
This is the **published version** of the bachelor thesis:

Kaplinsky Vivanco, Ariel. *Pensions, Redistribution, and Welfare Regimes: A Comparative Analysis of Spain, the United Kingdom, Sweden, and Germany.*

Treball de Final de Grau (Universitat Autònoma de Barcelona), 2025 (Grau en Història, Política i Economia Contemporànies / Contemporary History, Politics and Economics). 58 pàg.

This version is available at <https://ddd.uab.cat/record/330328>

under the terms of the  license.



Universitat Autònoma de Barcelona

Bachelor's Degree Final Project

Faculty of Arts and Humanities

Pensions, Redistribution, and Welfare Regimes: A Comparative Analysis of Spain, the United Kingdom, Sweden, and Germany

Ariel Kaplinsky Vivanco

Prof. Fernando Payró Chew

Bachelor's Degree in Contemporary History, Politics and Economics

2025-2026

Abstract

This paper examines the structural dynamics of European welfare state configurations through the primary lens of public pension systems. Utilizing an Ordinary Least Squares (OLS) time-series framework across a forty-year horizon, this study provides an empirical approximation to identify general trends of redistribution within four countries representing distinct welfare regimes: Spain, Germany, Sweden, and the United Kingdom. By tracking these historical trajectories, the analysis evaluates how contemporary redistributive mechanisms have evolved since the foundational context established by Esping-Andersen (1990), mapping variations in redistributive capacity at both the aggregate level and across specific income brackets from the working class to the economic elite.

The empirical findings reveal that redistributive effectiveness depends on the interaction between institutional welfare structures and socioeconomic status. Spain exhibits a high reliance on pensions, particularly among the middle class, underscoring the centrality of cash transfers within the Mediterranean model. The United Kingdom reflects a limited, segmented approach to redistribution that aligns with the nature of the Liberal regime. Germany demonstrates a balanced mechanism where redistribution is bound to economic growth and formal employment, reinforcing the occupational focus of the Corporatist model. Meanwhile, Sweden reveals a structural dynamic where unemployment and labor market institutions exert a greater redistributive influence than pensions themselves, upholding the universalist principles of the Social-Democratic regime.

Broadly, the results suggest that as analysis shifts from the working class to higher-income brackets, the redistributive salience of pensions diminishes while the impact of economic growth increases. Additionally, the relationship between unemployment and redistribution remains concentrated within the working and middle classes, who are systematically exposed to labor market volatility and rely directly on the welfare state's automatic stabilizers.

Keywords: Public Pensions, Income Inequality, Redistributive Capacity, Welfare State Regimes, Europe, Gini Coefficient.

Table of Contents

Abstract.....	2
1. Introduction.....	4
2. Literature Review.....	5
3. Research Hypotheses.....	7
4. Data and Methodology.....	8
5. Results.....	11
5.1 Spanish Results.....	11
5.2 British Results.....	16
5.3 Swedish Results.....	21
5.4 German Results.....	26
6. Discussion and Conclusion.....	31
7. Bibliography.....	37
8. Appendix.....	39

AI (ChatGPT) tools were used exclusively for grammar correction, language refinement, and improvements in written expression, as English is not my native language. All research, data analysis, interpretation of results, and conclusions were carried out independently. AI was used solely for linguistic and editorial support.

1. Introduction

In *The Three Worlds of Welfare Capitalism*, Esping-Andersen argues that welfare states should not be judged purely by how much they spend on social programs, but rather by how they structure social rights and social stratification (1990, p. 19). Central to his analysis is the concept of de-commodification, defined as the degree to which citizens can maintain a socially acceptable standard of living independent of their participation in the labor market (1990, p. 21). Esping-Andersen identifies public pensions, alongside sickness and unemployment benefits, as the three core programs used to measure de-commodification in practice (1990, p. 49). Therefore, pension systems offer a unique analytical lens, functioning not only as social measures to correct inequality but also as policies that actively shape social stratification and organize social relations (1990, p. 23).

Understanding the effectiveness of these monetary transfers allows us not only to measure their redistributive power, but also to analyze the welfare state within its broader macroeconomic context.

On the macroeconomic front, Thomas Piketty points out that when the rate of return on capital consistently outpaces economic growth, capitalism naturally generates arbitrary inequalities that threaten democratic stability. Piketty argues that government intervention is vital to curb these forces and ensure the public interest overrides private wealth, all while keeping the economy open (2014, p. 15).

In this light, the programs identified by Esping-Andersen serve as mechanisms through which the welfare state tries to restrain the divergent forces built into capitalism. Yet, despite their importance, the effectiveness of these systems varies wildly across the planet. These gaps stem from structural differences between the different types of welfare regimes: the liberal, the social-democratic, the corporatist (Esping-Andersen, 1990, pp. 26-27) and the Mediterranean or "Southern model" (Ferrera, 1996, pp. 17–20).

Each of these welfare regimes institutionalizes a different approach to social protection and stratification. These differences highlight the need for a systematic study to better understand how each model operates. Consequently, this paper analyzes four representative European welfare models (Spain, the United Kingdom, Sweden, and Germany) to determine how public pension spending, economic development, and labor market fluctuations shape their redistributive capacity. This analysis relies on GDP per capita, the unemployment rate, and the Gini coefficient to ensure high data comparability across all variables. By using these standardized metrics, the study allows for a robust, long-term examination of the operational patterns unique to each welfare state.

The remainder of this paper is structured as follows. Section 2 reviews the existing literature on welfare regimes and redistribution. Section 3 sets out the hypotheses. Section 4 outlines the methodology. Section 5 presents the empirical results. Section 6 provides the concluding remarks.

2. Literature Review

In order to analyze the redistributive capacity of the welfare state, this study adopts the foundational framework established by Piketty (2014, p. 297) regarding the structural distinction between market inequality and disposable inequality. Market inequality reflects the primary distribution of income generated by economic activity before any government intervention, capturing raw labor market outcomes and employment fluctuations. Conversely, disposable inequality measures household income following public intervention via progressive taxation and monetary transfers, such as public pensions. By adopting this distinction, the analysis can evaluate how effectively social protection systems alter raw market outcomes. Ultimately, as Piketty notes, the modern social state acts as the primary engine of redistribution, utilizing taxation to fund universal services (2014, p. 528). Therefore, measuring the variance between market and disposable income captures the efficacy of public redistributive capacity.

However, treating the welfare state as a homogenous institution is problematic, as public intervention, protection levels, and market relations vary significantly across historical and political contexts. Grounded in this perspective, Esping-Andersen argues that contemporary welfare states do not constitute a linear continuum, but rather form three distinct regimes with qualitatively unique arrangements between the state, the market, and the family (1990, p. 26). Each regime is structured around a specific logic regarding social rights, social stratification, and social integration, ultimately leading to diverse impacts on inequality and social cohesion (1990, p. 3).

The liberal welfare state model, predominant in countries like the United Kingdom, is characterized by limited, residual public intervention. It relies primarily on means-tested assistance, modest universal transfers, or restricted social insurance, targeting benefits almost exclusively toward low-income groups while leaving the remaining population to rely on the market. The expansion of social rights is heavily constrained by a liberal work ethic that deliberately keeps benefits low and eligibility stringent to preserve labor market incentives (Esping-Andersen, 1990, p. 26). Complementarily, the state actively promotes market-based solutions by guaranteeing only a bare minimum threshold of protection or subsidizing private welfare options. This institutional design minimizes de-commodification, restricts social rights, and produces a dual stratification pattern. This pattern is characterized by a relative equality of poverty among public beneficiaries alongside highly differentiated, market-based protection for the majority, thereby reinforcing a stark social division between the two groups (Esping-Andersen, 1990, p. 27).

The social-democratic model, predominant in countries like Sweden, maximizes universalism and the de-commodification of social rights. Rather than tolerating a market-state dualization, this regime promotes an equality of the highest standards by offering benefits and services generous enough to remain attractive to the middle class. This model integrates all social groups into a single system where earnings-graduated protection limits market influence (Esping-Andersen, 1990, p. 27). Furthermore, this model pairs universal provision with policies of individual emancipation from both the market and the traditional family, preemptively socializing care costs. A defining feature is the institutional integration of welfare and labor, where the right to work holds equal status to the right to protection, making full employment a core condition for the model's fiscal sustainability (Esping-Andersen, 1990, p. 28).

The corporatist model, characteristic of countries like Germany, is built upon a historical corporatist-statist legacy adapted to modern class structures. Rather than pursuing active income redistribution, this regime prioritizes preserving existing status differentials, binding social rights directly to class positions and prior employment histories (Esping-Andersen, 1990, p. 27). Although the state acts as the primary provider and largely displaces the market, its heavy intervention has a limited redistributive impact due to this structural emphasis on maintaining established social hierarchies. Simultaneously, corporatist regimes are deeply influenced by the principle of subsidiarity, reinforcing a welfare model centered on the traditional family. Consequently, public care services remain underdeveloped, reserving state intervention strictly for when the protective capacity of the family is completely exhausted (Esping-Andersen, 1990, p. 27).

Another cornerstone of research in this field is Ferrera's (1996) work on the Mediterranean or "Southern model" of welfare, characteristic of countries like Spain. This regime is distinguished by a highly fragmented, polarized system of social protection where income maintenance is organized around occupational status. Consequently, monetary transfers (most notably pensions) heavily protect formal labor market insiders while leaving outsiders, such as the youth and precarious workers, with severe coverage gaps (pp. 18–31). While this occupational focus in cash transfers coexists with a universalist national health system, healthcare access remains complicated by regional inequalities and private provider presence. Furthermore, the model relies on structural familism, positioning the family as the primary safety net and shifting welfare costs to the domestic sphere. Finally, low state capacity and clientelistic practices frequently erode universalism, limiting the overall redistributive capacity of this welfare state configuration (Ferrera, 1996, pp. 18–31).

3. Research Hypotheses

The primary hypothesis of this study proposes that the redistributive capacity of pension systems varies both by welfare state model and by the income bracket analyzed. Generally, it is anticipated that reliance on pensions decreases progressively from the working classes toward the economic elite, as higher-income groups derive a larger share of their resources from capital gains and wealth, thereby reducing their dependence on public transfers. Consequently, it is hypothesized that pension expenditure will exert a greater redistributive effect on the working and middle classes than on the upper class and the economic elite.

Likewise, the unemployment rate is expected to hold greater relevance for the working and middle classes due to their heightened exposure to labor market fluctuations and the subsequent activation of welfare state automatic stabilizers. Conversely, economic growth (measured via GDP per capita) should maintain a baseline relationship with redistributive capacity across all social groups, though predictably weaker within higher strata given their lower relative dependence on the public system.

At a comparative level, the hypothesis maintains that Spain will exhibit the highest redistributive significance for pensions across most social classes, driven by the central weight of monetary transfers within the Mediterranean model described by Ferrera (1996). In the United Kingdom, a more limited relationship is expected, concentrated primarily within the working classes, consistent with the residual nature of the liberal model outlined by Esping-Andersen (1990). Germany is projected to display intermediate dependence, linked to the occupational and contributory logic of its corporatist model. Meanwhile, Sweden will likely demonstrate lower reliance on pensions due to the more universalist and multi-dimensional character of its social-democratic model, where redistribution relies on a broader configuration of public policies and social institutions.

4. Data and Methodology

4.1. Data Sources and Sample Selection

For this research, a combination of three international reference sources has been utilized: the OECD Social Expenditure Database (SOCX)¹, the World Inequality Database (WID)², and the World Bank.

While the WID constitutes one of the fundamental sources used by Piketty (2014, p. 32) to systematize the study of long-term inequality, the OECD Social Expenditure Database provides the necessary methodological rigor to harmonize public expenditure. Additionally, the logarithm of GDP per capita³ and the total unemployment rate⁴ are sourced from the World Bank to serve as macroeconomic control variables. Taken together, this data combination allows us to analyze the relationship between the budgetary effort allocated to old-age pensions and its outcomes in terms of distributive equity. All data were extracted and processed from official repositories between March and April 2026.

