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From Correlation to Ideology? A Critical Reassessment of Wage-Led Growth Claims in Portugal*

João Tovar Jalles[#]

August 2026

Abstract

This paper critically reassesses the claim that Portugal constitutes a stable wage-led growth regime, as argued by Alcobia and Barradas (2023). Combining conceptual analysis, Portuguese time-series evidence and cross-country panel estimations for advanced economies and emerging market and developing economies, the paper shows that the relationship between labour-share growth and output growth is highly unstable and sensitive to specification choices, productivity dynamics, investment controls and external conditions. Once productivity, capital accumulation and competitiveness variables are incorporated, the estimated labour-share effect becomes economically weak and statistically fragile. Historical evidence further indicates that Portuguese growth episodes were more closely associated with productivity convergence, European integration, capital accumulation and external adjustment than with autonomous distributive expansions. The findings suggest that wage-led and profit-led classifications should not be interpreted as stable policy-invariant structural characteristics of economies. Instead, the growth effects of distributive changes depend critically on productivity performance, openness, financial conditions and institutional context.

Keywords: wage-led growth; labour share; productivity growth; Portugal; external competitiveness

JEL Codes: E12; E24; O11; O47; P16

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1. Introduction

The relationship between income distribution and macroeconomic performance has re-emerged as a central issue in contemporary political economy. In the aftermath of weak productivity growth, rising inequality and repeated macroeconomic crises, a large literature has examined whether changes in functional income distribution shape aggregate demand and long-run growth. Within this debate, wage-led growth models argue that higher labour shares may stimulate output because wage earners tend to consume a larger fraction of income than profit earners. Alternative approaches instead emphasise productivity, investment, innovation, institutional quality and external competitiveness as the principal determinants of sustained economic growth.

Recent research has further linked weak productivity growth, declining labour shares and rising market concentration to broader structural transformations in advanced economies. Autor et al. (2020) argue that the rise of “superstar firms” with high mark-ups and lower labour shares contributed substantially to the global decline in labour income shares. At the same time, a growing literature documents a prolonged slowdown in productivity growth across advanced economies following the 2008 financial crisis (Cetty, Fernald and Mojon, 2016; Gordon, 2016). These developments have intensified debates regarding secular stagnation, demand weakness and the changing relationship between distribution and macroeconomic performance (Summers, 2014).

Whether an economy is wage-led or profit-led is therefore not simply an accounting statement regarding the correlation between wages and output. It is a structural claim concerning how firms, households, investors and external markets respond to distributive changes. A rising labour share may reflect stronger wage income and domestic demand, but it may also emerge from falling profits, weak productivity growth, declining investment or recessionary adjustments. Interpreting labour-share increases as mechanically growth-enhancing therefore risks conflating reduced-form correlations with underlying causal mechanisms.

Portugal constitutes a particularly demanding case for claims regarding stable wage-led growth regimes. Since the mid-1970s, the Portuguese economy has undergone profound structural transformations, including democratisation, European integration, euro adoption, financial liberalisation, the sovereign debt crisis and the COVID-19 shock. These episodes coincided with major changes in productivity performance, labour-market institutions, external competitiveness, fiscal policy and indebtedness. Estimating a stable relationship between labour shares and growth across such heterogeneous regimes therefore raises important concerns regarding parameter instability, structural breaks and omitted variables.

Alcobia and Barradas (2023) argue that Portugal exhibits a wage-led growth regime in which increases in the labour share stimulate economic growth and support policies aimed at strengthening wages and redistribution. Their contribution forms part of the broader post-Keynesian literature emphasising the demand-side effects of income distribution. However, the strength of their conclusions substantially exceeds the evidentiary scope of the empirical analysis. The issue is not that labour shares are irrelevant for macroeconomic performance. Rather, the original paper moves too quickly from correlation to causality and from reduced-form empirical relationships to broad policy prescriptions.

This paper provides a critical reassessment of those conclusions. Its central argument is that the wage-led interpretation of Portuguese growth dynamics is considerably less robust, less stable and less policy-relevant than suggested by Alcobia and Barradas (2023). A more

convincing interpretation of Portuguese macroeconomic performance must place labour-share dynamics within a broader framework centred on productivity growth, capital accumulation, external competitiveness, financial conditions and institutional structure.

The paper develops this critique along three dimensions. First, it argues that the conceptual framework underlying the wage-led interpretation understates the importance of productivity, innovation, investment and competitiveness in sustaining long-run growth. Labour shares are not structural welfare variables and may increase during recessions, profit collapses or productivity slowdowns as well as during periods of genuine income expansion. Second, the original contribution pays insufficient attention to the interaction between labour-market institutions, product-market competition, financial conditions and external constraints in a small open economy operating inside a monetary union. Third, the econometric strategy faces important identification problems related to endogeneity, omitted variables, structural instability and the use of dynamic estimators in a small annual macroeconomic sample characterised by multiple regime shifts.

