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Distribution-Neutral Growth? Income Concentration, Wealth Concentration, and the Functional Distribution of Income

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Research Article

Keywords: economic growth, income inequality, labor share, retained earnings, wealth concentration

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Abstract

This paper examines whether economic growth shifts income and wealth toward the top of the distribution and whether income and wealth concentration respond to growth at different times. Using an annual panel of 41 countries from 1980 to 2023, combining World Inequality Database distributional national accounts with Penn World Table data, it estimates two-way fixed-effects and distributed-lag models with Driscoll–Kraay standard errors. Conditional on changes in the labor share and capital deepening, growth is not associated with annual changes in the top 10% or bottom 50% income shares or the top 10% wealth share, and a formal test does not support the hypothesis that income concentration responds immediately and wealth concentration with a delay. Exploratory analyses show that a fall in the labor share is associated with a rise in the pretax top 10% income share, largely at the expense of the middle 40%. This association does not appear in fiscal income in the same year and shrinks substantially once retained corporate profits are controlled for, a pattern consistent with, but not proof of, a channel through profits that national accounts attribute to shareholders before they reach taxable income.

Keywords: economic growth; income inequality; labor share; retained earnings; wealth concentration

JEL codes: C23, D31, D33, E25, O47

Introduction

Economic growth is widely expected to raise living standards across the distribution, yet in many countries periods of solid growth in national accounts have coincided with widespread perceptions that economic gains accrue mainly to those at the top. Whether this perception reflects how growth is actually distributed, how income is measured, or how people experience changes in their economic situation remains an open question (Stiglitz *et al*., 2009). The question has become more pressing as new distributional statistics have made it possible to track the shares of national income and wealth held by different groups on a consistent basis across many countries (Chancel *et al*., 2022).

This paper examines two related questions. The first is whether economic growth is associated with a shift of income and wealth toward the top of the distribution. The second is whether income concentration and wealth concentration respond to growth at different times, as a simple accumulation argument would suggest: if growth first raises the income of top groups, their greater saving and asset returns should raise their share of wealth only gradually. To address these questions, the paper uses an annual panel of 41 advanced, emerging and transition economies from 1980 to 2023, combining distributional national accounts from the World Inequality Database with macroeconomic data from the Penn World Table. It estimates two-way fixed-effects and distributed-lag models with standard errors robust to cross-sectional and serial dependence, and it formally tests whether income and wealth concentration respond with different timing.

The analysis yields two sets of findings. The main analysis concerns growth. Conditional on changes in the labor share and capital deepening, growth is not associated with annual changes in the top 10% or bottom 50% income shares or the top 10% wealth share. The wealth share declines modestly in the following years, but this decline is not robust to excluding transition economies, and a small positive association with the top 10% income share appears only when the transition episodes of formerly centrally planned economies are excluded. The hypothesis that income concentration responds immediately and wealth concentration with a delay is not supported. A second, exploratory set of analyses, motivated by these results, concerns the labor share. A fall in the labor share is associated with a rise in the pretax top 10% income share, mainly at the expense of the middle 40%. This association does not appear in fiscal income derived from tax records in the same year, and it shrinks substantially when retained corporate profits, which distributional national accounts attribute to shareholders before they are received as taxable income, are controlled for.

The paper contributes to three literatures. It adds to the empirical literature on growth and inequality by examining annual changes in income and wealth shares jointly, and by testing their relative timing formally rather than comparing separate estimates. Its exploratory analyses contribute to research on the link between the functional and the personal distribution of income by documenting that this link, as measured in distributional national accounts, moves closely with retained corporate profits. Finally, they offer evidence relevant to the debate over the measurement of top income shares, by suggesting that part of the difference between national-accounts-based and tax-based measures, at least with respect to the labor share, may concern the form and timing in which income reaches top groups rather than whether that income exists.

The remainder of the paper is organized as follows. The next section reviews the related literature. The Data section describes the distributional and macroeconomic series, and the Methods section sets out a simple accounting framework linking the labor share to top income shares, together with the estimating equations and the test of relative timing. The Results section presents the estimates for growth, for the timing of income and wealth concentration, for the labor share, and for the comparison between pretax and fiscal income shares. The Discussion interprets these findings and their limitations, and the Conclusion summarizes their implications.

Literature Review

The relationship between growth and inequality has been studied since Kuznets (1955), who proposed an inverted-U relationship between inequality and development. Theories of distributive politics predicted that inequality lowers growth through pressure for redistribution (Alesina & Rodrik, 1994; Persson & Tabellini, 1994), but cross-country estimates are sensitive to the sample, horizon and estimation method (Banerjee & Duflo, 2003; Barro, 2000; Forbes, 2000), and later work associates lower net inequality with faster and more durable growth (Ostry *et al*., 2014). Studies of the incidence of growth find that the incomes of the poorest rise, on average, in proportion to mean income (Dollar & Kraay, 2002; Dollar *et al*., 2016), although this average conceals wide variation across episodes (Ravallion, 2001) and differences in poverty reduction are driven mainly by differences in average growth (Kraay, 2006). These studies rely on household surveys and focus on the bottom of the distribution. Less is known about how growth relates to top income and wealth shares measured consistently with national accounts, and whether income and wealth concentration respond on different time scales.

A second literature links the functional to the personal distribution of income. Atkinson (2009) argued that factor shares deserve renewed attention because capital income is far more concentrated than labor income, and a higher capital share is associated with greater personal inequality across countries and over the long run (Bengtsson & Waldenström, 2018; Daudey & García-Peñalosa, 2007). Since the 1980s the labor share has declined in many countries (Elsby *et al*., 2013; Karabarbounis & Neiman, 2014), a trend attributed to superstar firms (Autor *et al*., 2020), rising markups (Barkai, 2020; De Loecker *et al*., 2020) and rising wealth-income ratios (Piketty & Zucman, 2014). The measured decline depends on the treatment of housing (Gutiérrez & Piton, 2020) and of self-employment income (Gollin, 2002). The labor share also falls in expansions as profits recover faster than wages (Ríos-Rull & Santaeulàlia-Llopis, 2010), one channel through which growth may affect top shares.

A third literature documents top income and wealth shares. Piketty and Saez (2003) and Atkinson *et al*. (2011) used tax records to construct long series of top income shares (see also Roine & Waldenström, 2015), and Piketty (2014) placed wealth accumulation at the center of long-run distributional dynamics. Saez and Zucman (2016) estimated wealth concentration by capitalizing capital income in tax data, an approach questioned because returns differ across wealth groups (Kopczuk, 2015; Smith *et al*., 2023). Returns to wealth are indeed heterogeneous, persistent and increasing in wealth (Fagereng *et al*., 2020), and housing and equity returns follow different paths across countries and periods (Jordà *et al*., 2019). Relative asset prices therefore shape wealth concentration: rising house prices favor the middle class, whose assets are concentrated in housing, while rising equity prices favor the top (Kuhn *et al*., 2020), and saving rates and asset prices jointly drive wealth dynamics (Garbinti *et al*., 2021). Wealth concentration may therefore respond to growth more slowly than income concentration, but this timing has rarely been tested across countries.

The distributional national accounts of Piketty *et al*. (2018), implemented in the World Inequality Database (Alvaredo *et al*., 2016), allocate all national income across the population, including undistributed corporate profits, and have been extended to China (Piketty *et al*., 2019), Russia (Novokmet et al., 2018) and Europe (Blanchet *et al*., 2022). Undistributed profits have grown as corporate saving has risen (Chen *et al*., 2017), and their allocation matters. Norwegian evidence shows that after a dividend tax reform, owners retained income within their firms, so that tax-based top shares understate and misdate their income unless retained earnings are attributed to them (Alstadsæter *et al*., 2016). Auten and Splinter (2024), relying more on tax data, find a much smaller rise in US top income shares than Piketty *et al*. (2018), and conclusions depend on the income definition and unit of observation (Bricker *et al*., 2016; Larrimore *et al*., 2021). That much of top income derives from private business profits (Smith *et al*., 2019) further complicates the interpretation of capital income at the top. This debate has focused on levels in the United States rather than on how the two measures respond to annual changes in the functional distribution across countries.

Finally, a growing body of work questions how far aggregate statistics reflect economic experience. The Commission on the Measurement of Economic Performance and Social Progress recommended more weight on household income and its distribution (Stiglitz *et al*., 2009). Perceived inequality often diverges from measured inequality (Gimpelson & Treisman, 2018; Norton & Ariely, 2011), and individuals misjudge their own position in the distribution (Cruces

et al., 2013). The gap between measured growth and lived experience may thus arise partly from what is measured. This paper does not measure perceptions, but it identifies which components of measured income move with growth and the labor share, and thereby one possible source of this gap.

