high/low top income inequality necessarily have a single condition present. Once we check for disjunctions (OR type combinations), we relax this strictness and identify four possible complex necessary conditions for high top income inequality and also four for low top 1% shares. Logically, the larger the set, the more likely it will be a super-set of the (non)outcome. However, after graphically inspecting each of these disjunctions, we find that two of them have at least one deviant case in kind (see graphs in Appendix C). This means that, despite passing the parameters test, they are not necessary conditions since at least one case has low top income inequality without having (“enough” of) this combination of conditions. Table 2 shows the parameters of fit of all single conditions and only the disjunctions that passed the mentioned criteria, where those without deviant cases are in bold. The final criteria to determine whether a disjunction is indeed a necessary condition is the existence of any meaningful high-order concept to which both conditions contribute. I argue that this is true for only two disjunctions.⁶

[Table 2 GOES HERE]

Hence, I find that *market liberalization* ($\sim L + \sim PM$) is the necessary condition for high top income inequality. All countries with high top 1% shares have deregulated either the labour market or the product market. Contrary to the view that PMR creates rents that can later be appropriated by workers with high bargaining power (Blanchard and Giavazzi, 2003), results show that the top is only able to extract substantial income when one or both of the markets are liberalized. This seems to be more in line with the view that rents do not, at least primarily, originate from product market regulation, and that they are extracted by the elite rather than by workers (Reich, 2016; Stiglitz, 2015).

On the other hand, *power resources* of workers ($U + L$) is the necessary condition to achieve low top income inequality. Every country with low top 1% shares has at least one power resource, either strong and coordinated unions or the institutional power given by the legislation on the labour market. Thus, results confirm the first hypothesis posited from the literature. In order to avoid the top 1% extracting high shares of income, it is necessary that national workers have at least one of the main power resources (either through unions or the law).

Before further analysis of the results, it is necessary to understand the basics of how the method works and how sufficient conditions (the paths towards inequality) are derived.

5.2 Sufficient conditions for high top income inequality

To obtain the sufficient conditions, QCA starts by constructing the Truth Table (TT). This table shows all possible combinations of conditions, including those combinations not present in the sample (the logical remainders).⁷ The researcher must make some decisions at this stage. In each QCA, I chose the consistency inclusion and

the PRI cut-offs that include the maximum number of outcome cases but not contradictory cases (complying with the minima of 0.75 and 0.5, respectively).⁸ Then, using Boolean algebra, the method conducts a minimization of the TT by excluding all the irrelevant conditions (Schneider and Wagemann, 2012, pp. 186-195). When two or more outcome cases are equal in all but one condition, then that condition is redundant in terms of sufficiency. Here the researcher must decide how to deal with the logical remainders. The complex solution considers all unobserved combinations as impossible – *i.e.* it assumes that none of those combinations could lead to the outcome. On the other hand, the parsimonious solution treats them as reasonable counterfactuals by assuming that they would lead to the outcome.

In this paper, I analyse the parsimonious results for three reasons. First, I argue that the study of income inequality is so complex and multifaceted that it is almost impossible to capture all of its drivers in any QCA analysis. Consequently, even if all used conditions lead to low inequality, it is possible that a country can actually experience high top 1% shares due to other factors. Using the complex solution, we would be excluding this possibility because that logical remainder would not be used in the minimization. Second, it has been demonstrated that the complex solution often includes incorrect or redundant conditions, while QCA is more often correct when generating the parsimonious solution (Baumgartner and Thiem, 2017). Finally, I am interested in identifying the most relevant factors, the most concise paths, that are sufficient to differentiate the varieties of top incomes. Nonetheless, I also refer to the complex solutions which can be found in Appendix C. Due to limitations on paper length, the analysis of the sufficiency results for low top income inequality is presented in Appendix D.

[Table 3 GOES HERE]

The results for the sufficient solution are displayed in Table 3, which reveals its high levels of consistency, PRI and converge (all above 0.8). Figure 2 also shows that the solution explains all outcome cases (no case in the second quadrant) and has no contradictions (i.e., deviant cases in the fourth quadrant). The sufficient solution is composed of three paths towards inequality, explaining all cases with high top 1% shares.

First path: lack of both key power resources

The majority of elites extract more than 11% of their country's national income due to the workers' diminished power resources. Thus, we confirm the hypothesis that not having either of the main power resources, *i.e.* the absence of strong and coordinated unions *and* a deregulated labour market ($\sim U^* \sim L$), leads to high top income inequality. This unbalanced power arrangement explains inequality in eight of the 11 outcome cases. It identifies the distinctive configurational cause of inequality in all LMEs and, interestingly, it shows that this path is also followed by the two CMEs of Japan and Switzerland.

At odds with the GM literature, results show that the combination of high levels of financialization and a consumption-led growth model, as in the US and the UK, is not a sufficient condition for high top income inequality. Instead, these elites extract

high shares of income, as do those in non-financialized consumption-led economies like New Zealand and even in growth models strongly dependent on exports such as Switzerland because workers have no source of counteracting power. Furthermore, looking at the complex solution, we see that tax progressivity is not sufficient for low inequality. Japan and Denmark have high top 1% shares despite having highly progressive personal income taxation, with top marginal tax rates close to 56%.