The study covers a longitudinal period of approximately four decades, from 1980 to 2021. The sample analyzes four countries that represent the welfare regime typologies established by Esping-Andersen and Ferrera: Spain (Mediterranean), the United Kingdom (Liberal), Sweden (Social-Democratic) and Germany (Corporatist).

4.2. Variable Definition

In the estimated model, the dependent variable is the redistributive capacity of the system, while the primary explanatory variable is public expenditure on old-age pensions.

The state's redistributive capacity is measured as the absolute difference between the Gini index before taxes and transfers (pre-tax) and the Gini index of disposable income (post-tax). This metric allows for a direct quantification of the redistributive effect of the tax and transfer system:

$$\text{Redistributive Capacity} = \text{Gini}_{\text{Pre-Tax}} - \text{Gini}_{\text{Post-Tax}}$$

The analysis opts to measure redistribution in Gini index points, as this absolute difference quantifies the state's redistributive capacity as a corrective agent for labor market disparities, ensuring baseline compatibility among countries with diverse economic structures. Conversely, expressing pension expenditure as a percentage of GDP harmonizes the fiscal effort of states regardless of the size of their economies.

To capture heterogeneity across the income distribution, the analysis is supplemented by a segmentation by income brackets, following the classification proposed by Thomas Piketty (2014, p. 274). This aims to evaluate whether the impact of pension expenditure

¹ OECD (2026). Social Expenditure Database (SOCX).

² World Inequality Lab (2026). World Inequality Database (WID).

³ World Bank (2026). "GDP per capita (constant 2015 US\$)".

⁴ World Bank (2026). "Unemployment, total (% of total labor force)".

varies across different social groups: P₀P₅₀ (Working class), P₅₀P₉₀ (Middle class), P₉₀P₁₀₀ (Upper class) and P₉₉P₁₀₀ (Economic elite).

4.3. Econometric Model

The methodological design of this research consists of a time-series analysis based on the estimation of linear regression models using Ordinary Least Squares (OLS), with all statistical analyses and regressions conducted in R. Crucially, the econometric design does not aim to establish causal micro-foundations, rather, it serves as an empirical approximation oriented toward identifying general trends of redistribution spanning four decades. Identifying these long-term trends allows the analysis to uncover the underlying redistributive mechanisms governing the system. Consequently, this approach captures how welfare structures interact with macroeconomic fluctuations to shift redistributive capacity over time. Mapping these trajectories allows this study to evaluate how contemporary trends have evolved since Esping-Andersen (1990). This provides a comparative benchmark to test whether classic welfare regimes still dictate redistributive outcomes amid modern economic pressures. The econometric specification is defined as follows:

$$\text{Redistributive Capacity}_t = \beta_0 + \beta_1 \text{Pensions}_t + \beta_2 \text{Unemployment}_t + \beta_3 \log(\text{GDP per Capita})_t + \varepsilon_t \quad (1)$$

Where the subscript t denotes the annual temporal dimension of the study, and the primary explanatory variable is public expenditure on old-age pensions. Within this framework, the control variables in equation (1) are not chosen at random, rather, they serve specific structural roles within the model.

The inclusion of the logarithm of GDP per capita serves a dual purpose. First, it acts as a baseline control for economic development, cleansing the primary pension variable from potential omitted variable bias. Second, it accounts for time-varying macroeconomic shocks and business cycle fluctuations. Crucially, Variance Inflation Factor (VIF) diagnostics revealed severe multicollinearity between a linear time trend (Year) and GDP per capita across all models, confirming that the latter functions partially as a proxy for time. Therefore, utilizing the natural logarithm of GDP per capita serves as a strategic choice to capture this secular trajectory and mitigate the risk of time-series spurious regressions without inflating variance. Consequently, whereas a linear year variable operates as a purely chronological indicator, the log of GDP per capita absorbs the temporal trend while adding economic information into the model.

Similarly, the unemployment rate is integrated to capture labor market dynamics and macroeconomic shocks. Because unemployment directly exacerbates market inequality before taxes and transfers, including this variable allows the model to test how the different welfare state regimes respond to labor market fluctuations.

The operationalization of these variables ensures standardized scaling in the model. While the unemployment rate is naturally bounded as a percentage of the total labor force, applying the natural logarithm to GDP per capita transforms the absolute dollar values into relative percentage changes. This scaling prevents the differences in country sizes and currencies from distorting the OLS estimation, ensuring that the estimated coefficients are standardized and comparable.

Finally, the Breusch–Pagan test revealed heteroscedasticity in approximately half of the estimated models. To maintain methodological consistency and ensure cross-regime comparability, robust standard errors (HC1) were systematically applied across all specifications. This conservative correction guarantees that the calculated p-values and the statistical significance of the β coefficients remain unbiased, regardless of model-specific error variance structures.

4.4. Methodological and Econometric Limitations

The empirical model utilized in this research presents several limitations stemming from both the inherent nature of time-series data and the institutional complexity of the analyzed welfare regimes. Consequently, the results must be interpreted with caution and strictly in terms of statistical association.

First, this study does not employ a panel data model, instead, it conducts independent time-series analyses for each country and income bracket. This approach limits the capacity to fully control for unobserved country-specific factors and to compare cross-regime structural dynamics in a completely homogeneous manner. Furthermore, as noted in the previous section, while utilizing the natural logarithm of GDP per capita controls for the macro-temporal trend, this specification cannot entirely eliminate the presence of unobserved, time-varying institutional dynamics or policy shocks over a forty-year period.

Second, the model is subject to potential endogeneity concerns. Variables such as public pension expenditure, unemployment rates, macroeconomic growth, and redistributive capacity itself may exert simultaneous, bidirectional influences on one another. Due to the absence of robust instrumental variables suitable for all analyzed countries and periods, the estimated coefficients must be interpreted primarily as long-term correlations rather than strict, one-way causal relationships.

Finally, a nation's true redistributive capacity depends on an institutional architecture that is far more complex than what can be captured by aggregated expenditure metrics. Structural factors, such as the tax framework, active labor market policies or public service provision are not fully accounted for in the baseline formula. Therefore, the conclusions of this study should be understood as an empirical approximation oriented toward identifying general macro-structural trends of redistribution, rather than as a definitive causal proof of the mechanisms underlying each welfare state model.

5. Results

This chapter presents and discusses the empirical findings obtained from the Ordinary Least Squares (OLS) estimations across the four analyzed welfare regimes. To provide a structured analysis, the evidence is organized sequentially by country to reflect distinct institutional archetypes: Spain (Mediterranean), the United Kingdom (Liberal), Sweden (Social-Democratic), and Germany (Corporatist).

For each national case study, the empirical evidence is evaluated through a stratified, multi-level approach. The analysis begins with the national aggregate to establish the macro-structural trends. Subsequently, the model is systematically broken down across the income distribution using the Piketty framework, progressing upward through the socioeconomic hierarchy: from the working class (P_0P_{50}), to the middle class ($P_{50}P_{90}$), the upper class ($P_{90}P_{100}$), and finally, the economic elite ($P_{99}P_{100}$).

5.1. Spain

5.1.1. Spain: The National Aggregate

The empirical estimations presented in Table 1 reveal several key structural trends shaping Spain's redistributive capacity.

First, public pension expenditure exhibits a positive relationship that is significantly associated with redistributive capacity at the 5% level. This result suggests that pension spending is positively associated with redistributive capacity and may function as an important redistributive mechanism. The finding provides evidence that expanding these transfers is associated with an enhanced capacity of the welfare state to correct market-generated inequalities.

Conversely, the unemployment rate exhibits a negative relationship but yields no statistical significance. This result indicates a lack of meaningful correlation between short-term labor market fluctuations and the corrective capacity of the Spanish welfare state.

Meanwhile, economic development (captured by the log of GDP per capita) exhibits a positive relationship that is highly significant at the 1% level. This result suggests that sustained economic growth contributes to greater distributive equity. In practical terms, this finding suggests that a wealthier and more developed economy generates the expanded fiscal space and structural flexibility required for welfare mechanisms to correct market-generated inequalities.

In short, the evidence for Spain suggests that pension expenditure and economic development are positively associated with redistributive capacity, while the unemployment rate remains statistically insignificant.

5.1.2. Spain: The Working Class

The empirical estimations presented in Table 2 reveal several key structural trends shaping the redistributive capacity within Spain's working class (P₀P₅₀).

First, public pension expenditure exhibits a negative relationship that is significantly associated with redistributive capacity at the 5% level. This result suggests that an increase in pension spending does not necessarily translate into a greater correction of market-generated inequalities and may instead be associated with a lower redistributive capacity within the welfare state for this specific socioeconomic group. One possible interpretation is that a substantial share of this expenditure proportionally benefits groups outside the lowest income strata, potentially crowding out more targeted redistributive mechanisms. Another plausible explanation is that expanding pension expenditure requires additional financing through taxation or social security contributions, which may fall disproportionately on working- and lower-income sectors. In this regard, the net redistributive effect of the system may be reduced for the working class if the fiscal burden associated with funding pensions partially offsets the benefits received (López Laborda, Marín and Onrubia, 2022, pp. 16-25).⁵

Conversely, the unemployment rate exhibits a negative relationship but yields no statistical significance. This result indicates a lack of meaningful correlation between labor market fluctuations and redistributive capacity for the Spanish working class.

Meanwhile, economic development (captured by the log of GDP per capita) exhibits a negative relationship that is highly significant at the 1% level. This result suggests that sustained economic growth does not necessarily expand redistributive capacity in favor of lower-income groups. In practical terms, this finding suggests that a wealthier economy does not automatically guarantee greater redistribution toward the lowest income strata. This pattern may reflect an automatic stabilization effect, whereby improvements in market conditions reduce the baseline need for social transfers, an outcome that the model captures as a reduced corrective effort. Alternatively, it may indicate a composition effect in which economic gains are more strongly reflected in contributory programs or policy reforms that primarily benefit other social groups (Devesa, Doménech, and Meneu, 2025, pp.2-6).⁶ It is also possible that economic development has not been accompanied by a proportional expansion of redistributive institutions targeted at the working class.

In short, the evidence for the working class in Spain suggests that pension expenditure and economic development are negatively associated with redistributive capacity, while the unemployment rate remains statistically insignificant.

⁵ As highlighted by López Laborda, Marín, and Onrubia (2022), their findings confirm that while public retirement benefits comprise the largest share of monetary redistribution, the financing mechanisms fall regressively on the active labor income of lower-income cohorts, thereby offsetting the net benefits received by the P₀P₅₀ bracket.

⁶ As highlighted by Devesa, Doménech, and Meneu (2025), the current pension system runs a contributory deficit of 2% of GDP, which constrains the marginal fiscal space that could otherwise be targeted toward progressive, non-contributory welfare programs designed to alleviate working-class market inequality.

5.1.3. Spain: The Middle Class

The empirical estimations presented in Table 3 reveal several key structural trends shaping the redistributive capacity within Spain's middle class ($P_{50}P_{90}$).

First, public pension expenditure exhibits a positive relationship that is highly significant at the 1% level. This result suggests that pension spending is positively associated with redistributive capacity and may function as an important redistributive mechanism. The finding provides strong evidence that expanding these transfers enhances the effectiveness of the welfare state in correcting market-generated inequalities within this socioeconomic stratum. The high degree of statistical significance further indicates that middle-income groups are particularly sensitive to pension policy as a redistributive instrument, highlighting the structural role that these transfers play within this segment of society.

Conversely, the unemployment rate exhibits a negative relationship but yields no statistical significance. This result indicates a lack of meaningful correlation between labor market fluctuations and redistributive capacity for the Spanish middle class.