Three gaps emerge. The growth-inequality literature has paid less attention to top income and wealth shares measured consistently with national accounts, and to their relative timing. The factor-share literature has established that the labor share matters for inequality, but not the form of income through which this link operates. The measurement debate has focused on levels in a single country rather than on how different measures respond to changes in the functional distribution. This paper addresses these gaps by estimating the association of growth and the labor share with income and wealth shares in 41 countries, testing their relative timing formally, and comparing pretax and fiscal income measures.

Data

The analysis combines distributional data from the World Inequality Database (WID; World Inequality Database, 2026) with macroeconomic data from Penn World Table (PWT) 11.0 (Feenstra *et al*., 2015; Groningen Growth and Development Centre, 2025) for 41 advanced, emerging and transition economies (listed in Appendix Table A1) over 1980-2023. Because the analysis uses annual changes, the effective period is 1981-2023. The distributional outcomes are available for every country-year, giving 1,763 potential observations; missing PWT regressors and the lags required by the distributed-lag models reduce the baseline samples to 1,693 and 1,570 country-years.

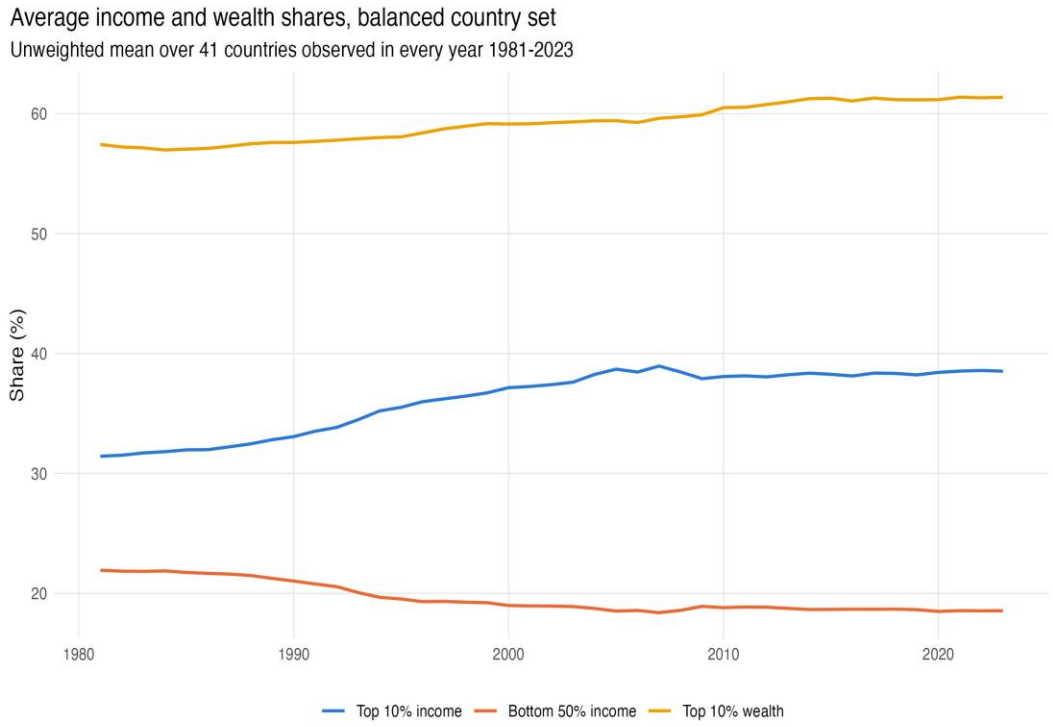
The main measures are WID distributional national accounts (DINA; Alvaredo *et al*., 2016; Piketty *et al*., 2018), which allocate total national income and household wealth across equal-split adults aged 20 and over, consistently with national-accounts totals. Three series are used: the pretax national income shares of the top 10% and the bottom 50%, and the net personal wealth share of the top 10%; the middle 40% share is obtained as a residual. Pretax national income includes undistributed corporate profits, which DINA attributes to shareholders. The additional analyses use two further WID series. The first is the top 10% share of fiscal income, taken directly from tax statistics and therefore excluding undistributed profits. The second is the retained-earnings share, the net primary income of corporations relative to net national income. Fiscal series cover 30 countries, range in length from 5 to 44 years (median about 30) and differ in population unit (individuals, tax units or equal-split adults); a single unit is used for each country.

From PWT the analysis uses real GDP, population, the capital stock and output-side GDP at current PPPs and the labor share, which includes the imputed labor income of the self-employed. The labor share is measured relative to GDP and the retained-earnings share relative to net national income.

Three features of the data require caution. First, WID series are extended by imputation where primary sources are missing, which produces long constant stretches, for example in the income shares of Argentina, Brazil and Mexico before the early 2000s. These yield zero annual changes and may attenuate the estimates. Second, some series break when new sources are introduced, for example the wealth shares of Mexico around 2002 and Hungary around 2015; the outlier rule

and the exclusion of transition economies partly address these breaks. Third, wealth series are often derived by capitalizing capital income, so their annual movements are not fully independent of the income series.

Figure 1 shows the averages across the 41 countries. The top 10% income share rose from about 31% in 1981 to about 39% by the mid-2000s and has been broadly stable since, the bottom 50% share fell from about 22% to about 19%, and the top 10% wealth share rose from about 57% to about 61%.



Methods

Conceptual framework

Let ℓ_t denote the labor share of national income, and ω_t and κ_t the shares of labor and capital income received by the top 10%. The top 10% share of pretax national income and its change can then be written as

$$I_t^{10} = \omega_t \, \ell_t + \kappa_t \, (1 - \ell_t) \qquad (1)$$

$$\Delta I_t^{10} \approx (\omega_t - \kappa_t) \, \Delta \ell_t + \ell_t \, \Delta \omega_t + (1 - \ell_t) \, \Delta \kappa_t \qquad (2)$$

Because capital income is more concentrated than labor income ($\kappa_t > \omega_t$), a rise in the labor share lowers the top 10% share even when the distribution within each factor is unchanged. Growth can act on every term of Equation (2). In expansions the labor share tends to fall, which raises the top share, while employment gains at the bottom of the distribution work in the

opposite direction. The framework therefore does not predict the sign of the association between growth and top shares, but it implies that the labor share should be a more direct correlate of top income shares than growth itself. Wealth concentration, which changes as top groups save out of their income and earn returns on a large existing stock, should respond more gradually than income concentration; this is the timing hypothesis tested with Equations (11)-(14).

The framework also distinguishes how capital income reaches households. Capital income consists of a distributed part d_t and retained corporate profits r_t, with $1 - \ell_t = d_t + r_t$. Pretax national income attributes retained profits to shareholders, whereas fiscal income records only labor income and distributed capital income:

$$I_t^{10} = \omega_t \, \ell_t + \kappa_t^d \, d_t + \kappa_t^r \, r_t, \qquad F_t^{10} = \frac{\omega_t \, \ell_t + \kappa_t^d \, d_t}{\ell_t + d_t} \qquad (3)$$

If a fall in the labor share is absorbed mainly by retained profits, the pretax top 10% share rises while the fiscal share changes little in the same year, and the retained profits reach fiscal income only when they are later distributed or realized. The difference between the pretax and fiscal responses to the labor share is therefore informative about the role of retained earnings, although it cannot by itself identify a causal pathway, because the labor share and corporate profits are linked by national-accounts identities. This implication, examined with Equation (17), was formulated after the main estimates had been examined and is treated as exploratory.

Variable construction

The data are described in the previous section. For country i in year t, I_{it}^{10} denotes the pretax national income share of the top 10%, I_{it}^{50} the share accruing to the bottom 50%, and W_{it}^{10} the net personal wealth share of the top 10%. Shares are measured in percentage points.

Real GDP per capita is constructed as:

$$y_{it} = \frac{\mathrm{RGDPE}_{it}}{\mathrm{POP}_{it}} \qquad (4)$$

Here, RGDPE_{it} is expenditure-side real GDP and POP_{it} is population. The capital-output ratio is:

$$k_{it} = \frac{\mathrm{CN}_{it}}{\mathrm{CGDPo}_{it}} \qquad (5)$$

Here, CN_{it} is the capital stock and CGDPo_{it} is output-side GDP at current PPPs. The labor share, ℓ_{it}, is measured by PWT's labsh series. Because labsh measures labor compensation relative to GDP rather than national income, it differs from the labor share in Equation (1) by depreciation and net factor income from abroad. The two denominators move closely together within countries, but the fixed effects absorb only time-invariant differences between them; time variation in depreciation or net foreign income could therefore affect the estimates. For this reason, the association between labsh and top income shares is interpreted as consistent with, rather than identical to, the accounting decomposition in Equation (1).