Second path: export-led growth model *and* deregulated labour market

The second path towards inequality combines the conditions of being export-led *and* having a deregulated labour market. This is the only path that explains Denmark, which instated the flexicurity system and is the only Nordic country that is deeply dependent on exports as opposed to having a balanced growth model (see raw data in Appendix B). There are two differences between the four cases underlying this path (Denmark, Ireland, Japan and Switzerland) and all the other export-led countries. First, the latter have regulated labour markets. Second, these export-led economies also tend to register low levels of inequality.

In fact, Germany is the only export-led country that has high inequality despite having a regulated labour market. Therefore, we reject the hypothesis that having an export-led growth model is sufficient for high top income inequality. Germany has the latter condition because it maintained the protection of permanent contracts while deregulating temporary ones, unlike Denmark which displays low EPL for both types of contracts. The resulting dualization of employment protection was further intensified since permanent contracts actually became more strictly regulated while fixed-term contracts and agency work were strongly liberalized ([Anderson and Anke, 2019](#), p. 17).

Baccaro and Pontusson (2016) maintain that inequality increased in Germany due to the repression of wages in the unprotected sectors, which is arguably required to achieve price competitiveness, whilst wages were kept in line with productivity in the protected manufacturing core sectors. This might indeed explain rising wage inequality, particularly at the bottom half of the distribution. Nevertheless, high top 1% income shares are explained by the widespread weakening of employment protection rather than dualized protection. Moreover, this mechanism may be unique to Germany as it depends on the fact that unions are concentrated around the manufacturing core industries. Denmark, on the other hand, like the other Nordics and Belgium (another case heavily dependent on exports), have very high levels of union density and coverage. As we will see, our results point to another explanation for high income extraction by the elite in Germany.

The condition of having a deregulated labour market ($\sim L$) could be interpreted as an indication of high price sensitivity of exports. The loosening of employment protection, so the argument goes, is necessary in economies heavily dependent on exports that are price sensitive. This line of thought could be applied to Japan and Switzerland because they have export-led models that are based on manufactured goods (Hassel and Palier, 2021). In this case, results would suggest that top income inequality (rather than just wage inequality) in export-led economies could be explained by the importance of price competitiveness. Although not testing for the price sensitivity of exports, we have no reason to expect high levels at least in the other two countries (Denmark and Ireland).

According to Hassel and Palier (2021) Denmark, just like Sweden, is a model based on the exports of dynamic sectors and high-end services. It focuses on pharmaceuticals, design and environmental technologies (Hassel and Palier, 2021, p. 390), with major companies such as *Novo Nordisk* and *Vestas Wind Systems* that

depend more on quality competitiveness. In turn, Ireland is an FDI-financed export-led growth model that relies more on fiscal and social attractiveness than on the price of exported goods. Moreover, Japan and Switzerland are also explained by the first path of diminished workers' power ($\sim U^* \sim L$).

Consequently, the ($\sim L$) condition should be interpreted as weak institutional power at the society level (Schmalz et al., 2018) rather than an indication of price sensitivity. I therefore argue that, irrespective of the price sensitivity of exports (Baccaro and Pontusson, 2016), it is the overall deregulation of the labour market, the actual loosening of workers' rights in itself, that determines whether an export-led model leads to high top 1% shares.

Third path: diminishing progressivity amid large-scale privatizations

The third path is the combination of no progressive personal income taxation, a deregulated product market and the absence of a large and globalized financial system ($\sim PG^* \sim PM^* \sim F$). This shows that, regardless of the growth model and financialization, both Germany and Spain have been experiencing rising top 1% shares due to the liberalization of key product markets and to the lack of tax progressivity. Both of these countries undertook particularly intense privatization programmes.

Following the unification of Germany, the privatization of East Germany's firms was arguably the largest in history (Hennicke, Lubczyk, and Mergele, 2020). Importantly, it was investors from West Germany, who were already richer on average, that acquired the firms that were initially more productive and were more successful decades later (Hennicke et al., 2020, Fig. 8). In contrast, investors from the East bought significantly less profitable companies (Hennicke et al., 2020, Table

5). Moreover, "[t]he top percentile of ultimate owners controls more than a fifth of all pre-privatization employment and more than a third of initial revenues" (Hennicke et al., 2020, p. 28). These two facts further increased top income inequality in unified Germany through the concentration of capital income. In addition to these privatizations in East Germany, many of the largest West German businesses were also fully or partially privatized at the turn of the millennium.

[Figure 2 GOES HERE]

These included major firms from network sectors (energy, transportation and communication), such as the Deutsche Bundespost (a conglomerate of telecommunication, postal and logistics businesses), Lufthansa (one of the largest airlines in Europe) and E.ON (one of the biggest electric utility providers in the world).⁹ During the privatization of the Deutsche Bundespost, which occurred through the largest IPO in history,¹⁰ it was separated into three companies which are still among the top 15 most profitable firms in Germany.¹¹ This significantly increased stock market capitalization and accentuated the concentration of private profits and subsequent personal capital income in the following years. Thus, it boosted the income of the German top 1% who have historically been predominantly composed of business owners (rather than the working rich or financial rentiers) (Bartels, 2017).

