“Evidence on the determinants of corporate ownership concentration: Economic development and inequality in OECD countries”

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EVIDENCE ON THE DETERMINANTS OF CORPORATE OWNERSHIP CONCENTRATION: ECONOMIC DEVELOPMENT AND INEQUALITY IN OECD COUNTRIES

Abstract

Ownership concentration remains a defining feature of global corporate governance, with significant implications for economic development and inequality. This study aims to analyze the determinants of corporate ownership concentration in OECD and partner countries, focusing on the interplay between macroeconomic factors and distributional dynamics. The analysis relies on a short-balanced panel of 48 countries for 2020 and 2022, using OECD's newly published indicator of concentrated ownership and applying OLS, Fixed Effects, and Random Effects models in R Studio. The results show that GDP per capita is negatively and significantly associated with ownership concentration (RE model, $\beta = -1.73$, $p < 0.01$), confirming that higher development levels are linked to more dispersed ownership structures. Wealth inequality exerts a dual effect: the top 10% wealth share is negatively related to ownership concentration ($\beta = -135.4$, $p < 0.05$), while the top 1% wealth share is positively related ($\beta = 58.1$, $p < 0.05$), underscoring the reinforcing effect of elite concentration. Income inequality measures were less robust, though the FE model indicated a positive association with the top 10% income share ($\beta = 281.1$, $p = 0.021$) and a negative association with the top 1% income share ($\beta = -125.5$, $p = 0.006$). Country-specific effects revealed persistent structural deviations, with Luxembourg (+43.5), the Slovak Republic (+29.5), and Indonesia (+27.0) exhibiting systematically higher ownership concentration. At the same time, India (–32.5), South Africa (–30.4), and Japan (–29.6) consistently displayed lower levels than predicted.

Keywords corporate ownership concentration, economic development, income inequality, wealth inequality, OECD countries, panel data analysis

JEL Classification G32, O16, D31, F21, C23

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INTRODUCTION

Corporate ownership structures are a cornerstone of modern economies, influencing investment decisions, innovation capacity, and overall financial stability. According to the OECD (2020, 2023), concentrated ownership remains dominant in most countries, particularly in emerging markets and continental Europe, where large shareholders often control decision-making power. This concentration can have both positive and negative consequences: while strong blockholders may provide long-term stability and monitoring, excessive concentration risks entrenchment, reduced minority shareholder protection, and weaker capital market development. Understanding the determinants of ownership concentration has become an urgent task, especially as countries strive to foster resilient corporate governance frameworks in the aftermath of recent financial and geopolitical shocks.

The World Bank (2022) highlights that economic development is closely intertwined with corporate governance structures. In higher-

income economies, deeper financial markets and broader access to equity finance often led to more dispersed ownership. In contrast, underdeveloped capital markets and institutional weaknesses reinforce concentrated ownership in lower-income and transition economies. It was further underlined that inequality plays a dual role: broad-based wealth accumulation can support dispersed ownership, whereas extreme concentration of wealth within a narrow elite tends to reinforce control by a small group of shareholders (Stanley, 2022). This duality directly aligns with the need to examine how income and wealth distribution influence the concentration of ownership.

Chancel et al. (2022) and OECD (2021) have also flagged global inequality as a key risk factor. Rising disparities in both income and wealth not only affect social cohesion but also shape the distribution of economic power within firms. The OECD's recent Corporate Governance Factbook stresses that ownership concentration interacts with inequality by amplifying control rights of dominant shareholders, often at the expense of inclusive growth and financial democratization (OECD, 2023). As countries grapple with the social consequences of inequality, identifying the role of corporate ownership structures is a critical policy issue.

The short time horizon of available data underscores the urgency of the research agenda. The OECD began publishing comparable cross-country measures of concentrated ownership in 2020, providing a unique yet limited opportunity to establish baseline evidence. Reports from the World Bank and the IMF call for closer monitoring of corporate governance amid inequality and development transitions, particularly as economies recover from the COVID-19 crisis and adapt to new geopolitical realities. Against this background, examining the determinants of corporate ownership concentration provides timely evidence that informs academic debates and policy initiatives on sustainable and inclusive financial systems.

1. LITERATURE REVIEW

The determinants of corporate ownership concentration have long been linked to the broader framework of corporate governance, economic development, and inequality. Ownership structures reflect firm-level governance mechanisms and are shaped by systemic institutional and macroeconomic conditions. Recent studies confirm that the design of boards, governance standards, and ownership structures is integral to firm performance, innovation, and capital allocation, suggesting that concentrated ownership can either support monitoring or weaken minority protection depending on the institutional setting (Alsayed, 2024; Alsqour et al., 2024; Bagirzade, 2024; Bayuny & Haron, 2023; Hasan et al., 2024; Kristanti et al., 2024; Kurniasari & Dwi Lestari, 2025; Simitsis & Kyriakou, 2025). Governance distortions also influence compliance with disclosure standards and the value relevance of accounting information, further linking ownership to financial transparency (Krismiaji & Surifah, 2020).

Empirical findings suggest that concentrated ownership frequently influences corporate value and financial performance. Evidence from diverse contexts suggests both positive and negative effects. For instance, concentrated ownership has been associated with improved financial monitoring in some environments, while in others it reduces corporate environmental responsibility or increases vulnerability to financial distress (Chen et al., 2021; Bishwas & Hossain, 2025; Indiraswari et al., 2025; Sivaruban, 2023). Comparative analyses across Shariah-compliant and non-Shariah firms, as well as across banks and insurance institutions, reveal that governance and ownership concentration shape capital structures and profitability differently, depending on the institutional framework (Bayuny & Haron, 2023; Kurniasari & Dwi Lestari, 2025). Institutional quality moderates these effects, with weak environments amplifying distortions (Bagh et al., 2023; Lahouirich & El Amri, 2024).