Two further WID series are used in the additional analyses described below. The first is the top 10% share of fiscal income, F_{it}^{10}. The second is the retained-earnings share, defined as the net primary income of corporations relative to net national income:

$$R_{it} = 100 \times \frac{\text{PRICO}_{it}}{\text{NNINC}_{it}}$$

R_{it} is referred to below as the retained-earnings share. In the DINA methodology, these undistributed profits are attributed to shareholders and therefore enter pretax national income, whereas they do not appear in fiscal income until they are distributed or realized.

Distributional measures and explanatory variables

GDP per capita growth, expressed as an approximate percentage, is:

$$g_{it} = 100\big[\ln(y_{it}) - \ln\big(y_{i,t-1}\big)\big] \qquad (6)$$

Capital deepening and the change in the labor share are:

$$\Delta k_{it} = k_{it} - k_{i,t-1}, \qquad \Delta \ell_{it} = 100\big(\ell_{it} - \ell_{i,t-1}\big) \qquad (7)$$

The annual changes in the income and wealth shares are:

$$\Delta I_{it}^{10} = I_{it}^{10} - I_{i,t-1}^{10}, \quad \Delta I_{it}^{50} = I_{it}^{50} - I_{i,t-1}^{50}, \quad \Delta W_{it}^{10} = W_{it}^{10} - W_{i,t-1}^{10} \qquad (8)$$

Changes are calculated only when both the current- and prior-year observations are available for consecutive calendar years. The same rule is applied to ΔF_{it}^{10} and ΔR_{it}, and lagged values are matched by calendar year, so that gaps in a series never shift a lag.

To measure whether growth coincides with a shift in income shares toward the top rather than the bottom of the distribution, the analysis constructs a distributional divergence measure:

$$D_{it} = \Delta I_{it}^{10} - \Delta I_{it}^{50} \qquad (9)$$

A positive value indicates that the annual change in the top 10% income share exceeds the change in the bottom 50% share. This measure describes relative movements in income shares; it does not directly measure changes in each group's real income. The share of the middle 40% is obtained as a residual, $M_{it}^{40} = 100 - I_{it}^{10} - I_{it}^{50}$, so that the changes in the three group shares sum to zero by construction.

Econometric specification

The main analysis estimates separate two-way fixed-effects models for changes in the top 10% income share, the bottom 50% income share, the distributional divergence measure and the top 10% wealth share:

$$\Delta S_{it}^{q} = \alpha_i + \lambda_t + \beta_q g_{it} + \gamma_{1q}\Delta k_{it} + \gamma_{2q}\Delta \ell_{it} + \varepsilon_{it}^{q} \qquad (10)$$

Here, q identifies the distributional outcome, α_i denotes country fixed effects, and λ_t denotes year fixed effects. Country effects absorb time-invariant differences across countries, while year effects absorb shocks common to countries in a given year. The coefficient β_q measures the

within-country association between GDP per capita growth and the annual change in the relevant share, after accounting for common year effects and the included controls.

Dynamic response

To examine whether income and wealth concentration respond at different times, the analysis estimates distributed-lag specifications:

$$\Delta S_{it}^{q} = \alpha_i + \lambda_t + \sum_{h=0}^{H} \beta_{qh}\, g_{i,t-h} + \gamma_{1q}\Delta k_{it} + \gamma_{2q}\Delta \ell_{it} + \varepsilon_{it}^{q} \qquad (11)$$

The cumulative response over the specified horizon is:

$$\sum_{h=0}^{H} \beta_{qh} \qquad (12)$$

The baseline horizon, $H = 3$, was fixed in the analysis script before estimation; horizons of 0, 1, 2, 4 and 5 years are reported as sensitivity checks. These estimates describe the timing of conditional associations and do not, by themselves, establish that growth causes subsequent changes in concentration.

Formal test of differences in timing

Whether the top 10% income share and the top 10% wealth share respond to growth with different timing is tested by estimating Equation (11) for both outcomes on a common set of country-years, with outcome-specific country and year effects. This is equivalent to a single stacked regression fully interacted with an outcome indicator. Let $\delta_h = \beta_{Wh} - \beta_{Ih}$ denote the difference between the wealth and income lag coefficients. Three hypotheses are tested: equal cumulative responses at each horizon,

$$\sum_{j=0}^{h} \delta_j = 0, \qquad h = 0, \ldots, H \qquad (13)$$

equal impact and equal delayed responses, $\delta_0 = 0$ and $\sum_{h=1}^{H} \delta_h = 0$; and identical lag profiles, $\delta_0 = \cdots = \delta_H = 0$, using the Wald statistic

$$\mathcal{W} = \hat{\delta}'\left(\mathrm{R}\widehat{\mathrm{V}}\mathrm{R}'\right)^{-1}\hat{\delta} \sim \chi^2_{H+1} \qquad (14)$$

where $\widehat{\mathrm{V}}$ is the joint covariance matrix of both equations described under Inference.

Additional analyses

The analyses in this section were added after the results of Equations (10)-(14) had been examined and should be read as exploratory. They were motivated by the finding that the change in the labor share was the most stable correlate of changes in top shares.

The first treats the labor share as the variable of interest in a distributed-lag model, with growth and capital deepening as controls:

$$\Delta S_{it}^{q} = \alpha_i + \lambda_t + \sum_{h=0}^{H} \theta_{qh}\, \Delta \ell_{i,t-h} + \beta_q g_{it} + \gamma_q \Delta k_{it} + \varepsilon_{it}^{q} \qquad (15)$$

This model is estimated for the four outcomes above and for the middle 40% share. Because the bottom 50%, middle 40% and top 10% responses sum to zero on a common sample, their comparison shows to which part of the distribution the share lost or gained by the top 10% accrues. An alternative version adds lags 0 to H of growth.

Two checks examine whether the data show evidence of anticipation or of a reverse predictive relationship. The first adds two leads of the labor-share change to Equation (15), so that the sum runs from $h = -2$ to H, and tests jointly whether the lead coefficients are zero. The second reverses the direction of the regression:

$$\Delta \ell_{it} = \alpha_i + \lambda_t + \sum_{h=1}^{H} \phi_h\, \Delta I_{i,t-h}^{10} + \beta\, g_{it} + \gamma \Delta k_{it} + u_{it} \qquad (16)$$

The last two analyses examine whether the association between the labor share and the pretax top 10% share arises from the way DINA series are constructed. Equation (15) is estimated for ΔI_{it}^{10} and ΔF_{it}^{10} on the same country-years, and the difference between the two sets of coefficients is tested with the joint covariance matrix. This comparison is repeated by fiscal population unit, for countries with at least 15 years of fiscal data, for years up to 2015, excluding transition economies, and leaving out one country at a time. Finally, the gap $G_{it} = \Delta I_{it}^{10} - \Delta F_{it}^{10}$ and the pretax share change ΔI_{it}^{10} are regressed on the labor-share terms with and without the retained-earnings share:

$$Y_{it} = \alpha_i + \lambda_t + \sum_{h=0}^{H} \theta_h\, \Delta \ell_{i,t-h} + \sum_{h=0}^{H} \psi_h\, \Delta R_{i,t-h} + \beta\, g_{it} + \gamma \Delta k_{it} + \varepsilon_{it} \qquad (17)$$

A substantial reduction in the labor-share coefficients when ΔR is added would be consistent with an association that operates through undistributed corporate profits; because the two variables are linked by construction, such a reduction does not by itself establish a causal pathway. The response of ΔR_{it} itself to the labor share is also reported. The labor share is expressed relative to GDP and the retained-earnings share relative to net national income, so the two are not on an identical base.

Inference and sensitivity analyses

Standard errors are calculated using the Driscoll-Kraay covariance estimator (Driscoll & Kraay, 1998) with a Bartlett kernel to allow for heteroskedasticity, serial correlation and cross-sectional dependence, with the HC1 small-sample adjustment. The baseline maximum lag is two years, consistent with the $T^{1/4}$ rule for the annual time dimension; maximum lags of 1, 3 and 4 years are used as sensitivity checks. For tests that compare two equations, the scores of both equations are summed within each year before the long-run covariance is formed. The resulting joint covariance matrix therefore allows the errors of the two equations to be correlated within a country-year, across countries and over time. For each single equation it reproduces the Driscoll-

Kraay standard errors exactly. Reported p-values use the normal approximation. All models are estimated in R with the plm package (Croissant & Millo, 2008).