Spain privatized 134 companies between 1985 and 2005 with a view to

deregulating the financial sector and key product markets like telecommunications, energy and transport (Cabeza García and Gómez Ansón, 2007). “The Spanish privatisation programme is one of the most far-reaching programmes ever undertaken by a non-Eastern European country.” (Cabeza García and Gómez Ansón, 2007, p. 4). Three major privatizations can be highlighted from this vast list (see table 1 in Cabeza García and Gómez Ansón, 2007): Telefónica, Repsol and Red Eléctrica de España (REE).¹² The first two are among the top 5 Spanish companies both in terms of profits and revenue according to the Fortune List. The third, REE, was not fully privatized as the State still owns around 20% and it runs the electrical grid infrastructure.

This is a perfect example of why deregulating product markets might not increase competition but instead inequality. The national electricity transmission system is a market that constitutes a natural monopoly. Not due to regulation but to first-mover advantages and because it requires massive investments with high risk, usually made by the state. Quite simply, it does not make sense to have several electricity towers or railway lines covering the same route. Privatizing such a company would decrease the PMR indicator without having any effect on competition while likely increasing inequality because stocks tend to be bought by those at the top. Indeed, in 2006, around half of the Spanish stock market capitalization originated from privatized companies and most of them were bought by established big national companies and banks (Cabeza García and Gómez Ansón, 2007, p. 8).

Even with small levels of stock market capitalization at the international level, and no relevant financialization mechanisms ($\sim F$), the incomes of rich business owners from Spain and Germany might have increased more than others simply due

to the massive transfer of income from the public sector to their private spheres. However, a deregulated product market (~ PM), and the underlying privatization of network sector companies, is not in itself a sufficient condition for high top income inequality.

What is crucial is that both countries implemented several reforms that lowered the progressivity of their tax systems during these substantial privatizations. At the beginning of the century, top marginal tax rates stood above 53% in Germany and 48% in Spain but were cut to around 44% in the mid-2000s.¹³ Even though they are slightly higher nowadays, they have never returned to the initial levels in either of these countries. Additionally, this rate used to be applied to incomes four times larger than the average wage in Spain, but in 2020 it was applied to those just below 2.5 times that wage.

Furthermore, the two countries implemented a dual income tax system where most types of capital incomes (especially those that are more concentrated at the top) are taxed separately at a much lower, often flat, tax rate. After the first *Abgeltungsteuer* reform in 2002 ([Díaz-Caro and Onrubia, 2019](#)), and the extensions made in 2009 ([Anderson and Anke, 2019](#)), German capital incomes – be it investment income, dividends, capital gains or interests – started to be taxed at a flat rate of 25%, rather than being subject to the bracket's progressivity applied to labour income. Spain implemented its dual tax system in 2007 taxing capital incomes at just 15%. Though this rate increased to 19% and some brackets were introduced in the following years ([García-Miralles et al., 2019](#)), the maximum tax rate for these concentrated incomes is just over 25%.

Finally, the progressivity of the overall tax system diminished substantially also because CIT rates were slashed. Between 2000 and 2020, the rates applied to the

profits of German and Spanish corporations declined from over 50% to 30% and from 35% to 25%, respectively. The combination of diminished tax progressivity and the substantial liberalization of key product markets is what explains the higher extraction of national income by the richest 1% in these two countries.

How do these results relate to the existing literature? What are the theoretical implications of the above necessary conditions and sufficient conditions for high and low inequality? The next section discusses the main findings and how they contribute to each of the three theoretical frameworks used to comprehend the cross-national diversity in top income shares.

6 Discussion

The overarching argument that the varieties of top incomes are explained by market regulation and labour power resources, and not by market forces and growth models, is supported by the empirical results.

Table 4 summarizes the hypothesis tested in this paper. The results confirmed the hypotheses derived from the PRT and rejected the other three. [Blanchard and Giavazzi's \(2003\)](#) proposition (H3.a), that the regulation of both markets leads to inequality because workers with higher bargaining power (L) would appropriate the rents generated by the lack of competition (PM), is totally rejected. In fact, this combination is the most common path (L*PM) towards low inequality, confirming the inverse hypothesis (H3.b). In addition, the necessity analysis reveals that elites extract high shares *only if* at least one of the markets is liberalized ($\sim L + \sim PM$). Contrary to these authors, [Stiglitz \(2015\)](#) and [Reich \(2016\)](#) defend that deregulation does not ensure competition and may instead increase the market power of large firms. I argue that the liberalization of product markets may grant (quasi)monopolies to the richest,

while the deregulation of labour markets weakens the capacity of workers to counteract the extraction of those rents by business owners and their managers.