The relationship between ownership concentration and inequality is central to understanding broader socio-economic implications. Market concentration and inequality are mutually reinforcing when wealth accumulation is skewed, as financial returns disproportionately benefit dominant shareholders (Gans et al., 2018; Mayer, 2024). Wealth inequality

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in Central and Eastern Europe, as well as broader comparative studies of shared development, suggest that dispersed ownership can promote more inclusive outcomes, while excessive concentration consolidates economic power among elites (Jakurti, 2024; Gai & Zhou, 2022). At the same time, firm-level studies demonstrate how foreign shareholder ownership can influence labor investment efficiency, linking ownership structures to employment patterns (Chae & Ryu, 2025).

Macroeconomic turbulence and financial market shocks further condition ownership patterns. Corporate debt dynamics during crises, payout policies of global firms, and dividend responses in industries under stress highlight how shocks interact with governance and concentration (Gajdosikova et al., 2025; Matuszewska-Pierzynka & Pieloch-Babiarz, 2025; Mehrotra & Chadha, 2025). Governance also affects resilience by shaping firm responses to sustainability pressures, digital transformation, and ESG rating mechanisms, where ownership structures often determine the extent of adaptation (Moolkham, 2025; Wang et al., 2024; Liu et al., 2024; Tessema, 2025a; Tessema, 2025b). Cross-country evidence shows that minority shareholder protection and access to credit remain significant barriers in emerging sectors such as clean and digital energy, again tying ownership concentration to inequality of opportunity (Artyukhov et al., 2024).

At a macro level, economic development and inequality jointly influence ownership concentration. Deeper financial markets in advanced economies generally support dispersed ownership, whereas underdeveloped institutions in emerging markets tend to foster concentration. Studies highlight how inequality, both in terms of income and wealth, drives ownership structures, with income distribution affecting profitability and wealth concentration shaping corporate control (Levine, 2021; Chaouech, 2025; Gondauri, 2024; Rabhi & Parsons, 2025; Kaya & Rosinsky, 2025). Evidence also suggests that climate vulnerability, technological change, and demographic challenges serve as mediators of inequality, influencing ownership patterns (Chaouech, 2025; Gondauri, 2024).

In parallel, governance frameworks and policy environments have been demonstrated to mitigate or exacerbate the risks associated with concentrated ownership. Strong governance can counterbalance the private benefits of control and enhance financial statement integrity, whereas weak structures exacerbate the risks of entrenchment and misallocation of resources (Lahouirich & El Amri, 2024; Indiraswari et al., 2025). Policy emphasis on investor rights and sustainable growth demonstrates that institutional design can directly shape the trajectory of ownership concentration (Artyukhov et al., 2024; Bagh et al., 2023). Broader socio-economic considerations, including public health systems, digital divides, and social service delivery, also indirectly highlight how inequality interacts with ownership and governance to affect social outcomes (Alsqour et al., 2024; Otieno et al., 2025; Sidii, 2025).

The literature suggests that ownership concentration is influenced by a complex interplay of corporate governance mechanisms, institutional quality, economic development, and dynamics of inequality. Concentrated ownership may stabilize firms through monitoring benefits, yet excessive concentration entrenches elites, exacerbates inequality, and weakens market efficiency. Evidence consistently suggests that inequality plays a dual role: a broad-based wealth distribution supports dispersed ownership, while extreme concentration among elites reinforces control. This duality, combined with the moderating effects of institutional quality and economic shocks, underscores the importance of examining ownership concentration in the context of economic and social structures (Medina et al., 2022; Mayer, 2024).

The study aims to investigate the determinants of corporate ownership concentration in OECD and partner countries, with a focus on the interplay between macroeconomic performance and income and wealth inequality. The paper evaluates cross-country variation and within-country dynamics using panel-data econometric techniques for 2020 and 2022.

2. METHODOLOGY

This study investigates the relationship between ownership concentration and macroeconomic factors, as well as inequality-related factors, in a panel

of OECD and partner countries. The dependent variable is ownership concentration, measured as the percentage of companies where the three largest shareholders own more than 50% of equity. Importantly, this indicator was published by the OECD starting in 2020, and data are currently available only for 2020 and 2022. Earlier releases of the OECD Corporate Governance database did not include this measure. Consequently, the empirical analysis is based on a short-balanced panel ($T = 2$, $N = 48$, yielding 96 observations), with country coverage restricted to those for which the indicator is available (listed in Appendix A).

The explanatory variables consist of macroeconomic and inequality indicators. These include GDP per capita (in constant 2015 US dollars), gross savings (as a percentage of GDP), foreign direct investment inflows (as a percentage of GDP), and unemployment (as a percentage of the total labor force). The analysis incorporates income and wealth concentration measures to capture the distributional dimension, including pre-tax national income shares of the top 10% and top 1%, as well as net personal wealth shares of the top 10% and top 1%. A full description of the variables and their sources is provided in Table 1.

Table 1. Variables and their sources

Variable	Description	Source
y	Ownership concentration (% of companies where the 3 largest shareholders own >50%)	OECD (2021, 2023)
*x*1	GDP per capita (constant 2015 US$)	World Bank (n.d.)
*x*2	Gross savings (% of GDP)	World Bank (n.d.)
*x*3	Foreign direct investment, net inflows (% of GDP)	World Bank (n.d.)
*x*4	Unemployment, total (% of labor force)	World Bank (n.d.)
*x*5	Pre-tax national income, top 10% share	WID (n.d.)
*x*6	Pre-tax national income, top 1% share	WID (n.d.)
*x*7	Net personal wealth, top 10% share	WID (n.d.)
*x*8	Net personal wealth, top 1% share	WID (n.d.)