The analysis reports the estimation sample separately for each outcome and specification. Sensitivity analyses include non-overlapping five-year periods (1981-85 to 2021-23), in which period values are averages of complete annual observations and at least three annual observations are required. They also include re-estimation after excluding country-years flagged by a prespecified outlier rule, under which a country-year is flagged when the within-country modified z-score, $0.6745(x - \tilde{x})/\text{MAD}$, exceeds 3.5 in absolute value for the outcome change or for growth. Because the panel includes large transitions in formerly centrally planned economies (Poland, the Czech Republic, Hungary, Slovakia, Slovenia, Estonia, Latvia, Lithuania, Russia and China), results are re-estimated excluding 1990-1999 for these countries other than China, whose reform was gradual, and excluding all ten countries. Two further checks address inference and measurement. Because the number of clusters is moderate, p-values for the main coefficients are recomputed with a restricted wild cluster bootstrap (Rademacher weights, 9,999 replications), clustering by country and, alternatively, by year. The labor-share models are also re-estimated with three measures expressed relative to net national income: the PWT series re-based by the ratio of GDP to net national income, and two WID national-accounts measures, compensation of employees plus 70% of net mixed income and compensation of employees alone, each divided by net national income.

Scope of interpretation

The WID and PWT measures describe realized income and wealth distributions. They do not measure individuals' perceptions of economic growth, their personal financial well-being or their beliefs about inequality. Accordingly, the analysis evaluates the distributional incidence and timing of growth, not subjective perceptions. All income measures refer to pretax income and therefore do not reflect redistribution through taxes and transfers. The outcomes are shares rather than levels: an unchanged share implies that a group's real income grows at the same rate as average income, so a stable bottom 50% share should not be read as stagnant real income for that group. The comparison between pretax and fiscal income shares indicates which parts of measured income move with the functional distribution, but it does not measure how those movements are experienced. A direct test of the gap between measured distribution and perceived economic experience would require comparable individual survey data.

Results

Growth and annual changes in distributional shares

Growth is not associated with contemporaneous changes in any of the four distributional outcomes (Table 1). The estimates are close to zero and precisely estimated. For the top 10% income share, the upper bound of the 95% confidence interval is 0.021 percentage points per percentage point of growth. At a growth rate of 3%, this bound corresponds to about 0.06 percentage points a year, less than a fifth of the average annual rise of about a third of a percentage point in the top 10% share between 1981 and the mid-2000s (Figure 1). Within this specification, therefore, the conditional annual association between growth and the top 10% share is too small to be a quantitatively important correlate of the rise in concentration over this period; the estimates do not, however, measure the total effect of growth or decompose the long-

run trend. Re-estimating Equation (10) on the same country-years without the labor-share control confirms this for the full sample: the growth coefficient on the top 10% share moves only from -0.005 to 0.002, the implied indirect association through the labor share is 0.0065 percentage points per percentage point of growth, and the three-year cumulative response is essentially unchanged (-0.013 and -0.011). In the full sample, the conditional and total associations therefore differ little. The results are unchanged across bandwidths and in non-overlapping five-year periods.

The only systematic departure from this pattern arises in the transition economies. Excluding the transition years or the transition countries turns the top 10% coefficient positive and significant. In the early 1990s, output in these economies collapsed at the same time as privatization and price liberalization raised top income shares, so that a contraction and a one-off institutional redistribution coincided. These episodes mask a positive contemporaneous association elsewhere, and its size depends on the controls. Outside the transition years, the coefficient on the top 10% share is 0.017 with the labor-share control, 0.025 without it and 0.035 when growth enters alone; at 3% growth, the latter two correspond to 0.075 to 0.10 percentage points a year, or roughly a fifth to a third of the average annual rise in the top 10% share. This association is, however, transitory: the three-year cumulative response is close to zero in every specification (0.003 to 0.006), and the conditional coefficient is not significant under the wild cluster bootstrap ($p = 0.16$ to 0.19; Appendix Table A2). The bottom 50% share, by contrast, does not move with growth in any specification. In this sense, the incidence of growth on the bottom half is proportional, as in Dollar and Kraay (2002). Growth and the controls explain little of the within-country variation in shares in any specification, with within R-squared values of at most 0.024.

Table 1. Growth coefficient from Equation (10), by specification

Specification	ΔTop 10% income	ΔBottom 50% income	D	ΔTop 10% wealth
Baseline (N = 1,693)	-0.005 (0.013)	0.005 (0.007)	-0.010 (0.020)	-0.008 (0.008)
DK maximum lag = 1	-0.005 (0.013)	0.005 (0.007)	-0.010 (0.019)	-0.008 (0.007)
DK maximum lag = 3	-0.005 (0.014)	0.005 (0.007)	-0.010 (0.020)	-0.008 (0.008)
DK maximum lag = 4	-0.005 (0.014)	0.005 (0.007)	-0.010 (0.020)	-0.008 (0.008)
Five-year periods (N = 355)	-0.011 (0.029)	0.019 (0.013)	-0.029 (0.042)	-0.011 (0.010)
Excluding outliers	0.017 (0.009)*	-0.002 (0.004)	0.022 (0.013)	-0.009 (0.004)**
Excluding transition years 1990-99 (N = 1,610)	0.017 (0.008)**	-0.005 (0.006)	0.022 (0.012)*	-0.008 (0.009)
Excluding transition countries (N = 1,333)	0.015 (0.008)*	-0.002 (0.006)	0.017 (0.013)	-0.014 (0.013)

Note: Two-way fixed effects with capital deepening and the change in the labor share as controls. Driscoll-Kraay standard errors in parentheses. Sample sizes for the outlier-excluded

*models are 1,537, 1,590, 1,548 and 1,460 for the four outcomes. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

Dynamic response to growth

Allowing for lagged responses does not change the conclusion for income. The three-year cumulative responses of the income shares are small and insignificant, and the few individually significant lag coefficients are consistent with chance, given the number of coefficients estimated. The top 10% wealth share is the exception. Its response builds gradually and becomes significant after one year, reaching a cumulative decline of about 0.025 percentage points per percentage point of growth after three years. The decline is robust to excluding outliers but not to excluding transition economies, where the point estimates are similar but imprecise. Taken at face value, it suggests that growth slightly erodes top wealth shares, possibly because growth raises the value of assets held further down the distribution, such as housing (Kuhn *et al*., 2020). Its magnitude, however, is negligible relative to a top 10% wealth share of about 60%.

Do income and wealth concentration respond at different times? The accumulation argument predicts that the income and wealth profiles should differ mainly at longer horizons: growth would raise income concentration first, and wealth concentration would follow as top groups save and accumulate. Table 2 and Figure 2 show no such pattern. The two lag profiles cannot be statistically distinguished in the baseline or for any bandwidth, and the difference between their delayed components is essentially zero in every sample. The gradual decline observed for the wealth share is therefore shared, less precisely, by the income share rather than being a delayed response specific to wealth.

If the two outcomes differ at all, they differ at short horizons and in direction rather than in timing. In the year of growth, the top income share tends to rise slightly, whereas the top wealth share tends to fall. The difference is significant in the restricted samples but not in the baseline and is therefore treated as suggestive. One interpretation is that growth raises current top incomes through profits and bonuses while also raising the value of assets held by the middle class, but the data cannot distinguish this interpretation from measurement effects.

An auxiliary regression helps explain why the lag structure is so flat. Changes in the top 10% wealth share move closely with contemporaneous changes in the top 10% income share (coefficient 0.158, SE 0.033, controlling for growth, capital deepening and the labor share), whereas lagged income changes add little. Because the WID wealth series for many countries are derived by capitalizing capital income, part of this synchronicity is built into the data, a point taken up in the Discussion.