Results reject both hypotheses derived from the Growth Models Approach (GMA). First, they show that having an export-led growth model does not imply high inequality levels. Findings suggest that what determines if export-led growth leads to high inequality is the regulation of labour markets, and not the price sensitivity of exports as proposed by [Baccaro and Pontusson \(2016\)](#). Second, within consumption-led growth models, what defines the elite's ability to extract a higher share of income is not the level of financialization but rather the absence of both key power resources: unions' associational power and legislation's institutional power.

[Table 4 GOES HERE]

These findings have important implications for the current debate within CPE, contribute to the development of PRT and complement the literature on the varieties of top incomes.

The GMA emphasizes that in the Post-Fordist era institutions became somewhat subordinated to the country's growth model and to macroeconomic factors. Some authors argue that under the neoliberal capitalism, and after the last decades of liberalization, unions became almost redundant ([Baccaro and Howell, 2018](#)), and that their strategic actions might only be successful if they target the growth models

([Howell, 2021](#), p. 767). The underlying tendency is to conclude that institutions that were able to tackle inequalities in the past are now dependent on their compatibility with the country's growth model (and the dominant social bloc). In contrast to this arguably functionalist view, this paper shows that unions and labour market regulations continue to be paramount determinants of inequality, particularly at the top of the distribution. Regardless of the country's growth model or its variety of capitalism, and despite the decline in union density as well as the retrenchment of labour security and bargaining power, the two key power resources of workers remain at the front and centre of the explanation for the varieties of top incomes among post-industrial economies.

On the other hand, the PRT and the econometric literature highlight union density as the most important determinant of top 1% shares. However, some countries achieve low top 1% shares despite weak union density (e.g. France), and there are cases with strong and coordinated unions with high top 1% shares (e.g. Germany). The fundamental argument of the PRT is that variations and interactions of power resources of workers explain societal changes, such as income inequality ([Refslund and Arnholtz, 2022](#), p. 1961). This paper contributes to the development of PRT by finding that the overall employment protection legislation of permanent and temporary contracts is an equally crucial factor in the configurations that explain top income inequality. By distinguishing unions from the institutional power provided by labour market legislation, we can verify that their simultaneous absence explain inequality in most countries (LMEs as well as CMEs). The latter sheds light on the importance of considering other types of power resources beyond unions and left partisanship ([Schmalz et al. 2018](#); [Refslund and Arnholtz, 2022](#)), especially given to the fact that many centre-left parties did not implement policies sufficiently different from the centre-right after the Third Way strategy.

However, the associational power of unions and the legislation's institutional power are not the whole story. Having a liberalized product market *or* a liberalized labour market is a necessary condition for elites to extract high shares of income, while the regulation of both markets is the most common sufficient path towards low inequality. This reveals that product market regulation, although less frequently analysed to study income inequality, is a central piece to explain the *varieties of top incomes* puzzle.

Finally, the paper contributes to the latter literature and addresses the avenue for further research identified by [Hager \(2020\)](#), by conducting a method that takes into account the complex *interplay* of factors, thus complementing econometric evidence. QCA results show that some elites in CME/export-led models (Germany), as well as in consumption-led models that are LME (Australia) and MME (Spain), extract high shares of income through diminishing tax progressivity combined with liberalized product markets and privatized network sectors, despite low levels of financialization. This illustrates the importance of configurational methods in finding complex causal explanations that are specific to small groupings of cases, which would be very difficult to identify through statistical inference.

7 Conclusion

Although income inequality has been rising in most nations since the 1980s, top incomes evolved quite differently across countries resulting in a marked variety of top 1% shares ([Hager, 2020](#)). This paper investigates the substantive explanations for these varieties of top incomes and addresses the distributional implications of growth models. The study uses fuzzy-set Qualitative Comparative Analysis (fsQCA) to identify under which institutional settings and growth regimes elites extract high

shares of national income and the conditions for low top 1% shares.

The analysis reveals that market liberalization, specifically the deregulation of labour or product markets ($\sim L + \sim PM$), is a necessary condition for elites to extract more than 11% of a country's income. In contrast, containing the departure of the richest 1% is only possible when workers have one of their power resources, either strong and coordinated unions or the institutional power of labour market legislation ($U+L$).

The sufficiency analysis shows that all countries with high top 1% shares followed at least one of three paths. The first path towards inequality is the absence of both key power resources ($\sim U^* \sim L$). This unbalanced power relation not only explains why all LMEs have high inequality but also shows that, under these conditions, there is high top 1% shares even in CMEs. Thus, elites thrive in the US and the UK, not due primarily to their financialized consumption-led growth model, but because of uneven class power relations. The second path demonstrates that having an export-led growth model does not automatically lead to inequality. It is a sufficient condition only if it is combined with the general liberalization of labour contracts ($\sim L^* X$). Therefore, it is the weak institutional power of workers at the society-level that determines whether an export-led regime leads to high top 1% shares rather than the country's price competitiveness as [Baccaro and Pontusson \(2016\)](#) propose. The third path illustrates that, regardless of the growth model, elites in Germany and Spain thrive due to the slashing of progressivity amidst two of the largest privatization processes in the western world ($\sim PG^* \sim PM^* \sim F$).