Given the variables' heterogeneous scale and distributional properties, transformations were applied before estimation. GDP per capita was cube-root transformed based on Box–Cox diagnostics, while unemployment was transformed using its reciprocal. FDI inflows, which included negative values and exhibited strong tail behavior, were normalized using the Yeo–Johnson transformation. Income and wealth shares, bounded between 0 and 1, were expressed as proportions and logit transformed. Gross savings did not require transformation as its distribution was already approximately normal. Ownership concentration was retained in raw form, as Box–Cox and Yeo–Johnson estimates suggested $\lambda \approx 1$, because regression assumptions concern residuals rather than the dependent variable itself.

The study employs pooled OLS and panel-data techniques to explore the determinants of ownership concentration. Ordinary Least Squares (OLS) regression was used as a baseline to establish initial associations. Fixed Effects (FE) and Random Effects (RE) models were estimated using the plm package in R to account for unobserved heterogeneity across countries. The FE estimator isolates within-country variation, while the RE estimator leverages both within- and between-country information, assuming that country-specific effects are uncorrelated with regressors. The Hausman test guided the choice between FE and RE. Furthermore, diagnostic tests, including the Breusch–Pagan Lagrange Multiplier test for random effects, the Breusch–Godfrey/Wooldridge test for serial correlation, the Pesaran CD and Breusch–Pagan LM tests for cross-sectional dependence, and the studentized Breusch–Pagan test for heteroskedasticity, were applied to validate model assumptions. Robust standard errors were computed under three specifications (clustered by country, clustered by time, and Driscoll–Kraay) to ensure the robustness of inference. Finally, country-specific random effects were extracted to examine systematic deviations in ownership concentration that are not explained by macroeconomic and inequality factors.

All statistical procedures, transformations, and estimations were conducted in R Studio (version 4.4.0), ensuring reproducibility and transparent workflow management.

3. RESULTS

The descriptive statistics (Table 2) provide a useful overview of the dataset on ownership concentration and its potential determinants. The dependent variable, ownership concentration (y), has a mean

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of 55.45%, with a relatively high standard deviation (23.54), indicating significant variation across countries. The distribution is fairly symmetric (skewness –0.17) and slightly platykurtic (kurtosis –0.98), suggesting that while some economies exhibit very dispersed ownership, others show high concentration, reflecting heterogeneous corporate governance structures. The range (11–100%) further highlights these cross-country differences.

Turning to the independent variables, GDP per capita (x1) exhibits considerable variation, with a mean of approximately 34,000 US dollars and an extremely wide range (1,806 to 107,469 US dollars). The distribution is positively skewed (0.95), reflecting a few wealthy economies. Gross savings as a share of GDP (x2) is more stable, averaging 24.8% with moderate variation. Foreign direct investment inflows (x3) exhibit the most volatility, with values ranging from –444.71% to 105.64% of GDP and an extreme negative skewness (–8.32) alongside very high kurtosis (76), indicating the presence of strong outliers such as crisis-driven capital flight or sudden investment surges. Unemployment (x4) averages 6.7%, but the skewness (3.19) and kurtosis (13.26) reveal that most countries cluster at lower unemployment levels, while a few cases experience very high unemployment.

Inequality-related indicators also reveal important patterns. The top 10% share of pre-tax national income (x5) averages 40%, with the top 1% (x6) at 14%. Wealth inequality appears even more pronounced: the top 10% (x7) own 62% of wealth on average, while the top 1% (x8) hold 28%. Both wealth variables exhibit positive skewness and excess kurtosis, indicating that some countries display extreme wealth concentration at the top. These inequality measures are relatively stable across the sample compared to macroeconomic indicators, but they suggest a structural concentration of wealth and income, potentially linked to ownership concentration levels.

The data reveal strong cross-country differences in corporate ownership concentration and its potential determinants. While macroeconomic indicators, such as GDP per capita and foreign direct investment, exhibit high variability and skewness, inequality measures are more consistent but point to entrenched concentration at the top. The descriptive statistics underline the importance of accounting for outliers and distributional properties in the econometric modelling stage, as they may affect coefficient estimates and robustness.

The transformation strategy was guided by the distributional properties of each variable and the outcomes of Box–Cox and Yeo–Johnson estimation. For GDP per capita (x1), the Box–Cox estimate suggested a $\lambda \approx 0.32$, with the confidence interval excluding both log (0) and raw (1). Accordingly, a cube-root transformation was applied. This stabilized the distribution but did not fully remove skewness, as expected for income data with large cross-country disparities. For gross savings (x2), the estimated $\lambda \approx 0.62$ with a confidence interval including 1, and the Shapiro–Wilk test confirmed approximate normality in the raw data ($W = 0.980$, $p = 0.14$). Therefore, no transformation was necessary for this variable. Foreign direct investment (x3) presented the greatest challenge, as it included negative values and exhibited extremely heavy tails. The Yeo–Johnson method suggested

Table 2. Descriptive statistics

Variable	y	x1	x2	x3	x4	x5	x6	x7	x8
N	96	96	96	96	96	96	96	96	96
Mean	55.45	33998.1	24.8	–0.49	6.69	0.4	0.14	0.62	0.28
SD	23.54	24489.7	7.83	47.64	4.74	0.11	0.05	0.07	0.07
Median	60	28811.1	24.92	2.4	5.38	0.36	0.13	0.6	0.27
Trimmed	55.69	31174.5	24.37	2.66	5.83	0.39	0.13	0.62	0.27
MAD	28.17	23473.6	7.33	2.17	2.4	0.07	0.04	0.05	0.06
Min	11	1806.5	5.49	–444.71	2.22	0.25	0.06	0.45	0.14
Max	100	107470	48.54	105.64	33.27	0.65	0.31	0.86	0.55
Range	89	105663	43.05	550.34	31.04	0.4	0.25	0.4	0.41
Skewness	–0.17	0.95	0.48	–8.32	3.19	0.9	0.99	0.56	0.9
Kurtosis	–0.98	0.47	0.48	76	13.26	–0.39	0.49	1.8	2.09
SE	2.4	2499.47	0.8	4.86	0.48	0.01	0.01	0.01	0.01

$\lambda \approx 1.2$, but even after transformation, the variable remained non-normal ($W = 0.364$, $p < 0.001$), reflecting the inherent volatility of capital flows. Unemployment (x4), with a λ estimate of –0.6, was transformed reciprocally (1/x4), which yielded a distribution that passed the Shapiro–Wilk test ($W = 0.982$, $p = 0.23$).