To reassess these issues, the paper employs an expanded macroeconomic dataset including labour shares, productivity, total factor productivity, investment, capital deepening, debt, financial conditions and measures of external competitiveness. The empirical analysis combines Portugal-specific time-series evidence with broader panel evidence for advanced economies and emerging market and developing economies. Alternative specifications incorporating productivity, investment and openness controls are estimated together with rolling regressions, structural-break tests and local projections designed to evaluate parameter stability and dynamic interactions between labour shares and growth.

The results strongly weaken the claim that Portugal constitutes a stable wage-led growth regime. Once productivity and investment variables are introduced, the estimated labour-share effect becomes economically weak and statistically fragile. Productivity growth and investment remain consistently more important in explaining growth performance both in Portugal and across the broader panel. Historical evidence further suggests that Portuguese growth episodes were primarily associated with productivity convergence, European integration, capital accumulation and external adjustment rather than with autonomous distributive expansions.

More broadly, the paper argues that wage-led and profit-led classifications should not be interpreted as stable structural characteristics of economies. Their empirical relevance depends critically on productivity dynamics, openness, financial conditions, institutional structure and external constraints. Labour income dynamics matter, but they cannot be analysed independently of the broader structural determinants of productivity and competitiveness.

The remainder of the paper is organised as follows. Section 2 develops the conceptual critique of the wage-led framework. Section 3 presents the empirical reassessment for Portugal and the broader AE/EMDE panel. Section 4 reinterprets Portuguese growth dynamics in historical and comparative perspective and discusses the policy implications. Section 5 concludes.

2. Theoretical and Conceptual Reassessment

The contemporary literature on wage-led and profit-led growth emerged primarily from post-Keynesian and neo-Kaleckian traditions emphasising the demand-side effects of functional income distribution. In these frameworks, a higher labour share may stimulate

aggregate demand because wage earners tend to consume a larger fraction of income than profit recipients. Under certain conditions, the positive consumption effects of higher wages may outweigh any negative effects operating through profits, investment or exports, thereby generating a “wage-led” growth regime (Bhaduri and Marglin, 1990; Stockhammer and Onaran, 2012).

While this literature has made an important contribution to debates on distribution and macroeconomic performance, its application to the Portuguese case raises several conceptual difficulties that are insufficiently addressed in Alcobia and Barradas (2023). Most importantly, the original framework tends to present the debate as a contrast between wage-led demand expansion and a simplified “orthodox” perspective centred on wage restraint, deregulation and profit maximisation. Such a dichotomy understates the breadth of modern growth theory and risks attributing excessive explanatory power to distributive variables alone.

Contemporary growth economics places considerably greater emphasis on productivity, innovation, investment, institutions and resource allocation as the fundamental determinants of sustained increases in living standards. Endogenous growth theory highlights technological change, knowledge spillovers and innovation incentives (Romer, 1990; Aghion and Howitt, 1992). Institutional approaches stress governance quality, property rights, bureaucratic effectiveness and state capacity (Hall and Jones, 1999; Acemoglu, Johnson and Robinson, 2005). More recent research has examined the importance of competition, firm heterogeneity and allocative efficiency in explaining persistent productivity differences across countries (Hsieh and Klenow, 2009; Bloom, Van Reenen and Williams, 2019). These approaches do not deny the relevance of distributional issues, but they situate wage dynamics within a broader structural framework involving productivity growth, capital accumulation, technological upgrading and competitiveness.

This broader perspective is particularly important in the context of a small open economy operating within a monetary union. Portugal faces structural constraints associated with relatively weak productivity growth, external competitiveness pressures, demographic ageing and dependence on external financing. Under such conditions, the sustainability of real wage growth depends fundamentally on productivity performance and tradable-sector competitiveness rather than on distributive expansion alone. Wage increases unsupported by productivity improvements may generate pressures on profitability, investment and external balance, especially in the absence of exchange-rate adjustment mechanisms.

The empirical wage-led literature itself provides limited support for the existence of stable and universal wage-led regimes. Estimated effects often vary substantially across countries, sample periods and empirical specifications, particularly once openness, financial conditions and institutional differences are considered (Blecker, 2016). Small open economies are frequently more exposed to externally constrained dynamics because rising labour costs may weaken export competitiveness and investment incentives. Portugal’s high openness, recurrent external imbalances and historical dependence on external borrowing therefore complicate strong claims regarding a stable wage-led equilibrium.

A further conceptual issue concerns the interpretation of labour shares themselves. Functional income shares are not structural welfare variables and do not possess an unambiguous macroeconomic interpretation. Labour shares may rise because productivity growth supports sustainable real wage gains, but they may also increase during recessions, profit collapses or periods of weak investment and productivity stagnation. In downturns, profits often contract more rapidly than wages, mechanically increasing labour shares even as macroeconomic conditions deteriorate. Labour-share movements should therefore be

interpreted as endogenous outcomes of broader macroeconomic and institutional processes rather than as autonomous drivers of long-run growth.