In contrast, most low-inequality countries contain the rise in top incomes through the regulation of both labour and product markets ($L^* PM$). The study provides strong evidence that market regulation can lead to low inequality when workers have institutional power to counteract the elite's extraction of rents, which

are smaller when major markets with monopoly tendencies remain under the public sphere. Surprising results are found concerning the effects of financialization, with the combination of a large and globalized financial system with strong and coordinated unions appearing to explain low top 1% shares in some countries.

All the sufficient conditions for high and low inequality are robust to different representations of the present time, namely the years between 2016-2019, which exclude the COVID-19 pandemic (Appendix F, p. 44). One drawback of the model is that Austria is an outlier, since it has a low top 1% share and is not covered by neither of the abovementioned sufficient paths towards low inequality. This occurs because it is a case with a liberalized product market and relatively small financial system. While data shows that Austria has strong unions, a regulated labour market as well as the highest level of tax progressivity, results do not find this combination of factors to be a distinctive sufficient path that explains its low top 1% share. Notwithstanding, the model is empirically relevant because it does not have any deviant cases in-kind, which would contradict some of the sufficient paths or necessary conditions, and it only has one outlier out of 22.

Fuzzy-set QCA has some limitations compared to quantitative methods, such as econometrics. Statistical inference allows for broader generalizations and has higher external validity than qualitative methods, whereas fsQCA results are more case specific (Berg-Schlosser *et al.*, 2009, p. 12). Since cases change across time, and QCA cannot incorporate the time dimension, the sufficient and necessary conditions for high/low inequality in different periods will not be the same.

To enrich the empirical work, additional fsQCA were conducted for the last three decades: the 1990s, the 2000s and the 2010s (Appendix E, p. 29-41). Overall, the results are in line with the argument that top income inequality is explained by labour power resources and market regulation, and not by macroeconomic factors and

growth models. Interestingly, results for the 2010-2019 period are very similar, since the paths towards high inequality are: (i) the combination of weak unions and deregulated product markets ($\sim U^* \sim PM$), which explains all LMEs and Japan; and (ii) the exact same configuration of diminished progressivity amid large scale privatizations ($\sim PG^* \sim PM^* \sim F$), which continues to explain Germany and Spain. Moreover, although no necessary conditions were found, the sufficient paths for low inequality are exactly the same. The results for the other two decades are distinct. Yet, two observations can be made: (i) 12 out of 16 causal configurations include at least one of the key power resources (associational or institutional); and (ii) any growth model, even a financialized consumption-led country, can have high or low inequality depending on other factors, mostly the power of unions or the level of protection in labour legislation. The explanations for changing paths towards high and low inequality throughout the decades would require further research and is out of the scope of this paper.

Overall, we can conclude that the distributional implications of growth regimes are not as straightforward as the literature suggests, and it is necessary to look into national regulatory institutions and power relations to understand the varieties of top incomes. The study highlights the significance of Power Resource Theory in understanding the causes of income inequality, particularly if it takes into account different types of power resources, such as the institutional power that labour market legislation provides at the societal level. It also finds that the liberalization of key product markets, namely the privatization of network sectors, deserves further attention from the literature.

In conclusion, this study confirms that income inequality is a complex phenomenon that cannot be explained by a single cause or combination of factors. Instead, it is the result of different combinations of institutional settings and power

relations, which are case specific and can occur in any growth model or variety of capitalism. Future research should address the configurational effects of different types of financialization (based on the stock market, the housing market and the pensions system) and compare case studies with similar institutional backgrounds and growth regimes but different levels of inequality. By doing so, historical institutionalism could shed more light on the complex causality behind top income inequality.

Notes

¹ [Pontusson \(2013\)](#) argues that union membership is increasingly composed of higher income workers who have lower preferences for wage solidarity and redistribution. Moreover, [Tober \(2019\)](#) shows that the equalizing effect of unions, particularly at the top, is significantly reduced due to European integration.

² This first *World Inequality Report* shows that a 2 pp decrease in top marginal tax rates is associated with a 1 pp increase in top 1% pre-tax income shares ([Alvaredo et al., 2016](#)).

³ Some of these authors go well beyond personal income taxation, because those at the top can avoid reporting their true economic incomes in these tax returns. Owners of companies and some self-employed have the capacity to disguise personal from corporate income and be taxed at an increasingly lower corporate tax rate. Under globalization, this capacity is not restricted to national constituencies. Major consultancy firms specialize in services of transfer pricing that allow the owners of multinationals to shift profits to tax heavens. Additionally, personal wealth, and the respective capital income, is hidden in tax havens by the richest ([Wright and Zucman, 2018](#); [Alstadsæter, Johannesen, and Zucman, 2018](#)). Eroding taxation of wealth and profits, together with tax benefits for capital incomes, have greatly reduced the progressivity of the total tax system. So much so that, nowadays, the richest 400 US billionaires pay a lower effective tax rate than everyone else ([Saez and Zucman, 2019b](#)). All this has implications for top incomes since a progressive wealth tax has been

argued to be the most effective policy to restore progressivity (Saez and Zucman, 2019a).