Meanwhile, economic development (captured by the log of GDP per capita) exhibits a positive relationship that is marginally significant at the 10% level. This result suggests that sustained economic growth contributes to greater distributive equity. In practical terms, this finding suggests that a wealthier and more developed economy generates the expanded fiscal space and structural flexibility required for welfare mechanisms to correct market-generated disparities.

In short, the evidence for the middle class in Spain suggests that pension expenditure and economic development are positively associated with redistributive capacity, while the unemployment rate remains statistically insignificant.

5.1.4. Spain: The Upper Class

The empirical estimations presented in Table 4 reveal several key structural trends shaping the redistributive capacity within Spain's top-income bracket ($P_{90}P_{100}$).

First, public pension expenditure exhibits a positive relationship with redistributive capacity, though it yields no statistical significance. This result suggests that increases in pension spending do not maintain a systematic relationship with the redistributive capacity directed toward the Spanish upper class.

Conversely, the unemployment rate exhibits a negative relationship but yields no statistical significance. This result indicates a lack of meaningful correlation between labor market fluctuations and redistributive capacity for the Spanish upper class.

Meanwhile, economic development (captured by the log of GDP per capita) exhibits a positive relationship that is highly significant at the 1% level. This result suggests that sustained economic growth contributes to greater distributive equity. In practical terms, this finding suggests that a wealthier and more developed economy generates the expanded fiscal space and structural flexibility required for welfare mechanisms to correct market-generated disparities.

In short, the evidence for the upper class in Spain suggests that economic development is positively associated with redistributive capacity, while pension expenditure and the unemployment rate remain statistically insignificant.

5.1.5. Spain: The Economic Elite

The empirical estimations presented in Table 5 reveal several key structural trends shaping the redistributive capacity within Spain's economic elite (P₉₉P₁₀₀).

First, public pension expenditure exhibits a positive relationship that is significantly associated with redistributive capacity at the 5% level. This result suggests that pension spending is positively associated with redistributive capacity and may function as an important redistributive mechanism even within the highest income strata. The finding provides evidence that expanding these transfers is associated with an enhanced capacity of the welfare state to correct market-generated inequalities. Nevertheless, this outcome appears to contradict both Piketty's theoretical perspective and the central hypothesis of this study, according to which pension expenditure should not play a prominent role in reducing inequality within the top income percentiles. A plausible explanation is that high-income groups actively engage with the system's contributory architecture. Through higher contribution bases and access to maximum benefit levels, alongside other systemic design features (Bellés-Obrero et al., 2026, pp.28-29). This pattern may reflect a structural characteristic of the Spanish pension system whereby a portion of aggregate transfers accrues to high-income households, a dynamic that could be further reinforced by systemic disparities in life expectancy (Devesa and Doménech, 2023, p.211). Consequently, pension expenditure may operate not only as a redistributive mechanism directed toward less advantaged groups but also as an income-stabilization instrument for the most economically privileged sectors.⁷

Conversely, the unemployment rate exhibits a negative relationship but yields no statistical significance. This result indicates a lack of meaningful correlation between labor market fluctuations and redistributive capacity for the Spanish economic elite.

Meanwhile, economic development (captured by the log of GDP per capita) exhibits a positive relationship that is highly significant at the 1% level. This result suggests that sustained economic growth contributes to greater distributive equity. In practical terms, this finding suggests that a wealthier and more developed economy generates the expanded fiscal space and structural flexibility required for welfare mechanisms to correct market-generated disparities.

In short, the evidence for the economic elite in Spain suggests that pension expenditure and economic development are positively associated with redistributive capacity, while the unemployment rate remains statistically insignificant.

⁷ This unexpected positive correlation finds strong empirical proof in recent literature evaluating Spanish social security parameters. Bellés-Obrero et al. (2026) document a stark income gradient in the distribution of Spanish pension wealth, demonstrating that historical parametric reforms have disproportionately benefited the highest income quartile. Furthermore, as highlighted by Devesa and Doménech (2023), this trend is amplified by the regressive nature of mortality, as high-income cohorts maintain a longer life expectancy and consequently draw public payouts across a more extended retirement duration.

5.2. The United Kingdom

5.2.1. The United Kingdom: The National Aggregate

The empirical estimations presented in Table 6 reveal several key structural trends shaping the redistributive capacity at the aggregate level within the United Kingdom.

First, public pension expenditure exhibits a positive relationship that is significantly associated with redistributive capacity at the 5% level. This result suggests that pension spending is positively associated with redistributive capacity and may function as an important redistributive mechanism. The finding provides evidence that expanding these transfers enhances the effectiveness of the welfare state in correcting market-generated inequalities.

Conversely, the unemployment rate exhibits a positive relationship but yields no statistical significance. This result indicates a lack of meaningful correlation between short-term labor market fluctuations and the corrective capacity of the British welfare state.

Meanwhile, economic development (captured by the log of GDP per capita) exhibits a positive relationship that is highly significant at the 1% level. This result suggests that sustained economic growth contributes to greater distributive equity. In practical terms, this finding suggests that a wealthier and more developed economy generates the expanded fiscal space and structural flexibility required for welfare mechanisms to correct market-generated disparities.

In short, the evidence for the United Kingdom suggests that pension expenditure and economic development are positively associated with redistributive capacity, while the unemployment rate remains statistically insignificant.

5.2.2. The United Kingdom: The Working Class

The empirical estimations presented in Table 7 reveal several key structural trends shaping the redistributive capacity within the United Kingdom's working class (P_0P_{50}).

First, public pension expenditure exhibits a negative relationship that is significantly associated with redistributive capacity at the 5% level. This result suggests that an expansion in pension spending does not necessarily translate into a greater correction of market-generated inequalities and may instead be associated with a lower redistributive capacity of the welfare state regarding this specific socioeconomic group. One plausible interpretation is a regressive financing effect. Financing a pension expansion requires public funding through taxation that partially offsets the net benefits received by working class households. This offsetting effect occurs because the vast majority of UK state pension outlays reflect a lifetime intra-personal transfer funded by structurally regressive National Insurance Contributions.⁸ Consequently, this financing structure may partially offset the redistributive gains generated by pension expenditure for working-class households, reducing the corrective capacity captured by the model (Crawford, Keynes and Tetlow, 2014, pp.23-26).

Conversely, the unemployment rate exhibits a negative relationship but yields no statistical significance. This result indicates a lack of meaningful correlation between short-term labor market fluctuations and redistributive capacity for the British working class.

Meanwhile, economic development (captured by the log of GDP per capita) exhibits a negative relationship that is highly significant at the 1% level. This result suggests that sustained economic growth does not necessarily expand redistributive capacity in favor of the working class. In practical terms, it indicates that a more developed economy does not automatically guarantee a more progressive distribution toward lower-income groups.

One plausible interpretation is that the model captures a budgetary composition effect whereby fiscal resources are increasingly allocated toward expenditure categories that generate a lower redistributive impact on working-age, lower-income households. This structural asymmetry is often identified as a consequence of contemporary British fiscal austerity, where support for working-age households has faced tighter fiscal constraints (Pearce and Kelly, 2026, pp.31-33).

In short, the evidence for the working class in the United Kingdom suggests that both increased pension spending and macroeconomic growth maintain a negative relationship with redistributive capacity, while the unemployment rate remains statistically insignificant.

⁸ See Crawford, Innes, and O'Dea (2014) for an empirical decomposition proving that approximately 80% of UK state pension expenditure functions as an intra-personal lifetime smoothing mechanism financed via the payroll tax architecture, rather than vertical inter-personal wealth redistribution.

5.2.3. The United Kingdom: The Middle Class

The empirical estimations presented in Table 8 reveal several key structural trends shaping the redistributive capacity within the United Kingdom's middle class (P₅₀P₉₀).

First, public pension expenditure exhibits a positive relationship but yields no statistical significance. This result suggests that increases in pension spending do not maintain a systematic relationship with the redistributive capacity directed toward the British middle class.

Conversely, the unemployment rate exhibits a negative relationship but yields no statistical significance. This result indicates a lack of meaningful correlation between short-term labor market fluctuations and redistributive capacity for the British middle class.

Meanwhile, economic development (captured by the log of GDP per capita) exhibits a negative relationship that is highly significant at the 5% level. This result suggests that sustained economic growth does not necessarily expand redistributive capacity in favor of the middle class. In practical terms, it indicates that a more developed economy does not automatically guarantee greater distributive capacity toward middle-income groups. A plausible explanation lies in the institutional architecture of the British welfare state. The Beveridgean model relies heavily on means-tested benefits and flat-rate transfer schemes. As economic growth raises market incomes within the P50–P90 segment, household eligibility for income-contingent programs is progressively reduced through benefit withdrawal mechanisms. Consequently, improvements in economic performance may mechanically reduce the volume of transfers directed toward middle-income households. Because many British welfare benefits do not scale proportionally with earnings, periods of sustained economic growth may generate a contraction in the relative intensity of redistribution directed toward the middle class, even as overall living standards improve (Gardiner, 2019, p.33).

In short, the evidence for the middle class in the United Kingdom suggests that economic development is negatively associated with redistributive capacity, while pension expenditure and the unemployment rate remain statistically insignificant.

5.2.4. The United Kingdom: The Upper Class

The estimations presented in Table 9 reveal several structural trends shaping the redistributive capacity within the United Kingdom's upper class (P₉₀P₁₀₀).

First, public pension expenditure exhibits a positive relationship but yields no statistical significance. This result suggests that increases in pension spending do not maintain a systematic relationship with the redistributive capacity directed toward the British upper class. One plausible explanation is that higher-income groups exhibit a lower relative dependence on public transfers due to their greater capacity to generate market income and accumulate private wealth.

Conversely, the unemployment rate exhibits a negative relationship but yields no statistical significance. This result indicates a lack of meaningful correlation between short-term labor market fluctuations and redistributive capacity for the British upper class.

Meanwhile, economic development (captured by the log of GDP per capita) exhibits a positive relationship that is highly significant at the 1% level. This result suggests that sustained economic growth contributes to greater distributive equity. In practical terms, this finding suggests that a wealthier and more developed economy generates the expanded fiscal space and structural flexibility required for welfare mechanisms to correct market-generated disparities.

In short, the evidence for the upper class in the United Kingdom suggests that economic development is positively associated with redistributive capacity, while pension expenditure and the unemployment rate remain statistically insignificant. The absence of statistical significance may suggest that redistributive mechanisms exert a more limited and less systematic influence on higher-income groups within the British welfare state.

5.2.5. The United Kingdom: The Economic Elite

The estimations presented in Table 10 reveal several structural trends shaping the redistributive capacity within the United Kingdom's economic elite ($P_{99}P_{100}$).

First, public pension expenditure exhibits a positive relationship but yields no statistical significance. This result suggests that increases in pension spending do not maintain a systematic relationship with the redistributive capacity directed toward the economic elite. In contrast to the Spanish case, the absence of statistical significance is broadly consistent with Piketty's (2014) expectation that top-income groups derive a growing share of their resources from capital ownership rather than public transfers. As a result, changes in welfare-state expenditure may have a comparatively limited impact on the redistributive outcomes observed among the highest income groups.

Conversely, the unemployment rate exhibits a negative relationship but yields no statistical significance. This result indicates a lack of meaningful correlation between short-term labor market fluctuations and redistributive capacity for the British economic elite.

Meanwhile, economic development (captured by the log of GDP per capita) exhibits a positive relationship that is highly significant at the 1% level. This result suggests that sustained economic growth contributes to greater distributive equity. In practical terms, this finding suggests that a wealthier and more developed economy generates the expanded fiscal space and structural flexibility required for welfare mechanisms to correct market-generated disparities.

In short, the evidence for the economic elite in the United Kingdom suggests that economic development is positively associated with redistributive capacity, while pension expenditure and the unemployment rate remain statistically insignificant. The absence of statistical significance may suggest that redistributive mechanisms exert a more limited and less systematic influence on higher-income groups within the British welfare state.

5.3 Sweden

5.3.1. Sweden: The National Aggregate

The empirical estimations presented in Table 11 reveal several key structural trends shaping the redistributive capacity at the aggregate level within Sweden.