Logit transformations were employed to respect the inequality variables and their bounded nature. Top 10% income share (x5), when expressed as a proportion and logit-transformed, showed some improvement but remained significantly non-normal ($W = 0.925$, $p < 0.001$). This outcome is consistent with the empirical clustering of income shares across countries. By contrast, the logit transformation successfully normalized the top 1% income share (x6) ($W = 0.982$, $p = 0.20$). Similarly, the top 10% wealth share (x7) improved after logit transformation but remained non-normal ($W = 0.962$, $p = 0.007$), reflecting persistent skewness in wealth concentration. However, the top 1% wealth share (x8) responded well, with the logit-transformed variable passing the normality test ($W = 0.981$, $p = 0.17$). Finally, the dependent variable, ownership concentration (y), had an estimated λ close to 1 and was retained in its raw form. Although the Shapiro–Wilk test indicated slight non-normality ($W = 0.961$, $p = 0.006$), the raw percentage scale is more interpretable, and regression assumptions concern residuals rather than the dependent variable itself.

The OLS regression (Table 3) of ownership concentration (y) on the transformed predictors shows a reasonably good fit, with an adjusted R^2 of 0.31, indicating that the model explains about 31% of the variation in ownership concentration. The overall model is statistically significant ($F(8,87) = 6.25$, $p < 0.001$).

Among the predictors, GDP per capita (x1_t) is strongly and negatively associated with ownership concentration ($\beta = -1.965$, $p < 0.001$). This suggests that in more developed economies (higher GDP per capita), ownership is less concentrated, consistent with theories of dispersed ownership in advanced capital markets. Inequality in wealth distribution also plays a key role: top 10% wealth share (x7_t) is negatively related to ownership concentration ($\beta = -153.1$, $p < 0.001$), while top 1% wealth share (x8_t) is positively related ($\beta = 58.7$, $p = 0.002$). These results highlight a nuanced dynamic in which broader elite wealth concentration is linked to more dispersed ownership, whereas extreme concentration among the very top 1% reinforces ownership concentration.

By contrast, gross savings (x2), FDI inflows (x3_t), unemployment (x4_t), and the income share measures (x5_t, x6_t) are not statistically significant. This suggests that macroeconomic savings, capital inflows, and income inequality do not directly influence ownership concentration when wealth distribution and development level are taken into account.

Figure 1 presents the standard set of regression diagnostics to assess whether the OLS specification is credible and whether inference based on t-tests is likely to be reliable. In the Residuals vs Fitted panel, the residuals are centred around zero across the range of fitted values, which supports the idea that the conditional mean of the error term is

Table 3. OLS regression results for ownership concentration

Variable	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	–371.9	135.4	–2.747	0.0073**
*x*1_*t* (GDP per capita, cube–root)	–1.965	0.374	–5.259	<0.001***
*x*2 (Gross savings)	–0.138	0.294	–0.470	0.6393
*x*3_*t* (FDI inflows, YJ)	0.001	0.069	0.009	0.9928
*x*4_*t* (Unemployment, 1/x)	0.232	27.25	0.009	0.9932
*x*5_*t* (Top 10% income, logit)	–12.03	23.40	–0.514	0.6085
*x*6_*t* (Top 1% income, logit)	2.411	15.76	0.153	0.8788
*x*7_*t* (Top 10% wealth, logit)	–153.1	42.94	–3.567	0.0006***
*x*8_*t* (Top 1% wealth, logit)	58.67	17.92	3.274	0.0015**

Note: Model statistics: Residual standard error = 19.61 (df = 87); Multiple $R^2 = 0.365$; Adjusted $R^2 = 0.306$; F-statistic = 6.25 (df = 8, 87), $p < 0.001$; Signif. codes: '***' – 0.001; '**' – 0.01; '*' – 0.05; '.' – 0.1; 'no symbol' – insignificant.

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close to zero and that the linear functional form is broadly appropriate. At the same time, the vertical spread of residuals becomes slightly wider at higher fitted values, which is consistent with *mild heteroskedasticity* (i.e., the variance of errors increasing with the level of the outcome). This does not bias the OLS coefficients, but it can distort conventional standard errors; therefore, robust standard errors are appropriate even when the visual evidence is not dramatic.

The Normal Q–Q plot evaluates whether the residuals are approximately normally distributed. Most points follow the reference line closely through the middle quantiles, indicating that the bulk of residuals is close to normal. Small departures at the tails (points bending away from the line at the extreme left/right) suggest that a few observations may have unusually large positive or negative errors. In practice, such tail deviations are common in cross-country data and mainly matter for small-sample inference; they reinforce the use of robust standard errors and motivate checking whether results are sensitive to influential observations.

The Scale–Location (Spread–Location) panel plots the square root of standardised residuals against fitted values and is a direct visual check for heteroskedasticity. A roughly horizontal band indicates constant variance, whereas an upward trend indicates increasing variance. In your case, any visible upward tendency would be read as further evidence that error variance may not be constant, again supporting heteroskedasticity-robust inference.

Finally, the Residuals vs Leverage panel (with Cook's distance contours) identifies observations that could disproportionately affect coefficient estimates. Points with both high leverage (unusual covariate patterns) and large residuals are potentially influential; if any observations lie close to or beyond Cook's distance reference lines, it is good practice to (i) report that such cases exist, and (ii) confirm robustness by re-estimating the model after excluding the most influential observation(s) or by using influence-robust methods. If no points stand out strongly, this supports the stability of the estimated relationships and indicates that results are not driven by a small number of countries.