⁴ “... product market deregulation may, by decreasing total rents, lead to a decrease in the incentives of workers to appropriate the now smaller rents, and thus make it easier to achieve labour market deregulation.” (Blanchard and Giavazzi, 2003, p. 900).

⁵ The only exception is the growth model condition which is averaged out over a greater time period due to its high volatility, as explained in the Appendix A.

⁶ To our knowledge, there is no evident high-order concept regarding the combination of the absence of strong unions and the liberalization of product markets other than the decline in union membership arising from privatization (contained in $\sim PM$). Since this is already incorporated in the first condition ($\sim U$) and does not itself pass the parameters test individually, I do not consider this disjunction to be a necessary condition for high inequality. The same reasoning applies to the disjunction ($U + PM$), but in reverse, for low inequality. With respect to the remaining two combinations for high inequality, there is no reasonable high-order concept that connects the absence of financialization with either weak unions ($\sim U + \sim F$) or weak labour market regulation ($\sim L + \sim F$).

⁷ The number of logically possible combinations is equal to 2 to the power of the number of conditions used. In the final results, six conditions are used, which can be combined in 64 ways, for a sample of 22 cases. Thus, we have a balanced QCA specification since using seven conditions would be too much and five conditions too little. Seven conditions would likely lead to a problem of limited diversity given the 128 combinations (*i.e.* too many logical remainders, exactly 106) and using five conditions would not be sufficient to differentiate all cases with only 32 possible combinations (and just 10 logical remainders).

⁸ For the sufficiency analysis of high top income inequality, the chosen consistency inclusion cut-off is 0.752 and the PRI cut-off is 0.594. In the results for low top income inequality, the values are 0.82 and 0.617, respectively (see the Truth Tables in the Appendix C).

⁹ Deutsche Bundespost was fully privatized in 1995, Lufthansa in 1997 and E.ON originated in 2000 from the merger of two previously state-owner enterprises (VEBA which was privatized in 1965 and VIAG in 1988).

¹⁰ <https://www.goldmansachs.com/our-firm/history/moments/1996-deutsche-telekom-privatization.html>

¹¹ In the privatization process, Deutsche Bundespost was separated into three major companies, all traded in the stock markets. Deutsche Telekom, which operates several subsidiaries such as T-Mobile, was the largest telecommunication business in Europe and a monopoly under state ownership. Nowadays, it is among the top 10 firms by revenue in Germany and among the top 100 companies in the world, according to the Fortune List. The second was Deutsche Post AG (DHL), which is currently one of the world's largest courier companies and the largest in Europe (it is also in the top 10 of German firms by revenue and the top 150 Fortune List). Thirdly, Deutsche Postbank, a retail banking division of Deutsche Bank that was later bought by Deutsche Post in 1999.

¹² Telefónica was privatized in 1986 to collect revenue and help the country's compliance with the Maastricht convergence rules and adhere to the European Union. Repsol was fully privatized in 1997 in a process that started in 1989. REE was partially privatized in 1999, as the state still owns around 20% of the shares.

¹³ The Spanish PIT system is actually very heterogeneous because it is composed of a baseline at the state level and the other half is defined by the autonomous regions (García-Miralles, Guner, and Ramos, 2019). For example, in 2022, Comunitat Valenciana had the 4th highest rate in Europe (54%) while Madrid ranked 22nd with a rate of only 45% (Enache, 2022, Map 2).

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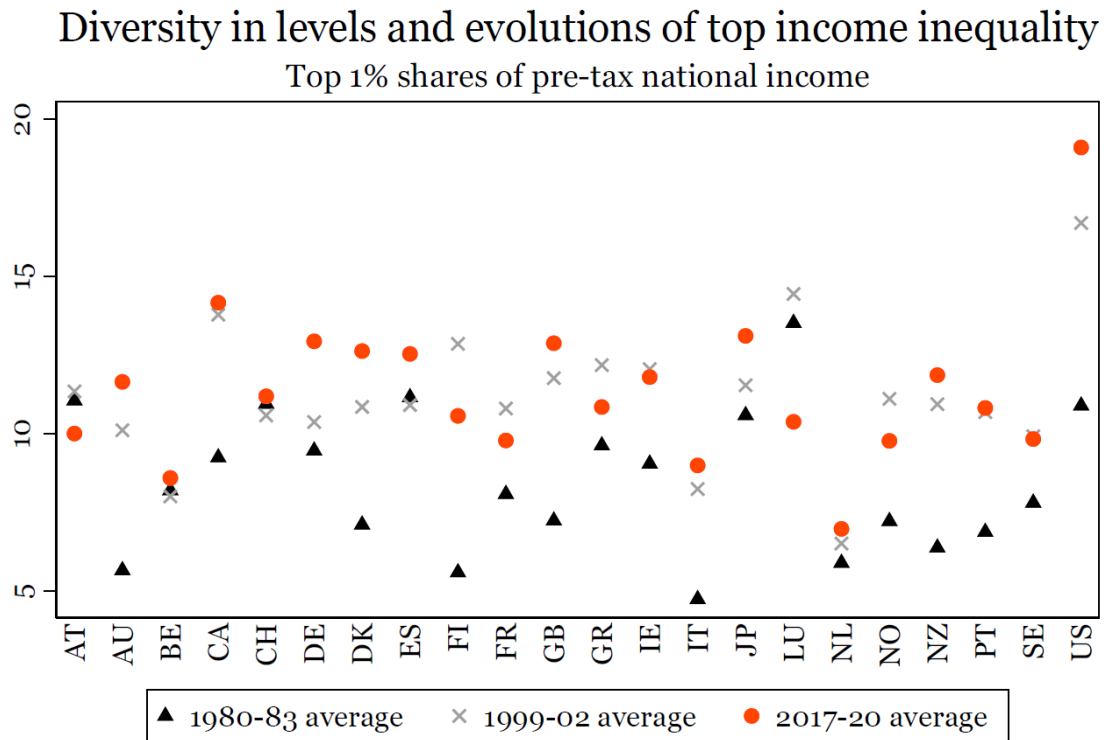
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Figures and Tables