First, public pension expenditure exhibits a negative relationship with redistributive capacity, though it yields no statistical significance. This result suggests that increases in pension spending do not maintain a systematic relationship with Sweden's overall redistributive capacity.

Conversely, the unemployment rate exhibits a positive relationship that is significantly associated with redistributive capacity at the 5% level. This result indicates a meaningful relationship between labor market conditions and the corrective capacity of the Swedish welfare state. One possible interpretation is that increases in unemployment activate automatic stabilizers and social protection mechanisms that contribute to mitigating market-generated inequalities.

Meanwhile, economic development (captured by the log of GDP per capita) exhibits a negative relationship that is highly significant at the 1% level. This result suggests that sustained economic growth does not necessarily expand redistributive capacity at the aggregate level. In practical terms, it indicates that a wealthier and more developed economy may reduce the relative intensity of corrective welfare interventions. One plausible explanation is that this pattern reflects the profound structural reforms implemented during the 1990s, which substantially altered the architecture of the Swedish welfare state. The increasing reliance on means-tested benefits and conditional transfers, together with reforms to the tax system, may have introduced institutional dynamics that affect how redistribution is captured by the model (Thakur et al, 2003, pp. 15-20, 77-80).⁹ Consequently, these reforms may partially explain why sustained economic growth is associated with a negative coefficient, as the model may capture a lower relative intensity of redistributive intervention despite the continued operation of welfare-state mechanisms

In short, the evidence for Sweden suggests that the unemployment rate is positively associated with redistributive capacity, economic development is negatively associated with redistributive capacity, while pension expenditure remains statistically insignificant.

⁹ For a comprehensive analysis of these structural shifts, see Thakur et al. (2003). The 1991 tax restructuring introduced a dual tax system, which altered the revenue base (pp. 15–16) and directly impacted the state's actual redistributive capacity regarding net income (pp. 77–80). Furthermore, post-crisis fiscal consolidation led to drastic cuts in universal household transfers (pp. 17–20), thereby accelerating the shift toward targeted, resource-tested assistance.

5.3.2. Sweden: The Working Class

The estimations presented in Table 12 reveal several structural trends shaping the redistributive capacity within Sweden's working class (P_0P_{50}).

First, public pension expenditure exhibits a negative relationship with redistributive capacity, though it yields no statistical significance. This result suggests that increases in pension spending do not maintain a systematic relationship with the redistributive capacity directed toward the Swedish working class.

Conversely, the unemployment rate exhibits a positive relationship but yields no statistical significance. This result indicates a lack of meaningful correlation between labor market fluctuations and redistributive capacity for the Swedish working class.

Meanwhile, economic development (captured by the log of GDP per capita) exhibits a positive relationship that is highly significant at the 1% level. This result suggests that sustained economic growth contributes to greater distributive equity for lower-income groups. In practical terms, this finding suggests that a wealthier and more developed economy generates the expanded fiscal space and structural flexibility required for welfare mechanisms to correct market-generated disparities affecting this socioeconomic stratum.

In short, the evidence for the working class in Sweden suggests that economic development is positively associated with redistributive capacity, while pension expenditure and the unemployment rate remain statistically insignificant.

5.3.3. Sweden: The Middle Class

The estimations presented in Table 13 reveal several structural trends shaping the redistributive capacity within Sweden's middle class ($P_{50}P_{90}$).

First, public pension expenditure exhibits a positive relationship that is highly significant at the 1% level. This result suggests that pension spending is positively associated with redistributive capacity and may function as an important redistributive mechanism. The finding provides strong evidence that expanding these transfers enhances the effectiveness of the welfare state in correcting market-generated inequalities within this socioeconomic stratum. The high degree of statistical significance further indicates that middle-income groups are particularly sensitive to pension policy as a redistributive instrument, highlighting the structural role that these transfers play within this segment of society.

Conversely, the unemployment rate exhibits a negative relationship that is highly significant at the 1% level. This result suggests that increases in unemployment are associated with a reduction in redistributive capacity for the Swedish middle class. One possible interpretation is that deteriorating labor market conditions reduce the fiscal resources available to support redistributive mechanisms while simultaneously increasing demands on welfare expenditure directed toward more vulnerable groups. A complementary explanation is that the Swedish welfare model relies heavily on high levels of labor-force participation and tax compliance among middle-income households. Consequently, increases in unemployment within this segment may reduce both the fiscal resources available to finance redistribution and the overall effectiveness of welfare-state mechanisms, thereby contributing to the negative relationship observed in the model.

Meanwhile, the indicator of wealth per inhabitant (GDP per capita) exhibits a negative relationship that is highly significant at the 1% level, suggesting that sustained economic growth is associated with a lower redistributive intensity toward this social class. In practical terms, this indicates that a wealthier and more developed economy does not necessarily imply a proportional expansion of redistributive effort. As discussed in the aggregate analysis, one plausible explanation lies in the structural reforms implemented during the 1990s, which substantially altered the architecture of the Swedish welfare state (Thakur et al, 2003, pp.15-20, 77-80). For the middle class, the increasing reliance on means-tested benefits and conditional transfers may have reduced access to redistributive mechanisms during periods of economic expansion, as improvements in market incomes limit eligibility for public support. Consequently, these institutional dynamics may partially explain the negative coefficient observed for economic development, as the model captures a lower relative intensity of redistribution directed toward middle-income households.

In short, the evidence for the middle class in Sweden suggests that pension expenditure is positively associated with redistributive capacity, while economic development and the unemployment rate are negatively associated with redistributive capacity.

5.3.4. Sweden: The Upper Class

The estimations presented in Table 14 reveal several structural trends shaping the redistributive capacity within Sweden's upper class ($P_{90}P_{100}$).

First, public pension expenditure exhibits a negative relationship that is significantly associated with redistributive capacity at the 5% level. This result suggests that increases in pension spending are associated with lower redistributive capacity regarding the Swedish upper class. One plausible explanation lies in the institutional design of the Swedish pension system, which directs a substantial share of additional expenditure toward lower- and middle-income groups while simultaneously imposing earnings ceilings on pensionable income (Klevmarken, 2002, pp.2-4).¹⁰ As a result, the redistributive benefits generated by higher pension expenditure are concentrated disproportionately below the upper segments of the income distribution, reducing the relative redistributive intensity observed for higher-income households.

Conversely, the unemployment rate exhibits a positive relationship that is highly significant at the 1% level. This result indicates a meaningful relationship between labor market conditions and redistributive capacity for the Swedish upper class. One possible interpretation is that periods of higher unemployment activate broader redistributive mechanisms that indirectly affect the distribution of income across the upper segments of society.

Meanwhile, economic development (captured by the log of GDP per capita) exhibits a negative relationship but yields no statistical significance. This result suggests that sustained economic growth does not maintain a systematic relationship with redistributive capacity for the Swedish upper class.

In short, the evidence for the upper class in Sweden suggests that unemployment is positively associated with redistributive capacity and pension expenditure is negatively associated with redistributive capacity, while economic development remains statistically insignificant.

¹⁰ Klevmarken (2002, p. 3) details that the reform established an 18.5 percent contribution rate subject to an inflation-indexed ceiling, which stood at 282,750 SEK (approximately 31,000 ecus) in 2001. Upon surpassing this regulatory threshold, middle-to-high-income earners receive the maximum eligible benefit.

5.3.5. Sweden: The Economic Elite

The estimations presented in Table 15 reveal several structural trends shaping the redistributive capacity within Sweden's economic elite (P₉₉P₁₀₀).

First, public pension expenditure exhibits a negative relationship that is highly significant at the 1% level. This result suggests that increases in pension spending are associated with lower redistributive capacity regarding the Swedish economic elite. This pattern reinforces the institutional dynamics already observed within the broader upper class (P₉₀ P₁₀₀). One plausible explanation is that the earnings and contribution ceilings embedded within the Swedish pension system limit the extent to which additional pension expenditure benefits the highest income strata (Klevmarken, 2002, pp.2-4). Consequently, increases in pension spending are likely to generate proportionally greater gains for lower- and middle-income groups, thereby reducing the relative redistributive intensity observed among the economic elite.

Conversely, the unemployment rate exhibits a positive relationship that is highly significant at the 1% level. This result indicates a meaningful relationship between labor market conditions and redistributive capacity for the Swedish economic elite. One possible interpretation is that increases in unemployment activate welfare mechanisms that alter the distributional balance between the top income groups and the rest of society.

Meanwhile, economic development (captured by the log of GDP per capita) exhibits a positive relationship but yields no statistical significance. This result suggests that sustained economic growth does not maintain a systematic relationship with redistributive capacity for the Swedish economic elite. A plausible explanation is that the income and wealth of the top percentile are more strongly influenced by financial markets and international capital dynamics than by domestic economic growth.

In short, the evidence for the economic elite in Sweden suggests that unemployment is positively associated with redistributive capacity and pension expenditure is negatively associated with redistributive capacity, while economic development remains statistically insignificant.

5.4. Germany

5.4.1. Germany: The National Aggregate

The empirical estimations presented in Table 16 reveal several key structural trends shaping Germany's redistributive capacity.

First, public pension expenditure exhibits a positive relationship with redistributive capacity, though it yields no statistical significance. This result suggests that increases in pension spending do not maintain a systematic relationship with the corrective capacity of the German welfare state.

Similarly, the unemployment rate exhibits a negative relationship but yields no statistical significance. This result indicates a lack of meaningful correlation between labor market fluctuations and Germany's redistributive capacity.

Meanwhile, economic development (captured by the log of GDP per capita) exhibits a positive relationship that is highly significant at the 1% level. This result suggests that sustained economic growth contributes to greater distributive equity. In practical terms, this finding suggests that a wealthier and more developed economy generates the expanded fiscal space and structural flexibility required for welfare mechanisms to correct market-generated disparities.

In short, the evidence for Germany suggests that economic development is positively associated with redistributive capacity, while pension expenditure and the unemployment rate remain statistically insignificant.

5.4.2. Germany: The Working Class

The estimations presented in Table 17 reveal several structural trends shaping the redistributive capacity within Germany's working class (P_0P_{50}).

First, public pension expenditure exhibits a positive relationship but yields no statistical significance. This result suggests that increases in pension spending do not maintain a systematic relationship with the redistributive capacity directed toward the German working class.

Similarly, the unemployment rate exhibits a negative relationship but yields no statistical significance. This result indicates a lack of meaningful correlation between labor market fluctuations and redistributive capacity for the German working class.

Meanwhile, economic development (captured by the log of GDP per capita) exhibits a negative relationship that is highly significant at the 1% level. This result suggests that sustained economic growth does not necessarily expand redistributive capacity in favor of lower-income groups. In practical terms, it indicates that a wealthier economy does not automatically guarantee greater redistribution toward the working class. It may indicate a composition effect in which the gains generated by economic expansion are distributed disproportionately across other socioeconomic groups. Existing research on Germany further suggests that periods of economic growth may widen market-income dispersion more rapidly than contribution-based social insurance mechanisms can offset it, thereby reducing the relative intensity of redistribution directed toward lower-income households (Biewen et al., 2024, pp.330-331).¹¹

In short, the evidence for the working class in Germany suggests that economic development is negatively associated with redistributive capacity, while pension expenditure and the unemployment rate remain statistically insignificant.

¹¹ See Blömer et al. (2024, pp. 339–340) for a detailed analysis of how the post-2005 labor market recovery automatically tapered means-tested transfers relative to total market income. For the interplay between market wage dispersion and the shrinking tax-benefit absorption capacity, see *ibid.*, pp. 331–332, 340

5.4.3. Germany: The Middle Class

The estimates presented in Table 18 allow for the identification of several structural trends regarding the redistributive capacity of Germany's middle class (P₅₀P₉₀).

First, public pension expenditure exhibits a positive relationship but yields no statistical significance. This result suggests that increases in pension spending do not maintain a systematic relationship with the redistributive capacity directed toward the German middle class.