The panels jointly suggest that the linear specification is broadly plausible and that residual normality is acceptable in the centre of the distribution, while some mild heteroskedasticity and potential tail outliers may remain. Hence, the decision was to base inference on heteroskedasticity-robust standard errors and to complement OLS with panel-robust checks.

The scale-location plot shows a relatively constant spread of residuals across fitted values, suggest-

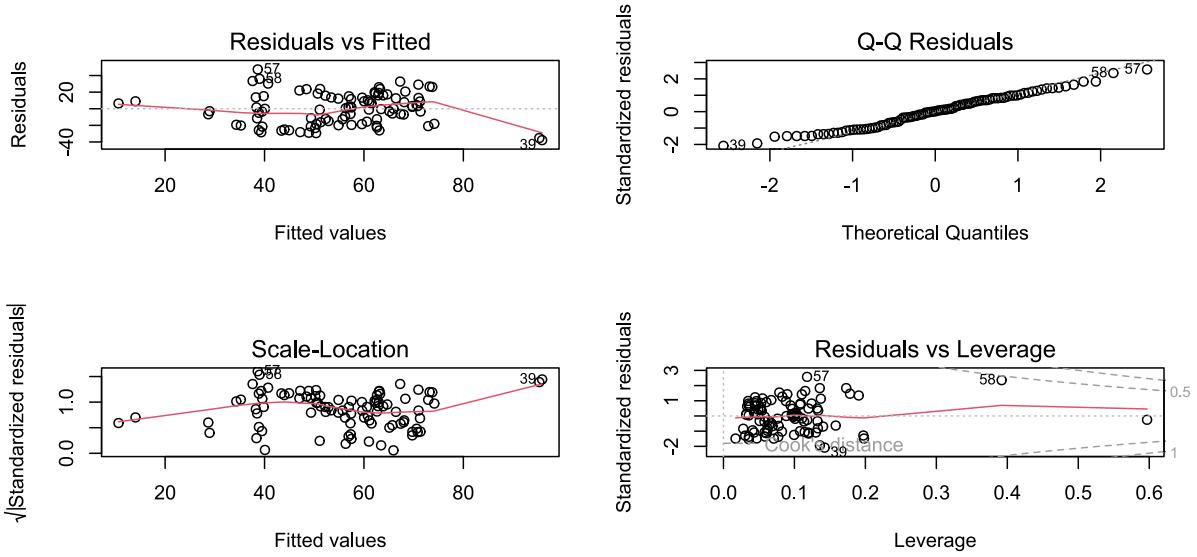

Figure 1. Diagnostic plots for the OLS regression model for ownership concentration

ing homoscedasticity. This is consistent with the Breusch–Pagan test, which found no significant heteroskedasticity. Finally, the residuals versus leverage plot highlights a few observations with higher leverage. Still, Cook's distance values remain below critical thresholds, indicating that no single data point exerts disproportionate influence on the model. These diagnostics confirm that the regression model is well-specified and that its estimates are robust.

Diagnostic tests confirm the robustness of the model. The residuals are approximately normal (Shapiro–Wilk $p = 0.17$), and there is no evidence of heteroskedasticity (Breusch–Pagan $p = 0.22$). Variance inflation factors (VIFs) are generally moderate (<10), although the income and wealth inequality variables (x5–x8) exhibit higher but acceptable collinearity, reflecting their conceptual overlap. The model is well-specified, and the key drivers of ownership concentration appear to be economic development and the structure of wealth distribution.

The coefficient estimates (Table 4) provide further evidence on the determinants of ownership concentration. The intercept is negative and significant ($\beta = -371.9$, $p = 0.019$), though its substantive interpretation is limited, as it represents the model's baseline when predictors are zero. The most robust result is for GDP per capita (x1_t), which is strongly and negatively associated with ownership concentration ($\beta = -1.97$, $p < 0.001$). This suggests that corporate ownership tends to be more dispersed in more developed economies, consistent with institutional theories of capital market maturity.

The measures of wealth inequality also exhibit significant effects. The share of wealth held by the top 10% (x7_t) is negatively related to ownership concentration ($\beta = -153.1$, $p = 0.003$), while the top 1% wealth share (x8_t) is positively related ($\beta = 58.7$, $p = 0.010$). This indicates that broad-based elite wealth concentration is associated with dispersion of corporate ownership, whereas extreme concentration among the very top reinforces ownership concentration. By contrast, macroeconomic factors such as gross savings (x2), FDI inflows (x3_t), and unemployment (x4_t), as well as income inequality (x5_t, x6_t), are statistically insignificant. Their lack of significance suggests that these factors do not significantly shape ownership concentration once GDP per capita and wealth distribution are taken into account.

The results underline the dual role of development and wealth concentration in shaping corporate governance structures. Higher levels of economic development tend to reduce ownership concentration. At the same time, the configuration of wealth inequality exerts opposing pressures, depending on whether inequality is broad-based or confined to the top percentile.