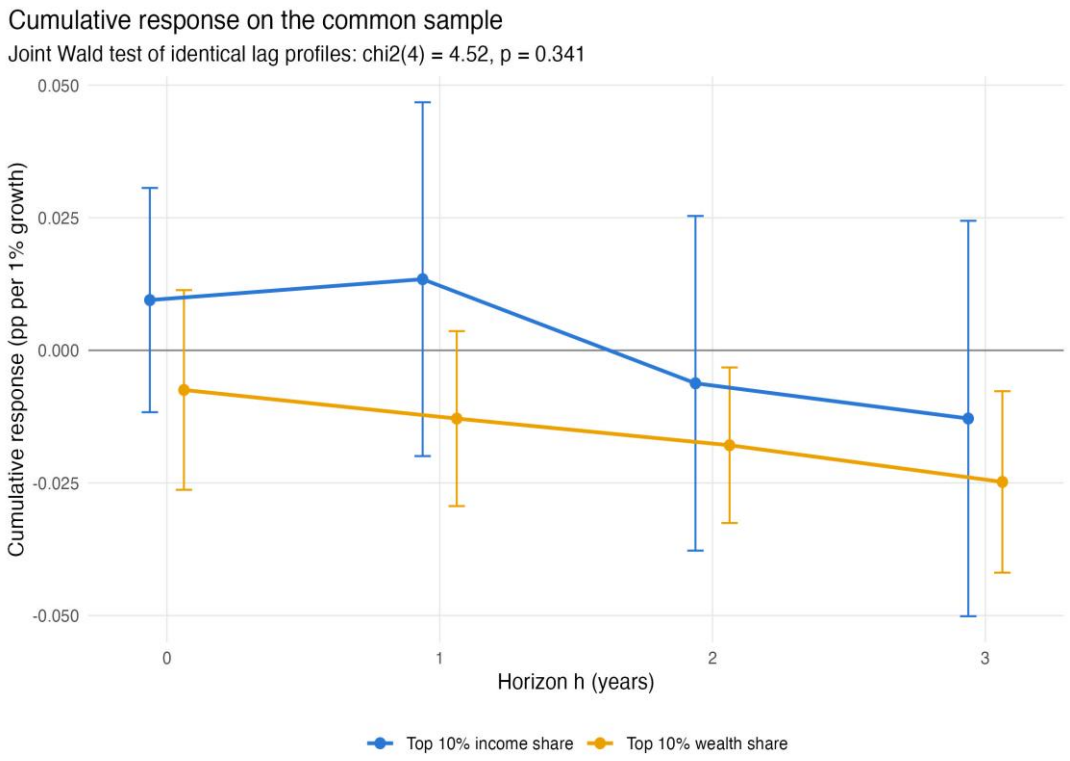


Figure 2. Cumulative response of the top 10% income and wealth shares to 1 percent GDP per capita growth, estimated on a common sample of 1,570 country-years. Bars show 95% intervals from Driscoll-Kraay standard errors. The joint Wald test of identical lag profiles gives $\chi^2(4) = 4.52$, $p = 0.341$.

Table 2. Difference between wealth and income cumulative responses to growth (top 10%)

Sample	*h = 0*	*h = 1*	*h = 2*	*h = 3*	Joint Wald χ^2 *(4)* (p)
Baseline (N = 1,570)	-0.017 (0.013)	-0.026 (0.020)	-0.012 (0.018)	-0.012 (0.022)	4.52 (0.341)
Excluding outliers (N = 1,288)	-0.024 (0.008)***	-0.029 (0.012)**	-0.015 (0.014)	-0.016 (0.014)	15.37 (0.004)
Excluding transition years (N = 1,508)	-0.020 (0.013)	-0.042 (0.016)***	-0.027 (0.015)*	-0.022 (0.015)	7.29 (0.121)
Excluding transition countries (N = 1,240)	-0.028 (0.019)	-0.035 (0.017)**	-0.026 (0.017)	-0.027 (0.018)	4.52 (0.340)

*Note: Entries are the wealth-minus-income difference in cumulative responses up to horizon h, with standard errors from the joint Driscoll-Kraay covariance matrix. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

The labor share and the distribution of pretax income

In contrast to growth, the labor share is closely associated with top income shares. In Equation (10), a one percentage point rise in the labor share is associated with a decline of about 0.11 percentage points in the top 10% income share, and the association strengthens when transition economies are excluded. To put this magnitude in perspective, a decline in the labor share of 5 percentage points, comparable to the fall observed in many economies since the 1980s

(Karabarbounis & Neiman, 2014), would be associated with a rise of roughly half a percentage point in the top 10% share. This is a meaningful but modest contribution relative to the eight-point rise in the average top share over the period.

The association is almost entirely contemporaneous. When the labor share enters with lags (Equation 15), the impact coefficient and the three-year cumulative response are nearly identical, and the result is robust across samples and to the inclusion of lagged growth. This timing is suggestive. Behavioral channels, such as changes in wage bargaining or the reallocation of activity toward high-profit firms, would be expected to unfold over several years, whereas a relationship arising from how factor income is allocated in the distributional accounts would appear within the year. The immediacy of the response is therefore more consistent with the latter, which is examined below, although simultaneous determination cannot be ruled out. For the top 10% wealth share, a negative impact response is partly reversed after three years, leaving no significant cumulative association.

The reallocation takes place mainly between the top 10% and the middle 40% (Figure 3). About four-fifths of the decline in the top share that accompanies a rise in the labor share accrues to the middle 40%, whose income consists predominantly of wages, and only about one-fifth accrues to the bottom 50%. This distribution of gains differs from what a purely mechanical composition effect would imply. Because the bottom half receives little capital income, such an effect would give it gains comparable to those of the middle 40%. The concentration of gains in the middle of the distribution suggests that the income of the bottom half depends more on employment and transfers than on the division of income between labor and capital.

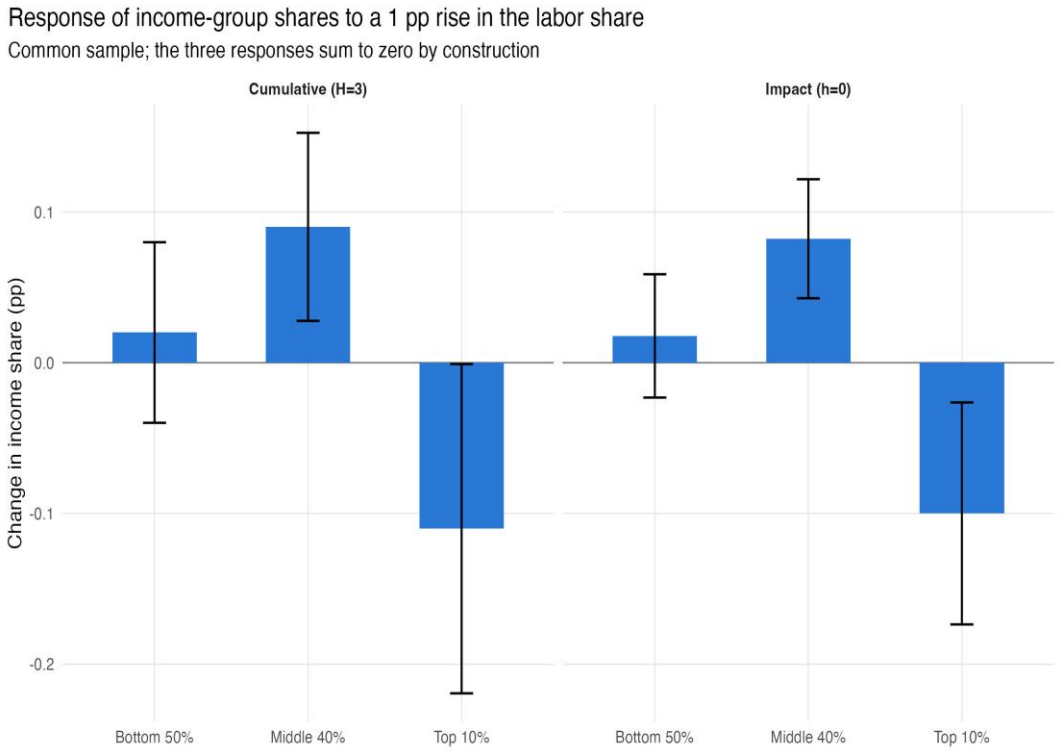


Figure 3. Response of the bottom 50%, middle 40% and top 10% pretax income shares to a 1 percentage point rise in the labor share, on a common sample (Equation 15). The three responses sum to zero by construction. Bars show 95% Driscoll-Kraay intervals.

The data provide no evidence of anticipation or of a reverse predictive relationship. Future changes in the labor share do not predict current changes in top shares, and past changes in top shares do not predict the labor share (Appendix Figure A1). These insignificant estimates do not rule out reverse causality, simultaneous determination within the year or unobserved common factors. The reverse regression also shows that the labor share falls in expansions, but the implied indirect association between growth and top shares through the labor share is negligible, which is consistent with the labor share mattering for top shares while growth does not.

Pretax versus fiscal income, and the role of retained earnings

If the association between the labor share and top income shares arises from the way national income is allocated rather than from the incomes that households receive, it should be absent from fiscal income. Table 3 and Figure 4 show that this is the case. On a common sample of 30 countries, the pretax top 10% share falls when the labor share rises, but the fiscal top 10% share does not, and the difference between the two responses is large and highly significant. The fiscal estimate is not merely imprecise, since its confidence interval excludes the pretax point estimate.