Conversely, the unemployment rate exhibits a positive relationship that is significantly associated with redistributive capacity at the 5% level. This result suggests that labor market deterioration activates automatic stabilizers and social protection mechanisms that increase the corrective role of the welfare state for middle-income households.

Meanwhile, economic development (captured by the log of GDP per capita) exhibits a negative relationship that is highly significant at the 1% level. This result suggests that sustained economic growth does not necessarily expand redistributive capacity in favor of the middle class. In practical terms, it indicates that a more developed economy does not automatically guarantee greater redistribution toward middle-income groups. One plausible explanation lies in the operation of automatic stabilizers and fiscal drag mechanisms within the German welfare state. As economic growth increases market-generated incomes, middle-income households may experience upward income mobility, moving into higher progressive tax brackets. Consequently, periods of sustained economic expansion may reduce the relative intensity of redistribution directed toward the middle class, even as absolute income levels continue to rise (Immervoll, H., 2005, pp. 50-52).¹²

In short, the evidence for the middle class in Germany suggests that the unemployment rate is positively associated with redistributive capacity and economic development is negatively associated with redistributive capacity, while pension expenditure remains statistically insignificant.

¹² See H. Immervoll (2005, pp. 50–52), where it is mathematically demonstrated that the lack of indexation in Germany not only reduced the progressivity of the income tax due to the fiscal drag effect, but also ultimately eroded the disposable income of middle-income households.

5.4.4. Germany: The Upper Class

The estimates presented in Table 19 allow for the identification of several structural trends regarding the redistributive capacity of Germany's upper class ($P_{90}P_{100}$).

First, public pension expenditure exhibits a negative relationship but yields no statistical significance. This result suggests that increases in pension spending do not maintain a systematic relationship with the redistributive capacity directed toward the German upper class.

Conversely, the unemployment rate exhibits a negative relationship that is highly significant at the 1% level. This result suggests that labor market deterioration is associated with a reduction in redistributive capacity for higher-income groups. One plausible explanation lies in the institutional design of Germany's Bismarckian social insurance system. Unemployment benefits are constrained by statutory contribution ceilings, limiting the extent to which income replacement mechanisms protect higher earners during labor market downturns. At the same time, increases in unemployment may redirect public resources toward lower-income households through automatic stabilizers, reducing the relative redistributive intensity directed toward upper-income groups (OECD, 2025, pp. 6-8).¹³

Meanwhile, economic development (captured by the log of GDP per capita) exhibits a positive relationship that is highly significant at the 1% level. This result suggests that sustained economic growth contributes to greater distributive equity. In practical terms, this finding suggests that a wealthier and more developed economy generates the expanded fiscal space and structural flexibility required for welfare mechanisms to correct market-generated disparities.

In short, the evidence for the upper class in Germany suggests that economic development is positively associated with redistributive capacity and the unemployment rate is negatively associated with redistributive capacity, while pension expenditure remains statistically insignificant.

¹³ See OECD (2025, pp. 6–8), where it is mathematically demonstrated that the contribution assessment ceiling (Beitragsbemessungsgrenze) not only caps the tax base for social security contributions, but also structurally limits the maximum Arbeitslosengeld payout, ultimately preventing the public safety net from maintaining the prior consumption levels of top-earning households.

5.4.5. Germany: The Economic Elite

The empirical estimations presented in Table 20 reveal several key structural trends shaping the redistributive capacity within Germany's economic elite ($P_{99}P_{100}$).

First, public pension expenditure exhibits a negative relationship but yields no statistical significance. This result suggests that increases in pension spending do not maintain a systematic relationship with the redistributive capacity directed toward Germany's economic elite.

Conversely, the unemployment rate exhibits a negative relationship that is highly significant at the 1% level. This result suggests that labor market deterioration is associated with a reduction in redistributive capacity for the highest income strata. This pattern mirrors the relationship observed for the broader upper class and may reflect the institutional limits of Germany's contribution-based welfare architecture. Because unemployment insurance replacement rates are constrained by contribution ceilings, increases in unemployment provide limited income protection to top earners. Simultaneously, welfare resources are increasingly directed toward lower-income households through automatic stabilizers, reducing the relative redistributive intensity associated with the economic elite.

Meanwhile, economic development (captured by the log of GDP per capita) exhibits a positive relationship that is highly significant at the 1% level. This result suggests that sustained economic growth contributes to greater distributive equity. In practical terms, this finding suggests that a wealthier and more developed economy generates the expanded fiscal space and structural flexibility required for welfare mechanisms to correct market-generated disparities.

In short, the evidence for the economic elite in Germany suggests that economic development is positively associated with redistributive capacity and the unemployment rate is negatively associated with redistributive capacity, while pension expenditure remains statistically insignificant.

6. Discussion and Conclusion

To situate the results within the broader framework of public economics, this section evaluates Spain, the United Kingdom, Sweden, and Germany against the welfare-state typologies proposed by Esping-Andersen and Ferrera. It concludes with a comparative discussion and a general synthesis of the study's main findings and implications.

6.1 Conclusion: The Spanish Case

The empirical evidence for Spain suggests that the redistributive capacity of the welfare state varies considerably across social strata, reflecting several institutional characteristics associated with the Mediterranean welfare regime identified by Ferrera (1996). At the aggregate level, both pension expenditure and economic development are positively associated with redistributive capacity, while the unemployment rate remains statistically insignificant. This pattern indicates that redistribution in Spain relies primarily on contributory social protection mechanisms and established transfer programs, particularly pensions, rather than on labor market fluctuations.

However, the class-specific analysis reveals a more differentiated pattern. Within the working class (P0–P50), both pension expenditure and economic development display a negative relationship with redistributive capacity. This finding suggests that the benefits of economic growth and pension spending do not necessarily translate into stronger redistributive outcomes for lower-income groups. Such a result is consistent with Ferrera's argument that Mediterranean welfare systems often generate insider-outsider divisions, whereby individuals with weaker labor market attachment remain only partially integrated into contributory protection mechanisms.

By contrast, the middle class (P50–P90) exhibits the strongest and most robust redistributive response to pension expenditure. This finding highlights the central role of pensions as a mechanism of income stabilization for groups with stable employment trajectories and sustained contribution histories. Economic development also displays a positive association with redistributive capacity, suggesting that economic growth may strengthen the fiscal resources available to support redistribution.

Among higher-income groups, economic development remains positively associated with redistributive capacity, while pension expenditure generally loses statistical significance. The main exception is the economic elite (P99–P100), where pension expenditure also displays a positive and significant relationship. This result appears to contradict both the study's initial hypothesis and Piketty's argument that social transfers should have a limited impact on top-income groups. A plausible explanation is that the contributory structure of the Spanish pension system allows high-income individuals to benefit from higher contribution bases and more stable employment trajectories.

Overall, the findings suggest that Spain's redistributive model retains key features of the Mediterranean welfare regime. Redistribution appears to be concentrated among groups more strongly integrated into the formal labor market, particularly the middle class, while lower-income groups benefit less consistently from both economic growth and social expenditure. Consequently, although the Spanish welfare state remains redistributive in aggregate terms, it appears to reproduce, at least partially, the insider-outsider dynamics identified by Ferrera (1996).

6.2. Conclusion: The British Case

The empirical evidence for the United Kingdom reveals a redistributive structure that varies across social groups but remains broadly consistent with the characteristics of the Liberal welfare regime described by Esping-Andersen (1990). At the aggregate level, pension expenditure and economic development are positively associated with redistributive capacity. Unlike Sweden and Germany, labor-market fluctuations appear largely disconnected from redistributive outcomes across all social groups. This pattern suggests that redistribution depends more on overall economic performance and established transfer mechanisms than on labor market fluctuations.

The class-specific analysis, however, reveals important differences. Within the working class (P0–P50), both pension expenditure and economic development display a negative relationship with redistributive capacity, suggesting that neither economic growth nor pension expansion necessarily strengthens redistribution toward lower-income groups. This finding is consistent with the Liberal welfare model, where social protection is relatively limited and individuals' welfare remains closely linked to their position in the market.

The middle class (P50–P90) exhibits a similar pattern, with economic development negatively associated with redistributive capacity, while pension expenditure and unemployment remain statistically insignificant. This result may reflect the limited reach of redistribution toward middle-income groups within a welfare system that relies heavily on means-tested benefits and market-based welfare provision.

Among higher-income groups, economic development emerges as the only variable consistently associated with redistributive capacity. Both the upper class (P90–P100) and the economic elite (P99–P100) display positive and significant GDP coefficients, while pension expenditure and unemployment remain statistically insignificant. These findings suggest that redistribution within higher-income strata depends less on direct transfer mechanisms and more on the broader fiscal capacity associated with economic growth. They also support the view that high-income groups rely primarily on private sources of income and wealth rather than public welfare provision.

Taken together, the results indicate that the United Kingdom exhibits a redistributive configuration largely consistent with the Liberal welfare model. Redistribution appears relatively limited and segmented, with economic growth playing a more prominent role than direct social transfers. Furthermore, the absence of statistically significant unemployment effects across most social groups suggests a relatively weak connection between labor market fluctuations and redistributive capacity. Overall, the evidence points toward a welfare system in which market mechanisms remain central to the allocation of welfare and where state intervention retains a comparatively residual and selective character, consistent with the stratification dynamics identified by Esping-Andersen (1990).

6.3. Conclusion: The Swedish Case

The empirical evidence for Sweden reveals a redistributive pattern that differs substantially from those observed in Spain and the United Kingdom and is broadly consistent with the characteristics of the Social Democratic welfare regime described by Esping-Andersen (1990). At the aggregate level, unemployment emerges as the principal factor positively associated with redistributive capacity, while economic development displays a negative relationship and pension expenditure remains statistically insignificant. This pattern suggests that labor market dynamics play an important role in shaping redistribution, reflecting the close connection between welfare provision and employment that characterizes the Social Democratic model.

An important feature of the Swedish case is the relatively low explanatory power of most regressions. Compared with Spain and the United Kingdom, the variables included in the model account for a smaller share of redistributive outcomes. This finding may reflect the broader institutional complexity of the Swedish welfare state, where redistribution depends not only on pensions, unemployment, and economic growth, but also on a wider range of universal services, active labor market policies, and decommodifying institutions.

The class-specific analysis reveals several distinct patterns. Within the working class (P0–P50), economic development is positively associated with redistributive capacity, suggesting that the benefits of economic growth are transmitted more effectively to lower-income groups than in the Mediterranean or Liberal welfare regimes. By contrast, the middle class (P50–P90) exhibits a positive and significant relationship with pension expenditure, highlighting the continued importance of universal social protection mechanisms for middle-income households. At the same time, the negative and significant effect of unemployment suggests that the redistributive effectiveness of these mechanisms remains closely tied to high levels of labor-market participation, a core characteristic of the Social Democratic welfare model.

Among higher-income groups, pension expenditure displays a negative relationship with redistributive capacity, while unemployment is positively associated with redistribution. These results suggest that redistributive dynamics within the upper class (P90–P100) and the economic elite (P99–P100) are influenced more by labor market conditions than by economic growth, which remains statistically insignificant in both groups. The negative pension coefficients may also reflect institutional features of the Swedish pension system that concentrate redistributive gains more heavily among lower- and middle-income households.

Taken together, the findings indicate that Sweden exhibits a redistributive configuration broadly consistent with the Social Democratic welfare model. Redistribution appears closely connected to labor market dynamics, while economic growth generates more favorable redistributive outcomes for lower-income groups than in Spain or the United Kingdom. At the same time, the relatively low explanatory power of the models suggests that Swedish redistributive capacity is shaped by a broader and more complex set of institutional mechanisms than those captured by the variables included in this study. Overall, the evidence is consistent with a welfare regime characterized by universalism, extensive social protection, and a comparatively high degree of social integration, as described by Esping-Andersen (1990).