The FE model controls all unobserved time-invariant differences across countries and focuses on within-country variation between 2020 and 2022. The results show that income and wealth distribution measures are significant predictors. The top 10% income share (x5_t) is positively associated with ownership concentration ($\beta = 281.1$, $p = 0.021$), while the top 1% income share (x6_t) is negatively associated ($\beta = -125.5$, $p = 0.006$). This suggests that broader income inequality fosters concentrated ownership, but extreme concentration at the top income percentile reduces it. However, GDP per capita, savings, FDI inflows, unemployment, and wealth shares (x7_t, x8_t) are

Table 4. OLS regression results (t-test of coefficients)

Variable	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	–371.9	155.1	–2.397	0.0187*
*x*1_*t* (GDP per capita, cube–root)	–1.965	0.574	–3.424	0.0009***
*x*2 (Gross savings)	–0.138	0.330	–0.418	0.6767
*x*3_*t* (FDI inflows, YJ)	0.001	0.117	0.005	0.9957
*x*4_*t* (Unemployment, 1/x)	0.232	30.54	0.008	0.9940
*x*5_*t* (Top 10% income, logit)	–12.03	24.83	–0.485	0.6292
*x*6_*t* (Top 1% income, logit)	2.411	16.97	0.142	0.8874
*x*7_*t* (Top 10% wealth, logit)	–153.2	49.63	–3.086	0.0027**
*x*8_*t* (Top 1% wealth, logit)	58.67	22.15	2.649	0.0096**

Note: Signif. codes: '***' – 0.001; '**' – 0.01; '*' – 0.05; '.' – 0.1; 'no symbol' – insignificant.

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insignificant in the FE specification. The model explains approximately 21% of the variation (R^2 = 0.214), although the adjusted R^2 is negative due to the short panel (T = 2).

The RE model leverages both within- and between-country variation, producing different results. Here, GDP per capita (x1_t) is strongly and significantly negative (β = –1.73, p < 0.001), confirming that more developed economies have less concentrated ownership. The wealth inequality measures are also important: the top 10% wealth share (x7_t) is negatively associated with ownership concentration (β = –135.4, p = 0.026), while the top 1% wealth share (x8_t) is positively associated (β = 58.1, p = 0.022). These findings indicate a dual pattern: broader wealth concentration reduces ownership concentration, but extreme concentration among the richest 1% reinforces it. The RE model is overall significant (Chi² = 25.1, p < 0.01) with an R^2 of 0.224.

The Hausman test yields a p-value of 0.338, indicating that the null hypothesis (RE is consistent) cannot be rejected. Thus, the RE model is preferred for inference. This implies that both within- and between-country variation matter, and that unobserved country-specific factors are not strongly correlated with the explanatory variables.

Several diagnostic tests were conducted to assess the validity of the RE specification. The Breusch–Godfrey/Wooldridge test for serial correlation in panel data indicated no autocorrelation in the idiosyncratic errors (χ^2 = 1.76, df = 2, p = 0.415). Similarly, the studentized Breusch–Pagan test suggested the absence of heteroskedasticity (BP = 10.73, df = 8, p = 0.218). Regarding cross-sectional dependence, the Pesaran CD test did not reject independence (z = –0.67, p = 0.501), while the Breusch–Pagan LM test strongly rejected the null (χ^2 = 2256, df = 1128, p < 0.001). Given the very short time dimension of the panel (T = 2), the LM statistic is prone to over-rejection. In contrast, the Pesaran CD is more informative and suggests no substantive dependence across countries. These tests confirm that the RE model is well-specified, with no serious violations of panel data assumptions.

Table 6 illustrates that the significance of the coefficients varies depending on the correction applied to the standard errors. With clustered standard errors by country, only GDP per capita (x1_t, β = –1.73, p < 0.01), the top 10% wealth share (x7_t, β = –135.4, p = 0.026), and the top 1% wealth share (x8_t, β = 58.1, p = 0.039) remain statistically significant. This highlights that after accounting for within-country dependence, development level and wealth distribution are the main drivers of ownership concentration.

Almost all coefficients gain stronger statistical support when applying Driscoll–Kraay robust errors, which correct for heteroskedasticity, autocorrelation, and cross-sectional dependence simultaneously. GDP per capita (x1_t), unemployment (x4_t), top 1% income share (x6_t), and both wealth inequality measures (x7_t, x8_t) become highly significant, while FDI inflows (x3_t) are marginally significant at the 10% level. This suggests that when full dependence structures are considered, the role of labor market conditions and inequality becomes more pronounced.

Finally, with clustered standard errors by time, the significance pattern resembles the Driscoll–Kraay results, albeit less extreme. GDP per capita (x1_t),

Table 5. FE and RE regression results

Variable	FE Estimate	FE Std. Error	FE t value	FE p-value	RE Estimate	RE Std. Error	RE z value	RE p-value
x1_t	0.698	1.697	0.411	0.683	–1.731	0.510	–3.395	0.001 ***
x2	–0.044	0.239	–0.182	0.856	0.033	0.202	0.165	0.869
x3_t	0.031	0.025	1.239	0.223	0.019	0.024	0.787	0.431
x4_t	22.985	31.123	0.739	0.465	15.483	17.695	0.875	0.382
x5_t	281.087	116.873	2.405	0.021 *	24.218	30.513	0.794	0.427
x6_t	–125.464	42.922	–2.923	0.006 **	–25.136	17.030	–1.476	0.140
x7_t	107.594	344.415	0.312	0.756	–135.435	60.759	–2.229	0.026 *
x8_t	–34.658	124.953	–0.277	0.783	58.050	25.439	2.282	0.022 *

Note: Model statistics: FE – R^2 = 0.214, Adj. R^2 = –0.866, F(8,40) = 1.36, p = 0.242; RE – R^2 = 0.224, Adj. R^2 = 0.153, Chi²(8) = 25.12, p = 0.001; Hausman test: χ^2(8) = 9.05, p = 0.338 → RE preferred. Signif. codes: '***' – 0.001; '**' – 0.01; '*' – 0.05; '.' – 0.1; 'no symbol' – insignificant.