Figure 4. Response of the pretax (DINA) and fiscal top 10% income shares to a 1 percentage point rise in the labor share, estimated on the same 759 country-years for 30 countries. Bars show 95% intervals from the joint Driscoll-Kraay covariance matrix. The p-value of the difference is below 0.001 on impact and 0.001 for the cumulative response.

The divergence between the two measures is a robust feature of the data. It appears in every subsample defined by the population unit of the fiscal series, the length of the series, the period and the exclusion of transition economies, and in each of the 30 leave-one-country-out estimates (Appendix Figure A2). The pretax association itself is strongest in advanced economies with long fiscal series. It is absent among the countries whose fiscal series refer to equal-split adults, most of which are emerging or transition economies where distributional national accounts may rely more heavily on imputation.

Retained corporate profits are closely associated with the gap. When the labor share falls, the retained-earnings share rises in the same year by roughly two-thirds to three-quarters of the change in the labor share. Adding the retained-earnings share to the regressions reduces the labor-share coefficient on the pretax-fiscal gap by about 80% and renders it insignificant, and it has a similar effect on the pretax top 10% share itself (Table 3 and Figure 5). The size of this reduction depends on how the labor share is measured. When the labor share is expressed relative to net national income, whether by re-basing the PWT series or by using WID national accounts, adding retained earnings reduces the labor-share coefficient on the pretax top 10% share by about half, and the remaining coefficient stays significant (Appendix Table A3). Retained earnings therefore account for an important part, but not all, of the association. This pattern is consistent with the labor share affecting measured top income shares in part through a component of national income that distributional national accounts attribute to shareholders but that households do not receive in the same year. It does not, however, identify this pathway independently: the labor share and retained earnings are linked by national-accounts identities and are measured on different bases. Fiscal top shares respond to retained earnings only with a lag, consistent with part of these profits reaching tax records later as dividends or realized capital gains.

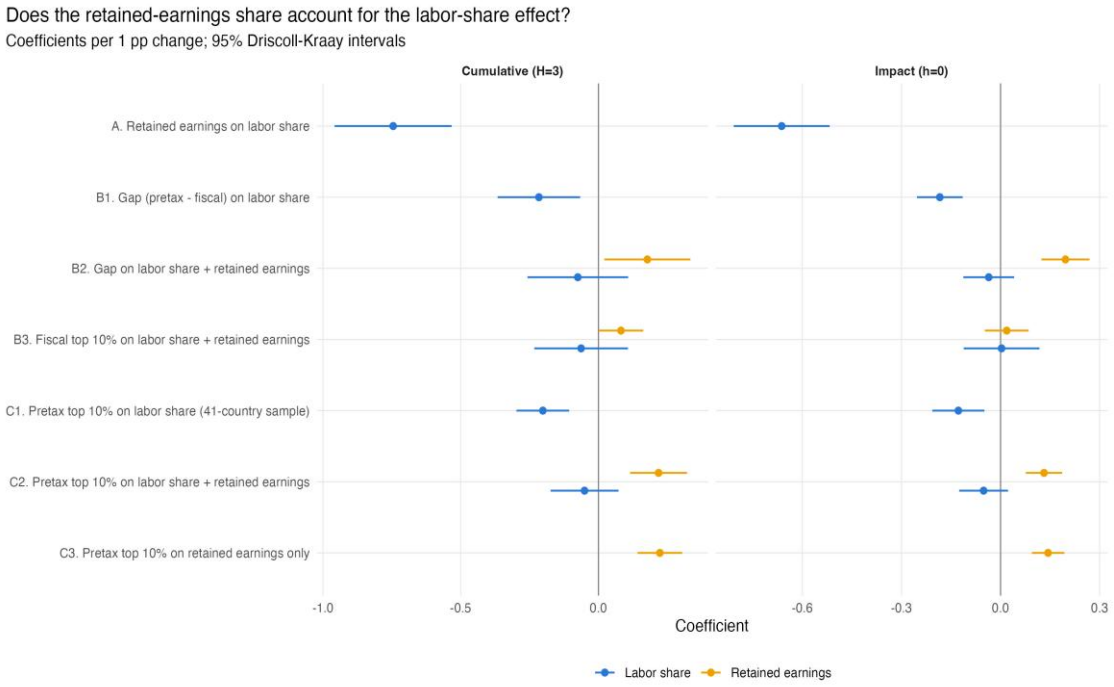


Figure 5. Labor-share and retained-earnings coefficients with and without the retained-earnings share (Equation 17). Model A regresses the retained-earnings share on the labor share; models B1-B3 use the 29-country sample with fiscal data; models C1-C3 use all 41 countries. Bars show 95% Driscoll-Kraay intervals.

Table 3. Labor-share association with the top 10% income share: pretax, fiscal and the retained-earnings channel

Model	Impact ($h = 0$)	Cumulative ($H = 3$)	Sample
Pretax (DINA) top 10% share	-0.104	-0.221	759 / 30
	(0.054)*	(0.110)**	

Model	Impact ($h = 0$)	Cumulative ($H = 3$)	Sample
Fiscal top 10% share	0.058 (0.054)	-0.043 (0.131)	759 / 30
Difference, fiscal minus pretax	0.162 (0.028)***	0.177 (0.055)***	759 / 30
Retained-earnings share on labor share	-0.662 (0.074)***	-0.745 (0.108)***	1,298 / 41
Gap (pretax - fiscal): labor share only	-0.184 (0.035)***	-0.216 (0.076)***	635 / 29
Gap: labor share, with retained earnings	-0.036 (0.039)	-0.075 (0.093)	635 / 29
Gap: retained-earnings coefficient	0.196 (0.037)***	0.178 (0.080)**	635 / 29
Pretax top 10%: labor share only	-0.128 (0.040)***	-0.202 (0.049)***	1,215 / 41
Pretax top 10%: labor share, with retained earnings	-0.051 (0.038)	-0.050 (0.063)	1,215 / 41
Pretax top 10%: retained-earnings coefficient	0.132 (0.028)***	0.218 (0.053)***	1,215 / 41

*Note: Coefficients per 1 percentage point change in the labor share (or in the retained-earnings share where indicated), from Equations (15) and (17). Sample gives country-years / countries. Driscoll-Kraay standard errors in parentheses; the pretax-fiscal difference uses the joint covariance matrix. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

Four findings emerge. First, growth is not associated with contemporaneous changes in income or wealth shares. The top 10% wealth share declines modestly in the following years, but this decline is not robust to excluding transition economies, and a small positive association with the top 10% income share appears only when transition episodes are excluded. Second, the timing pattern implied by the accumulation hypothesis, an immediate income response followed by a delayed wealth response, is not found; if the two outcomes differ, they differ in the direction of the early response, and that pattern is suggestive. Third, changes in the labor share are the most robust correlate of changes in the pretax top 10% income share, and the reallocation takes place mainly between the top 10% and the middle 40%. Fourth, in exploratory analyses, this association is absent from fiscal income in the same year and shrinks substantially once retained corporate profits, which the DINA series attribute to shareholders but tax data record only once they are distributed or realized, are controlled for. This pattern suggests that part of the difference between pretax and fiscal measures may concern the form and timing in which income reaches top groups rather than whether that income exists.

Discussion

Growth and the distribution of income shares

The absence of an association between growth and contemporaneous changes in income shares is consistent with studies that find the incomes of lower groups rising, on average, in proportion to mean income (Dollar & Kraay, 2002). It does not contradict the view that the level of inequality

evolves with the stage of development (Kuznets, 1955), because within-country annual changes cannot capture structural transformations over decades. The conceptual framework helps interpret the near-zero estimate. Because Equation (10) conditions on the change in the labor share, the growth coefficient excludes the composition channel that operates through the labor share, and that channel is in any case small, at about 0.006 percentage points per percentage point of growth. The remaining channels, which operate through the concentration of labor and capital income within the top group, can move in opposite directions: bonuses and business profits at the top tend to rise in expansions, whereas employment gains are concentrated at the bottom of the distribution. A small net association is therefore to be expected. The sensitivity of the top 10% coefficient to the transition economies is consistent with this interpretation. Once episodes in which output collapsed and top shares rose are excluded, a positive contemporaneous association emerges, but it is reversed within three years and is not robust to wild cluster bootstrap inference.

Why income and wealth concentration move together

The formal test did not find that wealth concentration responds to growth later than income concentration. This result should be interpreted with care. For many countries, the WID wealth series are constructed by capitalizing capital income flows observed in tax data, so their annual movements are partly derived from the same information as the income series. The strong contemporaneous comovement of the two series documented in the Results, and the absence of a detectable lag, may therefore reflect how wealth is estimated rather than the absence of a gradual accumulation process. The present data can show that no timing difference is detectable; they cannot establish that none exists. Wealth series based on direct observation of balance sheets, such as household wealth surveys or administrative wealth registers, would be needed to test the accumulation mechanism described in the framework.