6.4. Conclusion: The German Case

The evidence for Germany reveals a redistributive configuration broadly consistent with the Conservative or Corporatist welfare model described by Esping-Andersen (1990). At the aggregate level, economic growth emerges as the principal factor positively associated with redistributive capacity, while pension expenditure and unemployment do not display significant effects.

Across social groups, however, a more differentiated pattern emerges. For the working class, economic development is negatively associated with redistributive capacity, suggesting that the benefits of growth do not automatically translate into greater redistribution toward lower-income households. By contrast, unemployment becomes a significant factor for the middle class, where labor-market deterioration appears to activate social protection mechanisms linked to Germany's contributory welfare architecture.

Among the upper class and the economic elite, economic growth is positively associated with redistributive capacity, while unemployment exhibits a negative relationship. This pattern suggests that fiscal capacity generated through economic expansion strengthens the state's redistributive role, whereas labor-market deterioration may constrain it. At the same time, the absence of significant pension effects across all strata indicates that pensions operate primarily as a status-preserving social insurance mechanism rather than as a major instrument of redistribution.

Taken together, the findings support the characterization of Germany as a Corporatist welfare regime. The contrasting unemployment effects observed across income groups reinforce the occupational character of the German welfare state, as labor-market shocks appear to trigger redistributive responses primarily among groups integrated into contributory social insurance schemes. This pattern is particularly evident within the middle class, where unemployment emerges as a significant determinant of redistributive capacity, reflecting the strong connection between middle-income groups and Germany's earnings-related social insurance system. By contrast, lower-income groups are more likely to rely on means-tested assistance programs whose redistributive effects are less directly linked to aggregate labor-market fluctuations. Rather than pursuing broad universal redistribution, the German welfare state appears to combine substantial social protection with the preservation of existing social and occupational hierarchies, largely in line with Esping-Andersen's theoretical expectations.

6.5. Comparative Discussion and General Conclusion

The comparative evidence presented in this study confirms that the redistributive capacity of pension systems does not operate uniformly across countries or social classes. Instead, it depends heavily on the institutional structure of each welfare regime. Overall, the findings provide partial support for the initial hypothesis: the redistributive importance of pensions generally declines at higher income levels, while economic growth and, in some cases, unemployment emerge as more relevant determinants of redistributive capacity. However, the strength and direction of these relationships vary considerably across welfare-state models.

The Spanish case highlights the continued importance of pensions within the Mediterranean welfare regime. Redistributive effects are strongest among groups with stable employment histories, particularly the middle class, while lower-income groups benefit less consistently from both economic growth and social expenditure. These findings support Ferrera's (1996) argument that Mediterranean welfare systems tend to reproduce insider-outsider divisions through their reliance on contributory social protection mechanisms.

The United Kingdom displays a redistributive pattern broadly consistent with the Liberal welfare model described by Esping-Andersen (1990). Redistribution appears relatively limited and segmented, with economic growth playing a more important role than pensions or unemployment. The weak significance of labor-market fluctuations and the limited impact of social transfers across most income groups reinforce the centrality of market mechanisms in the provision of welfare.

Sweden presents the most distinctive case. Redistributive capacity is closely linked to unemployment, highlighting the importance of employment-based stabilization mechanisms within the Social Democratic model. The low explanatory power of most regressions further suggests that redistribution in Sweden depends on a broader set of institutional instruments than those captured by the variables included in this study, including universal public services and active labor-market policies. These findings are consistent with Esping-Andersen's characterization of the Scandinavian welfare state as highly universalistic and socially integrated.

Germany occupies an intermediate position consistent with the Corporatist welfare regime. Redistributive outcomes are shaped primarily by economic growth and, to a lesser extent, unemployment, while pensions play a limited role across most social groups. The results also reveal a strong connection between redistribution and labor-market attachment, reflecting the status-preserving and employment-based logic of the German welfare state.

Beyond the differences between welfare regimes, several findings highlight the importance of institutional design within individual welfare systems. In Germany, unemployment appears most strongly linked to redistribution among middle-income groups, likely reflecting their integration into earnings-related social insurance programs, whereas lower-income groups depend more heavily on means-tested assistance mechanisms. In Spain, the positive association between pension expenditure and redistributive capacity among the economic elite represents a notable exception to the broader pattern observed across countries. Unlike the United Kingdom, where pension

effects disappear among top earners, this finding suggests that the contributory design of the Spanish pension system may allow a portion of public transfers to reach even the highest income groups. Together, these results indicate that redistributive outcomes are shaped not only by welfare regime type, but also by the specific institutional mechanisms through which benefits are allocated.

A further comparative finding is that the greatest variation across countries appears among the upper class and the economic elite. While redistribution among top-income groups in Spain and the United Kingdom is primarily associated with economic growth, Sweden exhibits stronger links to labor-market dynamics, and Germany displays a more mixed pattern. This suggests that welfare-regime differences become particularly visible at the top of the income distribution, where redistributive outcomes are shaped by distinct institutional arrangements.

Taken together, the findings demonstrate that redistributive outcomes depend not only on the volume of social expenditure but also on the institutional architecture through which welfare is delivered. While the Mediterranean and Corporatist regimes maintain a strong link between social protection and occupational status, the Liberal model places greater emphasis on market provision, and the Social Democratic model relies on broader and more universal mechanisms of redistribution.

The analysis also shows that lower-income groups are not necessarily the primary beneficiaries of pension-based redistribution, particularly in contributory systems where social rights depend on stable employment histories. Likewise, the hypothesis concerning the redistributive importance of unemployment receives clear support only in Sweden and partial support in Germany, indicating that the effectiveness of automatic stabilizers varies significantly across welfare regimes.

Overall, the evidence suggests that welfare states do more than correct market-generated inequalities. Through their institutional design, they also shape how redistribution is distributed across social groups and, in some cases, may reproduce the social and labor-market structures on which different welfare regimes are built.

7. Bibliography

- Bellés-Obrero, C., Flores, M., García-Gómez, P., Jiménez-Martín, S., & Vall-Castellós, J. (2026). *Social Security Reforms and Inequality among Older Workers in Spain* (pp. 1–36).
- Bellés-Obrero, C., Jiménez-Martín, S., & Ye, H. (2022). *The effect of removing early retirement on mortality* (Working Paper No. 2022-06). FEDEA.
- Blömer, M., Herold, E., Lay, M., Peichl, A., Rathje, A.-C., Schüle, P., & Steuernagel, A. (2024). Labour market trends and income inequality in Germany, 1983–2020. *Fiscal Studies*, 45(3), 325–342. <https://doi.org/10.1111/1475-5890.12389>
- Crawford, R., Keynes, S., & Tetlow, G. (2014). *From me to you? How the UK state pension system redistributes* (IFS Working Paper No. W14/20). Institute for Fiscal Studies.
- Devesa, E., & Doménech, R. (2023). Demografía y pensiones: Análisis de los efectos redistributivos. *Cuadernos Económicos de ICE*, 105, 197–218. <https://doi.org/10.32796/cice.2023.105.7558>
- Esping-Andersen, G. (1990). *The three worlds of welfare capitalism*. Polity Press.
- Ferrera, M. (1996). The Southern model of welfare in social Europe. *Journal of European Social Policy*, 6(1), 17–37.
- Gardiner, L. (2019). *The shifting shape of social security: Charting the changing size and shape of the British welfare system*. Resolution Foundation.
- Immervoll, H. (2005). Falling up the stairs: The effects of “bracket creep” on household incomes. *Review of Income and Wealth*, 51(1), 37–62. <https://doi.org/10.1111/j.1475-4991.2005.00145.x>
- Klevmarken, N. A. (2002). *Swedish pension reforms in the 1990s* (Working Paper). Department of Economics, Uppsala University.
- Organisation for Economic Co-operation and Development (OECD). (2026). *Tax and benefit policy descriptions for Germany 2025*. OECD Publishing.
- Organisation for Economic Co-operation and Development (OECD). (2026). *Social Expenditure Database (SOCX)* [Data set]. <https://data-explorer.oecd.org>
- Pearce, N., & Kelly, G. (2025). The recent history and future prospects of the UK welfare state. *Oxford Review of Economic Policy*.
- Piketty, T. (2014). *El capital en el siglo XXI*. Fondo de Cultura Económica.
- Thakur, S., Keen, M., Horváth, B., & Cerra, V. (2003). *Sweden’s welfare state: Can the bumblebee keep flying?* International Monetary Fund.

Vidal-Meliá, C., Pérez-Salamero González, J. M., Garvey, A. M., & Castañer Garriga, A. (2024). *The supplementary table on pensions (Table 29): Actuarial balance sheet update for the Spanish pension system to 2021, wave three* (Studies on the Spanish Economy No. eee2024-18). FEDEA.

World Bank. (2026a). *GDP per capita (constant 2015 US\$)* [Data set].
<https://data.worldbank.org/indicator/NY.GDP.PCAP.KD>

World Bank. (2026b). *Unemployment, total (% of total labor force)* [Data set].
<https://data.worldbank.org/indicator/SL.UEM.TOTL.NE.ZS>

World Inequality Lab. (2026). *World Inequality Database (WID.world)*.
<https://wid.world/>

8. Appendix

Table 1: Spanish National Aggregate

Redistributive Capacity	
Pension Spending (%GDP)	0.003** (0.001)
Unemployment Rate (%)	-0.00005 (0.0004)
Log (GDP per capita)	0.041*** (0.010)
Constant	-0.311*** (0.095)
Observations	42
R ²	0.704
Residual Std. Error	0.008 (df = 38)
Significance:	*p<0.1; **p<0.05; ***p<0.01

Table 1 Notes:

Standard errors, reported in parentheses, are robust (HC1). Although the Breusch-Pagan test ($p=0.939$) confirms the homoscedasticity of the model, this specification is adopted as a methodological precaution to guarantee the robustness of the inference.

The regression results for the case of Spain ($N=42$) suggest that pension expenditure has a positive and statistically significant impact at the 5% level ($p<0.05$) on the redistributive capacity of the system, with a coefficient of 0.003. Likewise, economic prosperity, captured through the logarithm of GDP per capita, suggests a positive and highly significant association at the 1% level ($p<0.01$). Conversely, the unemployment rate does not show a statistically significant effect in this model. The model's constant presents a value of -0.311, being statistically significant at the 1% level ($p<0.01$).

The model presents a high level of fit, with an R^2 of 0.704, suggesting that the independent variables explain approximately 70.4% of the variation in redistributive capacity in Spain during the analyzed period.

Table 2: Spanish Working Class (P₀P₅₀)

Redistributive Capacity	
Pension Spending (%GDP)	-0.002** (0.001)
Unemployment Rate (%)	-0.0001 (0.0002)
Log (GDP per capita)	-0.041*** (0.005)
Constant	0.367*** (0.045)
Observations	42
R ²	0.921
Residual Std. Error	0.003 (df = 38)
Significance:	*p<0.1; **p<0.05; ***p<0.01

Table 2 Notes:

Standard errors, reported in parentheses, are robust (HC1). Although the Breusch-Pagan test ($p=0.052$) confirms the homoscedasticity of the model, this specification is adopted as a methodological precaution to guarantee the robustness of the inference.

The specific results for the working class in Spain (p₀-p₅₀) (N=42) suggest that pension expenditure has a negative and statistically significant impact at the 5% level ($p<0.05$), with a coefficient of -0.002. Likewise, the Log (GDP per capita) shows a negative and highly significant association at the 1% level ($p<0.01$), with a coefficient of -0.041. Conversely, the unemployment rate does not show a statistically significant effect in this model. The model's constant is positive and highly significant at the 1% level ($p<0.01$), with a value of 0.367.

The model presents an excellent fit ($R^2=0.921$), suggesting that the independent variables explain approximately 92.1% of the variation in the redistributive capacity of the working class in Spain during the analyzed period.