Table 6. RE regression with robust standard errors

Variable	Clustered (Country)	Driscoll–Kraay	Clustered (Time)
(Intercept)	–280.8 (p = 0.156)	–280.8 ***	–280.8 ***
*x*1_*t* (GDP per capita)	–1.73 ** (p = 0.007)	–1.73 ***	–1.73 ***
*x*2 (Gross savings)	0.03 (p = 0.891)	0.03 (p = 0.800)	0.03 (p = 0.858)
*x*3_*t* (FDI inflows)	0.02 (p = 0.443)	0.02 (p = 0.080)	0.02 (p = 0.213)
*x*4_*t* (Unemployment)	15.5 (p = 0.433)	15.5 ***	15.5 ***
*x*5_*t* (Top 10% income)	24.2 (p = 0.488)	24.2 (p = 0.258)	24.2 (p = 0.423)
*x*6_*t* (Top 1% income)	–25.1 (p = 0.322)	–25.1 ***	–25.1 ***
*x*7_*t* (Top 10% wealth)	–135.4 * (p = 0.026)	–135.4 ***	–135.4 ***
*x*8_*t* (Top 1% wealth)	58.1 * (p = 0.039)	58.1 ***	58.1 ***

Note: Signif. codes: '***' – 0.001; '**' – 0.01; '*' – 0.05; '.' – 0.1; 'no symbol' – insignificant. Table 6 reports coefficient estimates (identical across models) with significance levels based on three robust standard error specifications.

unemployment (x4_t), the top 1% income share (x6_t), and the wealth inequality variables (x7_t and x8_t) are all highly significant, underscoring their robust influence on ownership concentration even when common shocks across time are considered.

These robustness checks confirm the central findings: ownership concentration decreases with higher economic development and broader wealth inequality (top 10%), but increases with extreme concentration among the top 1%. Unemployment and the top 1% income share are also significant under more conservative or dependence-robust error structures.

The estimated country-specific effects highlight systematic deviations in ownership concentration that the model's regressors do not explain. Countries with positive effects (e.g., Luxembourg = 43.53, the Slovak Republic = 29.48, Estonia = 27.19, Indonesia = 26.96, Greece = 21.28) have persistently higher levels of ownership concentration than predicted by their macroeconomic and inequality profiles. This suggests that additional institutional, historical, or structural factors, such as corporate governance traditions or the depth of the capital market, contribute to sustaining concentrated ownership in these contexts.

By contrast, countries with large negative effects (e.g., India = –32.48, South Africa = –30.42, Japan = –29.60, Canada = –28.71, Australia = –27.43, the United Kingdom = –22.79) systematically exhibit lower ownership concentration than predicted. These economies typically have more developed capital markets, stronger investor protections, and a longer tradition of dispersed ownership, which reduces the structural incentives for concentrated control.

Table 7. Country-specific random effects

Country	Effect	Country	Effect	Country	Effect
Argentina	9.59	Hong Kong (China)	18.39	New Zealand	–14.74
Australia	–27.43	Hungary	–6.94	Norway	–15.50
Austria	12.97	Iceland	–20.54	Peru	17.17
Belgium	10.48	India	–32.48	Poland	4.07
Brazil	–5.19	Indonesia	26.96	Portugal	7.30
Canada	–28.71	Ireland	4.97	Saudi Arabia	–1.17
Chile	19.27	Israel	17.91	Singapore	20.65
China	–11.62	Italy	14.26	The Slovak Rep.	29.48
Colombia	–1.36	Japan	–29.60	Slovenia	–9.91
The Czech Republic	27.19	Korea (South)	–1.89	South Africa	–30.42
Denmark	–14.85	Latvia	15.41	Spain	–7.59
Estonia	6.32	Lithuania	15.47	Sweden	–4.14
Finland	–21.54	Luxembourg	43.53	Switzerland	–2.18
France	4.61	Malaysia	–15.67	Türkiye	21.33
Germany	1.01	Mexico	–4.19	The United Kingdom	–22.79
Greece	21.28	The Netherlands	–21.86	The United States	–17.30

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Several countries cluster around moderate deviations, such as France (4.61), Germany (1.01), Israel (17.91), and Poland (4.07), suggesting that their observed ownership concentration levels are broadly consistent with the determinants captured by the regression. Interestingly, large emerging markets, such as China (–11.62) and Brazil (–5.19), exhibit moderately negative effects, indicating structural differences between firm-level governance and macroeconomic patterns.

The pattern confirms that while economic development and inequality shape ownership structures, persistent country-level institutional legacies play a decisive role. In particular, small European economies (Luxembourg, Slovenia, and the Slovak Republic) and certain emerging markets (Indonesia, Greece) stand out as overperformers in terms of concentrated ownership, whereas Anglo-Saxon economies and advanced Asian markets (Japan and South Korea) exhibit systematically lower-than-expected concentration.

4. DISCUSSION

The empirical results confirm that corporate ownership concentration is significantly shaped by economic development and wealth inequality, while income inequality shows more nuanced and context-dependent effects. The negative and significant coefficient of GDP per capita ($\beta = -1.73$, $p < 0.01$, RE model with robust errors) indicates that higher levels of economic development are associated with more dispersed ownership structures. This finding is consistent with earlier research suggesting that advanced financial markets and broader access to equity finance in developed economies reduce the reliance on dominant shareholders (Levine, 2021; Bagh et al., 2023). The result also aligns with the argument that underdeveloped institutions and capital markets in emerging economies sustain concentrated ownership (Jakurti, 2024; Gai & Zhou, 2022).

Wealth inequality plays a dual role, as strongly supported by the results. The negative association between the top 10% wealth share and ownership concentration ($\beta = -135.4$, $p < 0.05$) suggests that corporate control becomes less concentrated when wealth is relatively dispersed among a broader elite. In contrast, the positive effect of the top 1% wealth share ($\beta = 58.1$, $p < 0.05$) confirms that extreme concentration among the richest amplifies ownership concentration. This duality aligns with the broader findings of Mayer (2024) and Gans et al. (2018), who argue that broad-based wealth fosters shared development. In contrast, extreme concentration of economic power entrenches it within a small elite. Similar evidence on the risks of unequal wealth distribution to inclusive governance has been provided by Chaouech (2025) and Gondauri (2024).