Source: WID.world (may 2022); inspired by Hager 2020

Figure 1: Variety of top income inequality in the OECD. Figure displays the four-year average of top 1% shares of pre-tax national income of 22 advanced political economies, in three periods: the beginning of the 80s, the turn of the millennium and the present. Key: AT-Austria, AU-Australia, BE-Belgium, CA-Canada, CH-Switzerland, DE-Germany, DK- Denmark, ES-Spain, FI-Finland, FR-France, GB-United Kingdom, GR-Greece, IE-Ireland, IT-Italy, JP-Japan, LU-Luxembourg, NL-Netherlands, NO-Norway, NZ-New Zealand, PT-Portugal, SE- Sweden, US-United States.

Table 1: Qualitative anchor points for the calibration of fuzzy sets

Outcome/condition	Qualitative anchor points		
	Fully out	Crossover	Fully in
High top income inequality (OUT)	9	11	13
Low top income inequality (lowOUT)	13	11	9
Progressive personal income taxation (PG)	1.5	2.5	3.5
Strong and coordinated unions (U)	0.8	2.2	4
Regulated labour market (L)	0.8	2.2	4
Regulated product market (PM)	1.5	2	2.47
Large and globalized financial system (F)	0.5	1.1	1.5
Export-led growth model (X)	0.5	1.2	3

Note: For a detailed explanation about the construction of these macro-conditions, the source of all indicators used, and their calibration process, see the Appendix A.

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Table 2: Analysis of Necessity – All conditions plus the disjunctions that pass the parameters test

Condition	High top income inequality (OUT)			Low top income inequality (~OUT)		
	Consistency	Coverage	RoN	Consistency	Coverage	RoN
PG	0.461	0.575	0.803	0.376	0.556	0.796
U	0.777	0.734	0.800	0.412	0.460	0.663
L	0.839	0.746	0.788	0.432	0.455	0.633
PM	0.657	0.651	0.770	0.425	0.498	0.699
F	0.622	0.542	0.663	0.581	0.600	0.693
X	0.701	0.659	0.755	0.492	0.548	0.700
~PG	0.645	0.466	0.520	0.713	0.610	0.597
~U	0.428	0.381	0.603	0.762	0.802	0.826
~L	0.387	0.366	0.626	0.759	0.848	0.875
~PM	0.494	0.421	0.597	0.703	0.708	0.746
~F	0.541	0.522	0.698	0.556	0.635	0.752
~X	0.519	0.464	0.639	0.693	0.733	0.781
~U + ~PM	0.953	0.686	0.510			
~U + ~F	0.912	0.690	0.561			
~L + ~PM	0.919	0.738	0.648			
~L + ~F	0.902	0.693	0.577			
U + L				0.952	0.671	0.701
U + PM				0.951	0.532	0.622
U + X				0.906	0.621	0.652
L + X				0.913	0.595	0.639

Notes: The table shows the parameters of consistency, coverage and relevance used to assess potential necessary conditions. These should simultaneously be above 0.9, 0.6 and 0.5, respectively. No single conditions pass this criteria, while four disjunctions of conditions are identified for having high inequality and for having low inequality. Disjunctions in bolt have no deviant case in kind, while only those highlighted are considered necessary conditions.

Table 3: Parsimonious solution for High top income inequality (OUT)

	inclS	PRI	covS	covU	cases
$\sim U * \sim L$	0.942	0.924	0.658	0.232	AU; GB,US; NZ; CH,IE; JP; CA
$\sim L * X$	0.763	0.607	0.374	0.008	CH, IE; JP; DK
$\sim PG * \sim PM * \sim F$	0.860	0.818	0.321	0.085	AU; ES; DE
Solution	0.845	0.802	0.840		

Notes: Parsimonious solution is composed by three terms as follows:

$\sim U * \sim L + \sim L * X + \sim PG * \sim PM * \sim F$. Each term's parameters correspond to consistency (inclS), Proportional Reduction in Inconsistency (PRI), solution term raw coverage (covS) and unique coverage (covU), plus the cases underlying each solution term (path). This solution explains all countries with high top 1% shares and has no deviant cases in kind.