Table 3: Spanish Middle Class (P₅₀P₉₀)

Redistributive Capacity	
Pension Spending (%GDP)	0.001*** (0.0003)
Unemployment Rate (%)	-0.00002 (0.0001)
Log (GDP per capita)	0.005* (0.003)
Constant	-0.051** (0.024)
Observations	42
R ²	0.491
Residual Std. Error	0.003 (df = 38)
Significance:	*p<0.1; **p<0.05; ***p<0.01

Table 3 Notes:

Standard errors, reported in parentheses, are robust (HC1). Although the Breusch-Pagan test ($p=0.344$) confirms the homoscedasticity of the model, this specification is adopted as a methodological precaution to guarantee the robustness of the inference.

The specific results for the middle class in Spain (p₅₀-p₉₀) (N=42) suggest that pension expenditure has a positive and highly significant impact at the 1% level ($p<0.01$), with a coefficient of 0.001. Likewise, the Log (GDP per capita) shows a positive and significant association at the 10% level ($p<0.1$), with a coefficient of 0.005. Conversely, the unemployment rate does not show a statistically significant effect in this model. The model's constant is negative and statistically significant at the 5% level ($p<0.05$), with a value of -0.051.

The model presents a moderate fit ($R^2=0.491$), suggesting that the independent variables explain approximately 49.1% of the variation in the redistributive capacity of the middle class in Spain during the analyzed period.

Table 4: Spanish Upper Class (P₉₀P₁₀₀)

Redistributive Capacity	
Pension Spending (%GDP)	0.001 (0.001)
Unemployment Rate (%)	0.0001 (0.0002)
Log (GDP per capita)	0.036*** (0.005)
Constant	-0.316*** (0.046)
Observations	42
R ²	0.786
Residual Std. Error	0.005 (df = 38)
Significance:	*p<0.1; **p<0.05; ***p<0.01

Table 4 Notes;

Standard errors, reported in parentheses, are robust (HC1). The Breusch-Pagan test (p=0.029) confirms the presence of heteroskedasticity in the model. Therefore, the application of robust estimators is justified to guarantee statistical inference.

The specific results for the upper class in Spain (p₉₀-p₁₀₀) (N=42) suggest that pension expenditure does not show a statistically significant effect on the redistributive capacity for this bracket. Likewise, the unemployment rate is also not significant. Conversely, the Log (GDP per capita) shows a positive and highly significant association at the 1% level (p<0.01), with a coefficient of 0.036. The model's constant is negative and highly significant at the 1% level (p<0.01), with a value of -0.316.

The model presents a good fit (R²=0.786), suggesting that the independent variables explain approximately 78.6% of the variation in the redistributive capacity of the upper class in Spain during the analyzed period.

Table 5: Spanish Economic Elite (P₉₉P₁₀₀)

Redistributive Capacity	
Pension Spending (%GDP)	0.001** (0.0003)
Unemployment Rate (%)	-0.00001 (0.0001)
Log (GDP per capita)	0.014*** (0.002)
Constant	-0.127*** (0.022)
Observations	42
R ²	0.732
Residual Std. Error	0.002 (df = 38)
Significance:	*p<0.1; **p<0.05; ***p<0.01

Table 5 Notes:

Standard errors, reported in parentheses, are robust (HC1). The Breusch-Pagan test (p=0.011) confirms the presence of heteroskedasticity in the model. Therefore, the application of robust estimators is justified to guarantee statistical inference.

The specific results for the economic elite in Spain (p99-p100) (N=42) suggest that pension expenditure has a positive and statistically significant impact at the 5% level (p<0.05), with a coefficient of 0.001. Likewise, the unemployment rate is also not significant. Conversely, the Log (GDP per capita) shows a positive and highly significant association at the 1% level (p<0.01), with a coefficient of 0.014. The model's constant is negative and highly significant at the 1% level (p<0.01), with a value of -0.127.

The model presents a good fit (R²=0.732), suggesting that the independent variables explain approximately 73.2% of the variation in the redistributive capacity of the economic elite in Spain during the analyzed period.

Table 6: British National Aggregate

Redistributive Capacity	
Pension Spending (%GDP)	0.006** (0.003)
Unemployment Rate (%)	0.001 (0.001)
Log (GDP per capita)	0.078*** (0.015)
Constant	-0.740*** (0.154)
Observations	43
R2	0.746
Residual Std. Error	0.011 (df = 39)
Significance:	*p<0.1; **p<0.05; ***p<0.01

Table 6 Notes:

Standard errors, reported in parentheses, are robust (HC1). Although the Breusch-Pagan test ($p=0.130$) confirms the homoscedasticity of the model, this specification is adopted as a methodological precaution to guarantee the robustness of the inference.

The specific results for the case of the United Kingdom ($N=43$) suggest that pension expenditure has a positive and statistically significant impact at the 5% level ($p<0.05$) on the redistributive capacity of the system, with a coefficient of 0.006. Likewise, the Log (GDP per capita) shows a positive and highly significant association at the 1% level ($p<0.01$), with a coefficient of 0.078. Conversely, the unemployment rate does not show a statistically significant effect in this model. The model's constant is negative and highly significant at the 1% level ($p<0.01$), with a value of -0.740.

The model presents a high level of fit ($R^2=0.746$), suggesting that the independent variables explain approximately 74.6% of the variation in redistributive capacity in the United Kingdom during the analyzed period.

Table 7: British Working Class (P0P50)

Redistributive Capacity	
Pension Spending (%GDP)	-0.004** (0.002)
Unemployment Rate (%)	-0.001 (0.001)
Log (GDP per capita)	-0.046*** (0.010)
Constant	0.437*** (0.100)
Observations	43
R2	0.753
Residual Std. Error	0.007 (df = 39)
Significance:	*p<0.1; **p<0.05; ***p<0.01

Table 7 Notes:

Standard errors, reported in parentheses, are robust (HC1). Although the Breusch-Pagan test ($p=0.223$) confirms the homoscedasticity of the model, this specification is adopted as a methodological precaution to guarantee the robustness of the inference.

The specific results for the working class in the United Kingdom (p0-p50) ($N=43$) suggest that pension expenditure has a negative and statistically significant impact at the 5% level ($p<0.05$), with a coefficient of -0.004. Likewise, the unemployment rate does not show a statistically significant effect in this model. Conversely, the Log (GDP per capita) shows a negative and highly significant association at the 1% level ($p<0.01$), with a coefficient of -0.046. The model's constant is positive and highly significant at the 1% level ($p<0.01$), with a value of 0.437.

The model presents a good fit ($R^2=0.753$), suggesting that the independent variables explain approximately 75.3% of the variation in the redistributive capacity of the working class in the United Kingdom during the analyzed period.

Table 8: British Middle Class (P₅₀P₉₀)

Redistributive Capacity	
Pension Spending (%GDP)	0.001 (0.002)
Unemployment Rate (%)	0.0004 (0.0004)
Log (GDP per capita)	-0.011** (0.005)
Constant	0.110** (0.045)
Observations	43
R ²	0.210
Residual Std. Error	0.006 (df = 39)
Significance:	*p<0.1; **p<0.05; ***p<0.01

Table 8 Notes:

Standard errors, reported in parentheses, are robust (HC1). The Breusch-Pagan test (p=0.009) confirms the presence of heteroskedasticity in the model. Therefore, the application of robust estimators is justified to guarantee statistical inference.

The specific results for the middle class in the United Kingdom (p₅₀-p₉₀) (N=43) suggest that pension expenditure does not show a statistically significant effect on the redistributive capacity for this bracket. Likewise, the unemployment rate is also not significant. Conversely, the Log (GDP per capita) shows a negative and statistically significant association at the 5% level (p<0.05), with a coefficient of -0.011. The model's constant is positive and statistically significant at the 5% level (p<0.05), with a value of 0.110.

The model presents a low-to-moderate fit (R²=0.210), suggesting that the independent variables explain approximately 21.0% of the variation in the redistributive capacity of the middle class in the United Kingdom during the analyzed period.

Table 9: British Upper Class (P₉₀P₁₀₀)

Redistributive Capacity	
Pension Spending (%GDP)	0.003 (0.002)
Unemployment Rate (%)	0.001 (0.001)
Log (GDP per capita)	0.057*** (0.010)
Constant	-0.547*** (0.099)
Observations	43
R ²	0.687
Residual Std. Error	0.009 (df = 39)
Significance:	*p<0.1; **p<0.05; ***p<0.01

Table 9 Notes:

Standard errors, reported in parentheses, are robust (HC1). The Breusch-Pagan test (p=0.040) confirms the presence of heteroskedasticity in the model. Therefore, the application of robust estimators is justified to guarantee statistical inference.

The specific results for the upper class in the United Kingdom (p₉₀-p₁₀₀) (N=43) suggest that pension expenditure does not show a statistically significant effect on the redistributive capacity for this bracket. Likewise, the unemployment rate is also not significant. Conversely, the Log (GDP per capita) shows a positive and highly significant association at the 1% level (p<0.01), with a coefficient of 0.057. The model's constant is negative and highly significant at the 1% level (p<0.01), with a value of -0.547.

The model presents a good fit (R²=0.687), suggesting that the independent variables explain approximately 68.7% of the variation in the redistributive capacity of the upper class in the United Kingdom during the analyzed period.

Table 10: British Economic Elite (P₉₉P₁₀₀)

Redistributive Capacity	
Pension Spending (%GDP)	0.002 (0.002)
Unemployment Rate (%)	0.0003 (0.001)
Log (GDP per capita)	0.041*** (0.006)
Constant	-0.414*** (0.067)
Observations	43
R ²	0.701
Residual Std. Error	0.007 (df = 39)
Significance:	*p<0.1; **p<0.05; ***p<0.01

Table 10 Notes:

Standard errors, reported in parentheses, are robust (HC1). The Breusch-Pagan test (p=0.013) confirms the presence of heteroskedasticity in the model. Therefore, the application of robust estimators is justified to guarantee statistical inference.

The specific results for the economic elite in the United Kingdom (p₉₉-p₁₀₀) (N=43) suggest that pension expenditure does not show a statistically significant effect on the redistributive capacity for this bracket. Likewise, the unemployment rate is also not significant. Conversely, the Log (GDP per capita) shows a positive and highly significant association at the 1% level (p<0.01), with a coefficient of 0.041. The model's constant is negative and highly significant at the 1% level (p<0.01), with a value of -0.414.

The model presents a good fit (R²=0.701), suggesting that the independent variables explain approximately 70.1% of the variation in the redistributive capacity of the economic elite in the United Kingdom during the analyzed period.

Table 11: Swedish National Aggregate

Redistributive Capacity	
Pension Spending (%GDP)	-0.001 (0.006)
Unemployment Rate (%)	0.003** (0.001)
Log (GDP per capita)	-0.047*** (0.011)
Constant	0.685*** (0.121)
Observations	42
R2	0.295
Residual Std. Error	0.013 (df = 38)
Significance:	*p<0.1; **p<0.05; ***p<0.01

Table 11 Notes:

Standard errors, reported in parentheses, are robust (HC1). Although the Breusch-Pagan test ($p=0.185$) confirms the homoscedasticity of the model, this specification is adopted as a methodological precaution to guarantee the robustness of the inference.

The specific results for the case of Sweden ($N=42$) suggest that pension expenditure does not show a statistically significant effect on the redistributive capacity of the system in this model. Likewise, the unemployment rate shows a positive and statistically significant association at the 5% level ($p<0.05$), with a coefficient of 0.003. Conversely, the Log (GDP per capita) shows a negative and highly significant association at the 1% level ($p<0.01$), with a coefficient of -0.047. The model's constant is positive and highly significant at the 1% level ($p<0.01$), with a value of 0.685.

The model presents a low-to-moderate fit ($R^2=0.295$), suggesting that the independent variables explain approximately 29.5% of the variation in redistributive capacity in Sweden during the analyzed period.