The evidence on income inequality was less robust but still informative. The Fixed Effects model showed that the top 10% income share increases ownership concentration ($\beta = 281.1$, $p = 0.021$), while the top 1% income share decreases it ($\beta = -125.5$, $p = 0.006$). This mixed pattern may reflect contextual differences, where broader income inequality fosters the dominance of blockholders. In contrast, extremely concentrated income may substitute for ownership control through other channels, such as financial leverage or political influence. The literature supports this complexity, as studies show that income inequality interacts with governance, profitability, and market performance in multiple ways (Rabhi & Parsons, 2025; Kaya & Rosinsky, 2025; Kurniasari & Dwi Lestari, 2025).

Country-specific random effects reveal systematic deviations that cannot be explained by economic and inequality variables alone. Luxembourg (+43.5), the Slovak Republic (+29.5), and Indonesia (+27.0) exhibited significantly higher ownership concentration than predicted, while India (–32.5), South Africa (–30.4), and Japan (–29.6) fell below expectations. These results align with cross-country governance studies that emphasize the importance of institutional quality, legal frameworks, and investor protection (Alsqour et al., 2024; Lahouirich & El Amri, 2024; Artyukhov et al., 2024). They also align with OECD evidence, which highlights that differences in shareholder rights and board accountability shape ownership patterns beyond economic and inequality fundamentals (Medina et al., 2022; OECD, 2023).

The findings reinforce the central argument in the literature that ownership concentration is neither uniformly detrimental nor universally beneficial.

It provides stability and monitoring benefits in environments with weak institutions, but it entrenches elites and undermines inclusive growth when associated with extreme wealth concentration and insufficient minority shareholder protection. The empirical evidence confirms the dual nature of inequality and development, offering new cross-country evidence that bridges firm-level corporate governance findings (Bayuny & Haron, 2023; Hasan et al., 2024; Bishwas & Hossain, 2025) with macro-level analyses of inequality and institutional structures (Mayer, 2024; Gans et al., 2018; Levine, 2021).

The limited availability of ownership concentration data constrains this analysis. The OECD began publishing the indicator of the percentage of companies where the three largest shareholders own more than 50% of equity only in 2020, with data currently available for two years (2020 and 2022). As a result, the empirical analysis relies on a short-balanced panel of 48 countries over two periods. While this provides valuable cross-sectional insights, the restricted time dimension limits the ability to capture long-term dynamics, structural breaks, or the effects of institutional reforms. Moreover, the country sample is confined to OECD members and selected partner economies listed in Appendix A, which may reduce the generalizability of the findings to emerging markets or developing countries not covered by the dataset.

Future research should extend the analysis to a longer time series, enabling exploration of trends in ownership concentration and their interactions with economic development and inequality over time. Expanding the scope beyond OECD countries would provide a more global perspective, especially by including large emerging economies where concentrated ownership structures are particularly prominent. Additional institutional variables, such as shareholder protection laws, corporate governance codes, and financial market development indicators, could also be integrated to refine the explanatory framework. Finally, applying advanced econometric techniques, such as dynamic panel models or spatial dependence methods, would enable a more comprehensive assessment of causality and spillover effects across countries.

CONCLUSION

This study analyses how economic development and income and wealth inequality are associated with corporate ownership concentration across OECD and partner countries, using the share of firms controlled by the three largest shareholders as a lens to explain the persistence of concentrated ownership structures and their macroeconomic and distributional determinants.

The analysis employs a short balanced panel of 48 countries for 2020–2022, estimated using pooled OLS, fixed- and random-effects models (with Hausman-based selection), and appropriate variable transformations, and robust standard errors to ensure valid inference.

Across specifications, higher GDP per capita is consistently associated with lower ownership concentration. Wealth inequality exhibits asymmetric effects (top-10% wealth concentration reduces, while top-1% concentration increases ownership concentration), income inequality plays a weaker and less stable role, and several countries display persistent deviations from model-predicted concentration levels.

These findings provide important policy implications. First, fostering capital market development and broadening access to equity financing can help reduce ownership concentration by lowering the reliance on block-holding investors. Policies that strengthen investor protection frameworks, corporate governance codes, and minority shareholder rights are especially important in countries where concentrated ownership persists. Second, the dual role of wealth inequality suggests that tackling extreme concentration at the very top is critical for promoting dispersed ownership and inclusive capital markets. Taxation of wealth, inheritance reforms, and policies aimed at curbing excessive rent capture may help to mitigate the reinforcing effects of the top 1% on corporate concentration. At the same time, ensuring

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broad-based asset accumulation across the population through pension savings, employee share ownership schemes, and financial literacy programs can help balance corporate power structures. Finally, cross-country differences in ownership concentration that persist beyond economic and inequality fundamentals underscore the need for institution-specific reforms, tailored to each country's historical and institutional setting. Strengthening disclosure requirements, enhancing ownership transparency, and encouraging cross-listings in international exchanges could be especially effective in reducing opaque or entrenched control.

Using the OECD's newly published data, this paper provides the first systematic evidence on the linkages between ownership concentration, economic development, and inequality. While time-limited, the study establishes clear empirical patterns and lays the foundation for future analyses as longer series and broader coverage become available.

AUTHOR CONTRIBUTIONS

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APPENDIX A

Table A1. Sample of countries

Country	Country	Country
Argentina	Hong Kong (China)	New Zealand
Australia	Hungary	Norway
Austria	Iceland	Peru
Belgium	India	Poland
Brazil	Indonesia	Portugal
Canada	Ireland	Saudi Arabia
Chile	Israel	Singapore
China	Italy	The Slovak Rep.
Colombia	Japan	Slovenia
The Czech Republic	Korea (South)	South Africa
Denmark	Latvia	Spain
Estonia	Lithuania	Sweden
Finland	Luxembourg	Switzerland
France	Malaysia	Türkiye
Germany	Mexico	The United Kingdom
Greece	The Netherlands	The United States

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