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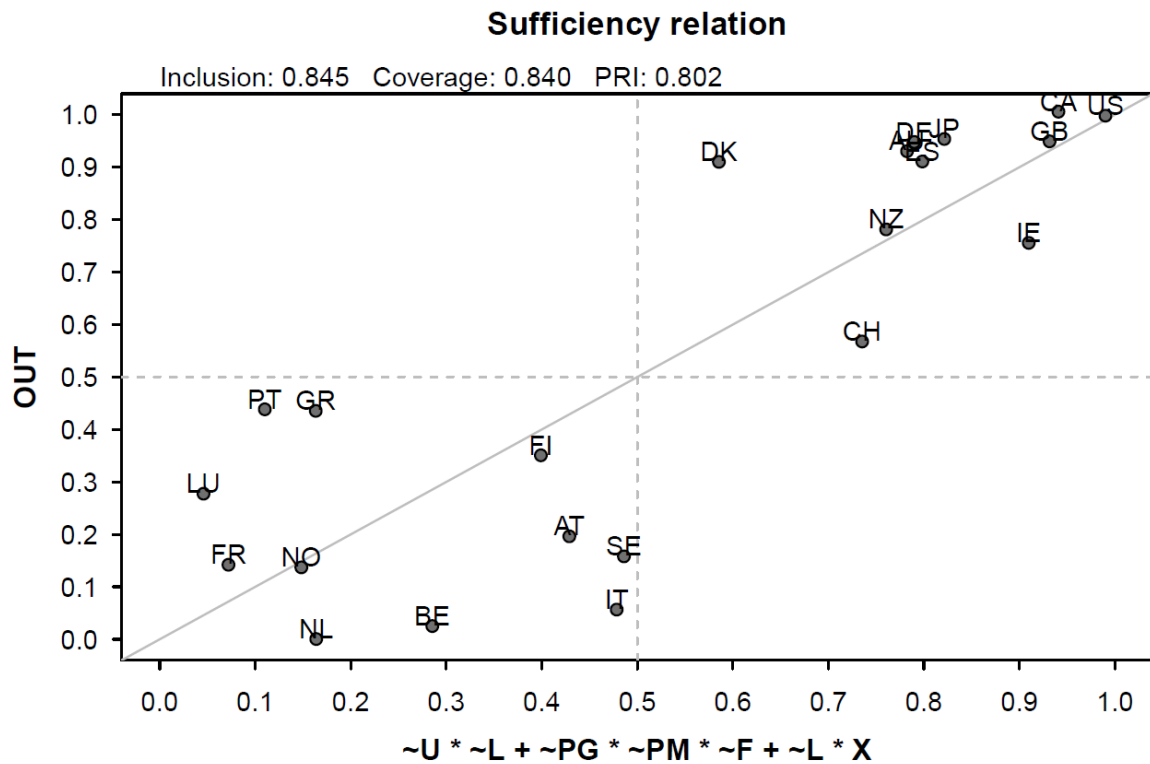


Figure 2: Sufficiency solutions for high top income inequality. Figure displays the cases' outcome fuzzy-set membership scores (OUT) against the parsimonious solution term. It shows no deviant cases in kind and that the model fully explains every case of high inequality.

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Table 4. Hypotheses and main results: a summary

H1: It is necessary for workers to have at least one of the key power resources to achieve low top income inequality.	Confirmed. The disjunction (U + L) of strong unions (associational power) or a regulated labour market (institutional power) is a complex necessary condition for low inequality.
H2: When workers lack both key power resources, it leads to high top income inequality.	Confirmed. The simultaneous absence of union's associational power and of legislation's institutional power ($\sim U^* \sim L$) is a sufficient path towards high inequality.
H3.a: The regulation of both labour and product markets leads to <i>high</i> top income inequality	Rejected. The combination of a regulated labour market with a regulated product market (L*PM) is a sufficient path towards low inequality, not towards high inequality.
H3.b: The regulation of both labour and product markets leads to <i>low</i> top income inequality	Confirmed. The combination of a regulated labour market with a regulated product market (L*PM) is a sufficient path towards low inequality.
H4: Export-led growth model is a sufficient condition for high top income inequality.	Rejected. The condition X (export-led growth model) is not sufficient for high inequality. Only if combined with a deregulated labour market, i.e. in the context of weak institutional power ($\sim L^*X$).
H5: Consumption-led growth models that are financialized lead to high top income inequality.	Rejected. The conditions of a large and globalized financial market (F) and a consumption-led growth model ($\sim X$) are not part of the solution formula for high inequality. Thus, the combination of both ($F^* \sim X$) is not sufficient for the outcome.