Retained earnings and the link between functional and personal distribution

The robust association between the labor share and the pretax top 10% income share is consistent with research linking the decline of the labor share to rising income concentration (Bengtsson & Waldenström, 2018; Karabarbounis & Neiman, 2014). The comparison with fiscal income suggests how this link may operate. When the labor share falls, the resulting capital income is retained largely within corporations, a pattern in line with the rise of corporate saving documented across countries (Chen *et al*., 2017). Distributional national accounts attribute these profits to shareholders in the year they are earned, whereas tax data record them only when they are paid out or realized. The small lagged response of the fiscal top 10% share to the retained-earnings share suggests that part of these profits does reach tax records in later years, as dividends or realized capital gains.

This finding bears on the debate over the measurement of top income shares. Studies based on distributional national accounts report a larger rise in top shares than studies that rely more heavily on tax data and make different allocation assumptions (Auten & Splinter, 2024; Piketty *et al*., 2018). The results here do not favor either side. Retained earnings are real claims that increase the wealth of their owners, so they are not a statistical artifact; but they do not reach households as current income in the same year. Part of the difference between the two

approaches, at least with respect to the labor share, may therefore concern the form and timing of income rather than its existence.

The middle, the bottom, and measured versus experienced income

The share lost by the top 10% when the labor share rises accrues mainly to the middle 40%. A likely explanation is that the income of this group consists largely of wages, so that it gains most directly from a larger labor share, whereas the bottom 50% depends more on employment and on transfers, which pretax income does not capture. The stability of the bottom 50% share implies that its real income grows in line with average income, but also that the bottom half does not gain ground relative to the rest of the distribution, either with growth or with a rising labor share.

These patterns suggest two reasons why aggregate measures and household experience can diverge. First, part of the movement in measured income concentration takes place in retained earnings, which accrue to owners as wealth rather than as current household income. Second, the relative position of the bottom half changes little regardless of growth. Because the data describe realized distributions and not perceptions, these links remain hypotheses. Testing them would require survey data that record both income and perceived economic well-being.

Implications and limitations

Two cautious implications follow. For policy, the estimates indicate that increases in the labor share are associated mainly with a reallocation of income from the top 10% to the middle 40%, whereas changes in corporate payout and retention would reach household income only gradually. Because these are conditional associations, they indicate where distributional changes are likely to appear rather than their causal magnitude. For measurement, reporting pretax national income shares alongside fiscal income shares would help distinguish changes in income that households receive from changes in income that accrues to them through corporate retention.

Several limitations qualify these interpretations. The models describe within-country conditional associations and do not identify causal effects, and their explanatory power is low, with within R-squared values between about 0.002 and 0.05. All income measures are pretax and do not reflect redistribution through taxes and transfers. The analyses of the labor share, fiscal income and retained earnings were added after the prespecified models had been estimated and should be read as exploratory. Fiscal series cover 30 countries, use different population units and end in the mid-2010s for many countries. The attribution of retained earnings to shareholders is an assumption of the DINA methodology, and the labor share and retained-earnings share are measured on different bases. Some WID series rely on imputation, which may attenuate the estimated associations. The absence of significant lead and reverse-regression coefficients does not rule out simultaneous determination of the labor share and top shares, and the reduction in the labor-share coefficient when retained earnings are added is consistent with, but does not identify, a retained-earnings pathway. Finally, labsh is measured relative to GDP rather than national income, and time variation in the gap between the two is not absorbed by the fixed effects; the main associations are, however, similar when the labor share is measured relative to net national income (Appendix Table A3), although the share of the association accounted for by retained earnings is smaller under these measures.

Conclusion

This paper examined whether economic growth shifts income and wealth toward the top of the distribution, and whether income and wealth concentration respond to growth at different times, using an annual panel of 41 countries from 1980 to 2023. Three conclusions emerge.

First, growth is not associated with contemporaneous changes in income or wealth shares; the top 10% wealth share declines modestly in the following years, but not robustly, and a small positive association with the top 10% income share appears only when transition episodes are excluded. Second, the hypothesis that income concentration responds to growth immediately and wealth concentration with a delay is not supported, although the construction of the wealth data limits what can be concluded about timing. Third, changes in the labor share are robustly associated with changes in the pretax top 10% income share, with the share shifting mainly between the top 10% and the middle 40%. This association does not appear in fiscal income in the same year and shrinks substantially once retained corporate profits are controlled for; this exploratory evidence is consistent with a channel through profits that accrue to owners as wealth before they are received as income recorded in tax data, but it does not establish that channel.

Future research could extend these findings in three directions. Survey data that record both income and perceived well-being would allow a direct test of whether the gap between measured and received income corresponds to a gap in experience. Firm-level data on retained earnings and payouts would show when, and to whom, undistributed profits eventually accrue. Sources of exogenous variation in the labor share, such as changes in labor market institutions, would make it possible to move from the associations documented here toward causal estimates of how the functional distribution shapes the personal distribution of income and wealth.

Appendix A. Sample Composition and Supplementary Robustness Checks

Table A1. Countries in the sample

Country	Group	Fiscal series	Country	Group	Fiscal series
Argentina	E	-	Latvia	T	-
Australia	A	i, 1980-19	Lithuania	T	-
Austria	A	-	Luxembourg	A	-
Belgium	A	t, 1990-13	Mexico	E	-
Brazil	E	j, 2001-15	Netherlands	A	t, 1981-14
Canada	A	i, 1980-19	New Zealand	A	i, 1980-19
China	T	j, 1980-15	Norway	A	j, 2012-19
Czech Republic	T	j, 1980-15	Poland	T	j, 1983-15
Denmark	A	i, 1980-10	Portugal	A	t, 1980-05
Estonia	T	-	Republic of Korea	A	i, 1980-23
Finland	A	i, 1990-09	Russia	T	j, 1980-15
France	A	j, 1980-14	Slovakia	T	-
Germany	A	t, 1980-17	Slovenia	T	j, 1991-12
Greece	A	i, 1980-18	South Africa	E	i, 2008-12

Country	Group	Fiscal series	Country	Group	Fiscal series
Hungary	T	i, 1980-08	Spain	A	i, 1981-12
Iceland	A	-	Sweden	A	t, 1980-13
India	E	j, 1980-22	Switzerland	A	t, 1981-14
Indonesia	E	-	Türkiye	E	-
Ireland	A	t, 1980-15	United Kingdom	A	t, 1981-89
Italy	A	i, 1980-09	United States	A	j, 1980-19
Japan	A	i, 1980-23			

Note: Group: A = advanced, E = emerging, T = transition economy (excluded in the transition robustness checks; for all except China, 1990-1999 are excluded in the transition-years check). Fiscal series: population unit of the WID top 10% fiscal income share (i = individuals, t = tax units, j = equal-split adults) and first-last year available; - = not available.

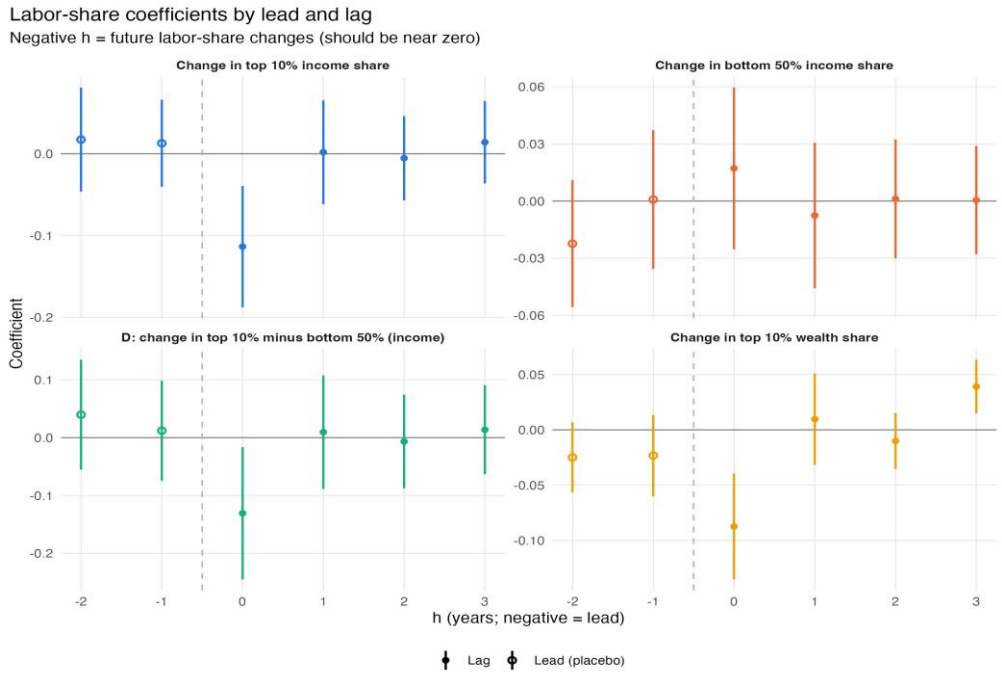


Figure A1. Labor-share coefficients by lead and lag. Coefficients on the change in the labor share from Equation (15) with two leads added, for each outcome. Open circles are leads (future labor-share changes); coefficients close to zero indicate no evidence of anticipation, although they do not rule out simultaneous determination; filled circles are the contemporaneous and lagged coefficients. The lead coefficients are jointly insignificant for every outcome (p = 0.75, 0.39, 0.65 and 0.13). Bars show 95% Driscoll-Kraay intervals; N = 1,488 country-years for 41 countries.