Table 12: Swedish Working Class (P₀P₅₀)

Redistributive Capacity	
Pension Spending (%GDP)	-0.003 (0.004)
Unemployment Rate (%)	0.00001 (0.001)
Log (GDP per capita)	0.018*** (0.006)
Constant	-0.273*** (0.073)
Observations	42
R ²	0.155
Residual Std. Error	0.008 (df = 38)
Significance:	*p<0.1; **p<0.05; ***p<0.01

Table 12 Notes:

Standard errors, reported in parentheses, are robust (HC1). The Breusch-Pagan test (p=0.006) confirms the presence of heteroskedasticity in the model. Therefore, the application of robust estimators is justified to guarantee statistical inference.

The specific results for the working class in Sweden (p₀-p₅₀) (N=42) suggest that pension expenditure does not show a statistically significant effect on the redistributive capacity for this bracket. Likewise, the unemployment rate is also not significant. Conversely, the Log (GDP per capita) shows a positive and highly significant association at the 1% level (p<0.01), with a coefficient of 0.018. The model's constant is negative and highly significant at the 1% level (p<0.01), with a value of -0.273.

The model presents a low fit (R²=0.155), suggesting that the independent variables explain approximately 15.5% of the variation in the redistributive capacity of the working class in Sweden during the analyzed period.

Table 13: Swedish Middle Class (P₅₀P₉₀)

Redistributive Capacity	
Pension Spending (%GDP)	0.011*** (0.002)
Unemployment Rate (%)	-0.003*** (0.0004)
Log (GDP per capita)	-0.017*** (0.004)
Constant	0.138*** (0.036)
Observations	42
R ²	0.751
Residual Std. Error	0.004 (df = 38)
Significance:	*p<0.1; **p<0.05; ***p<0.01.

Table 13 Notes:

Standard errors, reported in parentheses, are robust (HC1). Although the Breusch-Pagan test ($p=0.053$) confirms the homoscedasticity of the model, this specification is adopted as a methodological precaution to guarantee the robustness of the inference.

The specific results for the middle class in Sweden (p₅₀-p₉₀) (N=42) suggest that pension expenditure has a positive and highly significant impact at the 1% level ($p<0.01$), with a coefficient of 0.011. Likewise, the unemployment rate shows a negative and highly significant association at the 1% level ($p<0.01$), with a coefficient of -0.003. Conversely, the Log (GDP per capita) shows a negative and highly significant association at the 1% level ($p<0.01$), with a coefficient of -0.017. The model's constant is positive and highly significant at the 1% level ($p<0.01$), with a value of 0.138.

The model presents a good fit ($R^2=0.751$), suggesting that the independent variables explain approximately 75.1% of the variation in the redistributive capacity of the middle class in Sweden during the analyzed period.

Table 14: Swedish Upper Class (P₉₀P₁₀₀)

Redistributive Capacity	
Pension Spending (%GDP)	-0.008** (0.004)
Unemployment Rate (%)	0.003*** (0.001)
Log (GDP per capita)	-0.001 (0.006)
Constant	0.137* (0.071)
Observations	42
R ²	0.299
Residual Std. Error	0.008 (df = 38)
Significance:	*p<0.1; **p<0.05; ***p<0.01

Table 14 Notes:

Standard errors, reported in parentheses, are robust (HC1). The Breusch-Pagan test (p=0.019) confirms the presence of heteroskedasticity in the model. Therefore, the application of robust estimators is justified to guarantee statistical inference.

The specific results for the upper class in Sweden (p₉₀-p₁₀₀) (N=42) suggest that pension expenditure has a negative and statistically significant impact at the 5% level (p<0.05), with a coefficient of -0.008. Likewise, the unemployment rate shows a positive and highly significant association at the 1% level (p<0.01), with a coefficient of 0.003. Conversely, the Log (GDP per capita) does not show a statistically significant effect on the redistributive capacity for this bracket. The model's constant is positive and statistically significant at the 10% level (p<0.1), with a value of 0.137.

The model presents a low-to-moderate fit (R²=0.299), suggesting that the independent variables explain approximately 29.9% of the variation in the redistributive capacity of the upper class in Sweden during the analyzed period.

Table 15: Swedish Economic Elite (P₉₉P₁₀₀)

Redistributive Capacity	
Pension Spending (%GDP)	-0.007*** (0.002)
Unemployment Rate (%)	0.002*** (0.001)
Log (GDP per capita)	0.001 (0.004)
Constant	0.062 (0.040)
Observations	42
R ²	0.323
Residual Std. Error	0.005 (df = 38)
Significance:	*p<0.1; **p<0.05; ***p<0.01

Table 15 Notes:

Standard errors, reported in parentheses, are robust (HC1). The Breusch-Pagan test (p=0.013) confirms the presence of heteroskedasticity in the model. Therefore, the application of robust estimators is justified to guarantee statistical inference.

The specific results for the economic elite in Sweden (p₉₉-p₁₀₀) (N=42) suggest that pension expenditure has a negative and highly significant impact at the 1% level (p<0.01), with a coefficient of -0.007. Likewise, the unemployment rate shows a positive and highly significant association at the 1% level (p<0.01), with a coefficient of 0.002. Conversely, the Log (GDP per capita) does not show a statistically significant effect on the redistributive capacity for this bracket. The model's constant is also not statistically significant.

The model presents a moderate fit (R²=0.323), suggesting that the independent variables explain approximately 32.3% of the variation in the redistributive capacity of the economic elite in Sweden during the analyzed period.

Table 16: German National Aggregate

Redistributive Capacity	
Pension Spending (%GDP)	0.003 (0.002)
Unemployment Rate (%)	-0.001 (0.0004)
Log (GDP per capita)	0.079*** (0.004)
Constant	-0.703*** (0.044)
Observations	42
R2	0.903
Residual Std. Error	0.005 (df = 38)
Significance:	*p<0.1; **p<0.05; ***p<0.01

Table 16 Notes:

Standard errors, reported in parentheses, are robust (HC1). Although the Breusch-Pagan test ($p=0.398$) confirms the homoscedasticity of the model, this specification is adopted as a methodological precaution to guarantee the robustness of the inference.

The specific results for the case of Germany ($N=42$) suggest that pension expenditure does not show a statistically significant effect on the redistributive capacity of the system in this model. Likewise, the unemployment rate is also not significant. Conversely, the Log (GDP per capita) shows a positive and highly significant association at the 1% level ($p<0.01$), with a coefficient of 0.079. The model's constant is negative and highly significant at the 1% level ($p<0.01$), with a value of -0.703.

The model presents an excellent fit ($R^2=0.903$), suggesting that the independent variables explain approximately 90.3% of the variation in redistributive capacity in Germany during the analyzed period.

Table 17: German Working Class (P₀P₅₀)

Redistributive Capacity	
Pension Spending (%GDP)	0.001 (0.001)
Unemployment Rate (%)	-0.00002 (0.0003)
Log (GDP per capita)	-0.008*** (0.003)
Constant	-0.005 (0.030)
Observations	42
R ²	0.150
Residual Std. Error	0.004 (df = 38)
Significance:	*p<0.1; **p<0.05; ***p<0.01

Table 17 Notes:

Standard errors, reported in parentheses, are robust (HC1). Although the Breusch-Pagan test ($p=0.588$) confirms the homoscedasticity of the model, this specification is adopted as a methodological precaution to guarantee the robustness of the inference.

The specific results for the working class in Germany (p₀-p₅₀) (N=42) suggest that pension expenditure does not show a statistically significant effect on the redistributive capacity for this bracket. Likewise, the unemployment rate is also not significant. Conversely, the Log (GDP per capita) shows a negative and highly significant association at the 1% level ($p<0.01$), with a coefficient of -0.008. The model's constant is also not statistically significant.

The model presents a low fit ($R^2=0.150$), suggesting that the independent variables explain approximately 15.0% of the variation in the redistributive capacity of the working class in Germany during the analyzed period.

Table 18: German Middle Class (P₅₀P₉₀)

Redistributive Capacity	
Pension Spending (%GDP)	-0.0002 (0.001)
Unemployment Rate (%)	0.001** (0.0003)
Log (GDP per capita)	-0.026*** (0.002)
Constant	0.287*** (0.024)
Observations	42
R ²	0.658
Residual Std. Error	0.004 (df = 38)
Significance:	*p<0.1; **p<0.05; ***p<0.01

Table 18 Notes:

Standard errors, reported in parentheses, are robust (HC1). The Breusch-Pagan test (p=0.002) confirms the presence of heteroskedasticity in the model. Therefore, the application of robust estimators is justified to guarantee statistical inference.

The specific results for the middle class in Germany (p50-p90) (N=42) suggest that pension expenditure does not show a statistically significant effect on the redistributive capacity for this bracket. Conversely, the unemployment rate shows a positive and statistically significant association at the 5% level (p<0.05), with a coefficient of 0.001. Likewise, the Log (GDP per capita) shows a negative and highly significant association at the 1% level (p<0.01), with a coefficient of -0.026. The model's constant is positive and highly significant at the 1% level (p<0.01), with a value of 0.287.

The model presents a good fit (R²=0.658), suggesting that the independent variables explain approximately 65.8% of the variation in the redistributive capacity of the middle class in Germany during the analyzed period.

Table 19: German Upper Class (P₉₀P₁₀₀)

Redistributive Capacity	
Pension Spending (%GDP)	-0.001 (0.001)
Unemployment Rate (%)	-0.001*** (0.0002)
Log (GDP per capita)	0.034*** (0.002)
Constant	-0.282*** (0.025)
Observations	42
R ²	0.834
Residual Std. Error	0.003 (df = 38)
Significance:	*p<0.1; **p<0.05; ***p<0.01

Table 19 Notes:

Standard errors, reported in parentheses, are robust (HC1). Although the Breusch-Pagan test ($p=0.216$) confirms the homoscedasticity of the model, this specification is adopted as a methodological precaution to guarantee the robustness of the inference.

The specific results for the upper class in Germany (p₉₀-p₁₀₀) (N=42) suggest that pension expenditure does not show a statistically significant effect on the redistributive capacity for this bracket. Conversely, the unemployment rate shows a negative and highly significant association at the 1% level ($p<0.01$), with a coefficient of -0.001. Likewise, the Log (GDP per capita) shows a positive and highly significant association at the 1% level ($p<0.01$), with a coefficient of 0.034. The model's constant is negative and highly significant at the 1% level ($p<0.01$), with a value of -0.282.

The model presents a very good fit ($R^2=0.834$), suggesting that the independent variables explain approximately 83.4% of the variation in the redistributive capacity of the upper class in Germany during the analyzed period.

Table 20: German Economic Elite (P₉₉P₁₀₀)

Redistributive Capacity	
Pension Spending (%GDP)	-0.001 (0.001)
Unemployment Rate (%)	-0.0004** (0.0002)
Log (GDP per capita)	0.016*** (0.001)
Constant	-0.126*** (0.017)
Observations	42
R ²	0.645
Residual Std. Error	0.002 (df = 38)
Significance:	*p<0.1; **p<0.05; ***p<0.01

Table 20 Notes:

Standard errors, reported in parentheses, are robust (HC1). Although the Breusch-Pagan test ($p=0.102$) confirms the homoscedasticity of the model, this specification is adopted as a methodological precaution to guarantee the robustness of the inference.

The specific results for the economic elite in Germany (p₉₉-p₁₀₀) (N=42) suggest that pension expenditure does not show a statistically significant effect on the redistributive capacity for this bracket. Conversely, the unemployment rate shows a negative and statistically significant association at the 5% level ($p<0.05$), with a coefficient of -0.0004. Likewise, the Log (GDP per capita) shows a positive and highly significant association at the 1% level ($p<0.01$), with a coefficient of 0.016. The model's constant is negative and highly significant at the 1% level ($p<0.01$), with a value of -0.126.

The model presents a good fit ($R^2=0.645$), suggesting that the independent variables explain approximately 64.5% of the variation in the redistributive capacity of the economic elite in Germany during the analyzed period.