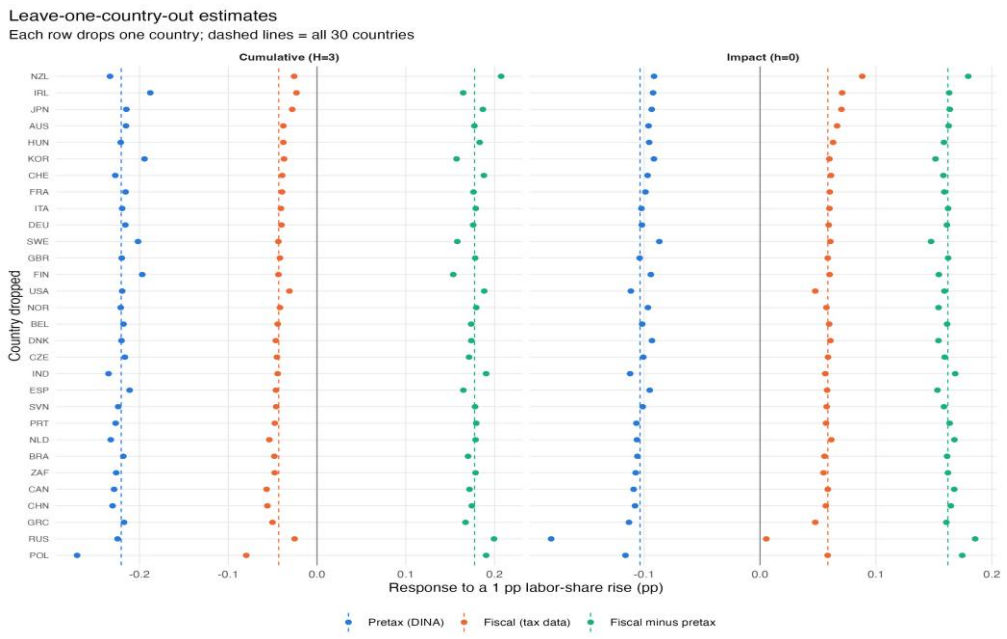


Figure A2. Leave-one-country-out estimates of the labor-share association with the pretax (DINA) and fiscal top 10% income shares and their difference. Each row re-estimates the comparison after dropping the named country; dashed lines show the estimates for all 30 countries. The fiscal-minus-pretax difference remains between 0.148 and 0.186 on impact and between 0.153 and 0.207 cumulatively, and is significant at the 5% level in all 30 cases.

Table A2. Driscoll-Kraay and wild cluster bootstrap p-values for the main coefficients

Outcome	Coefficient	Estimate	*p* (DK)	*p* (WCB, country)	*p* (WCB, year)
Top 10% income	Growth, Eq. (10)	-0.005	0.728	0.677	0.732
	Growth, Eq. (10) without labor share	0.002	0.888	0.878	0.886
	Growth, cumulative (H = 3)	-0.013	0.499	0.395	0.578
	Growth, Eq. (10), excl. transition years	0.017	0.028	0.186	0.157
	Labor share, Eq. (10)	-0.109	0.004	0.006	0.007
	Labor share, impact, Eq. (15)	-0.100	0.008	0.032	0.010
	Labor share, cumulative (H = 3), Eq. (15)	-0.110	0.048	0.066	0.149
	Labor share, impact, with retained earnings	-0.051	0.174	0.316	0.211
	Retained earnings, impact	0.132	<0.001	0.005	0.002
Bottom 50% income	Growth, Eq. (10)	0.005	0.473	0.381	0.473
	Labor share, Eq. (10)	0.034	0.130	0.049	0.172
D	Growth, Eq. (10)	-0.010	0.625	0.553	0.620
	Labor share, Eq. (10)	-0.144	0.015	0.008	0.017
Top 10% wealth	Growth, Eq. (10)	-0.008	0.279	0.225	0.309

Outcome	Coefficient	Estimate	*p* (DK)	*p* (WCB, country)	*p* (WCB, year)
Pretax-fiscal gap	Growth, cumulative (H = 3)	-0.025	0.004	0.053	0.031
	Labor share, Eq. (10)	-0.061	0.034	0.004	0.019
	Labor share, impact	-0.162	<0.001	<0.001	<0.001
	Labor share, cumulative (H = 3)	-0.177	0.001	0.007	0.015
	Labor share, impact, with retained earnings	-0.036	0.363	0.731	0.567

Note: WCB = restricted (null-imposed) wild cluster bootstrap with Rademacher weights and 9,999 replications, clustered by country (41 clusters; 30 for the pretax-fiscal gap) or by year (40 to 43 clusters). Driscoll-Kraay (DK) p-values use the normal approximation. Estimates are in percentage points per percentage point of growth or of the labor share; cumulative responses sum the coefficients over h = 0 to 3. The transition-years specification excludes 1990-1999 for the transition economies other than China.

Table A3. Labor-share coefficients under alternative measures of the labor share

Model	PWT, GDP basis (baseline)	PWT, re-based to NNI	WID, (COMP + 0.7 MI) / NNI	WID, COMP / NNI
Top 10% income, Eq. (10)	-0.112 (0.038)***	-0.102 (0.031)***	-0.134 (0.034)***	-0.128 (0.031)***
Bottom 50% income, Eq. (10)	0.035 (0.023)	0.037 (0.014)***	0.039 (0.015)***	0.042 (0.015)***
D, Eq. (10)	-0.147 (0.060)**	-0.139 (0.043)***	-0.172 (0.048)***	-0.170 (0.045)***
Top 10% wealth, Eq. (10)	-0.061 (0.029)**	-0.017 (0.011)	-0.025 (0.012)**	-0.025 (0.013)*
Top 10% income, Eq. (15), impact	-0.104 (0.038)***	-0.108 (0.035)***	-0.149 (0.036)***	-0.141 (0.033)***
Top 10% income, Eq. (15), cumulative	-0.112 (0.056)**	-0.120 (0.051)**	-0.235 (0.051)***	-0.245 (0.046)***
Pretax-fiscal gap, impact	-0.162 (0.028)***	-0.138 (0.030)***	-0.143 (0.027)***	-0.142 (0.026)***
Pretax-fiscal gap, cumulative	-0.177 (0.055)***	-0.136 (0.042)***	-0.129 (0.054)**	-0.122 (0.049)**
Retained-earnings share on labor share, impact	-0.643 (0.077)***	-0.672 (0.063)***	-0.760 (0.069)***	-0.710 (0.076)***
Pretax top 10%: labor share only	-0.133 (0.041)***	-0.169 (0.029)***	-0.206 (0.036)***	-0.188 (0.034)***
Pretax top 10%: labor share, with retained earnings	-0.047 (0.036)	-0.091 (0.021)***	-0.110 (0.025)***	-0.099 (0.023)***
Reduction in labor-share coefficient	65%	46%	47%	48%
Correlation of annual changes with baseline measure	1	0.76	0.52	0.51

Note: NNI = net national income; COMP = compensation of employees; MI = net mixed income (WID national accounts). The PWT series is re-based by the ratio of GDP to NNI. Common sample of 1,685 country-

*years for 41 countries for Equation (10); models with lags, fiscal income and retained earnings use 1,207 to 1,581 country-years (759 to 765 country-years for 30 countries for the pretax-fiscal gap). The reduction is the percentage fall in the impact coefficient on the pretax top 10% share when the retained-earnings share is added, on the same country-years. Driscoll-Kraay standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.*

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