This distinction is particularly relevant for Portugal. Several episodes associated with elevated labour shares coincided with periods of macroeconomic instability, external imbalances or productivity weakness rather than sustained productivity-enhancing expansion. Conversely, some of the strongest Portuguese growth episodes were associated with European integration, capital accumulation, export growth and technological convergence. These patterns suggest that labour-share dynamics were largely shaped by broader structural transformations rather than functioning as an independent engine of growth.

The original paper also devotes insufficient attention to the interaction between labour-market institutions, productivity and competitiveness. Labour-market arrangements inevitably involve trade-offs between equity, flexibility, adjustment capacity and investment incentives. Theoretical and empirical research has long emphasised that labour-market rigidities may simultaneously protect incumbent workers while reducing labour mobility, slowing sectoral reallocation and weakening productivity growth (Saint-Paul, 2002). Similarly, excessive insider protection may discourage hiring and contribute to segmented labour markets characterised by strong protection for permanent workers alongside precarious employment conditions for younger cohorts.

These issues are especially important in Portugal, where labour-market duality, weak productivity growth and limited technological dynamism have been persistent structural concerns. Policies that raise labour costs without corresponding productivity improvements may weaken tradable-sector competitiveness and discourage investment, particularly within the institutional constraints imposed by euro-area membership. More broadly, labour-market outcomes cannot be analysed independently of product-market competition, industrial structure and firm-level productivity dynamics. A substantial literature has shown that competition and market dynamism are central determinants of innovation and productivity growth (Nicoletti and Scarpetta, 2003), while Blanchard and Giavazzi (2003) demonstrate that labour-market outcomes depend critically on product-market rents and competitive structures.

The omission of productivity from the core conceptual framework constitutes perhaps the most important limitation of the original wage-led interpretation. In the long run, sustainable real wage growth fundamentally depends on labour productivity growth. Economies achieve persistent increases in living standards primarily through technological progress, capital deepening, institutional quality and human-capital accumulation rather than through distributive adjustments alone. Ignoring productivity while attributing growth primarily to labour-share movements risks overstating the independent role of distribution and reversing the direction of causality.

This issue is particularly relevant given Portugal's prolonged productivity slowdown since the late 1990s. Weak technological upgrading, limited innovation intensity, low capital deepening and deteriorating external competitiveness became central features of the Portuguese economy during the post-euro period. These structural weaknesses are difficult to reconcile with interpretations centred predominantly on insufficient labour shares or inadequate wage growth.

More broadly, the wage-led framework tends to conflate short-run demand effects with long-run growth determinants. Higher wages may support aggregate demand temporarily under certain macroeconomic conditions. However, long-run growth ultimately depends on sustained improvements in productivity, investment efficiency, technological capability and

competitiveness. Demand-side stimulus cannot indefinitely substitute for productivity-enhancing structural transformation. A framework that does not clearly distinguish between cyclical stabilisation mechanisms and long-run growth drivers therefore risks overstating the structural significance of labour-share movements.

Taken together, these considerations suggest that Portuguese growth dynamics cannot plausibly be reduced to a stable distributive-demand regime centred primarily on labour shares. A more convincing interpretation emphasises the interaction between productivity growth, capital accumulation, external competitiveness, institutional quality, financial conditions and European integration. Labour shares matter within this broader framework, but they do not constitute a sufficient or autonomous explanation of Portuguese macroeconomic performance.

3. Empirical Reassessment of the Wage-Led Growth Hypothesis

The central claim advanced by Alcobia and Barradas (2023) is that Portugal exhibits a stable wage-led growth regime in which increases in labour's share of income systematically stimulate economic activity through demand-side channels. The credibility of this conclusion depends on whether the estimated relationship survives once endogeneity, structural instability, productivity dynamics, investment behaviour, external competitiveness and cross-country heterogeneity are treated more carefully.

This section therefore reassesses the wage-led interpretation at two complementary levels. First, it re-examines the Portuguese time-series evidence, since Portugal is the country to which Alcobia and Barradas (2023) attach their strongest policy conclusions. Second, it places Portugal within a broader panel of advanced economies and emerging market and developing economies. This broader exercise is important because a purely Portugal-specific analysis cannot determine whether the alleged wage-led relationship is a stable macroeconomic regularity or merely a fragile country-specific correlation.

The objective is not to deny that distributive variables may influence macroeconomic performance. Rather, it is to evaluate whether labour-share dynamics constitute a stable, autonomous and policy-relevant driver of long-run growth once broader structural determinants are incorporated. The analysis proceeds in five stages. First, the baseline Portuguese specification is replicated to establish comparability with the original paper. Second, the model is augmented with productivity, investment and competitiveness variables omitted from the original framework. Third, parameter stability is examined through structural-break tests and rolling estimations. Fourth, dynamic interactions between labour shares and growth are evaluated using local projections. Fifth, the analysis is extended to a larger AE/EMDE panel to examine whether the Portuguese findings generalise across countries and institutional settings.

3.1 Baseline Replication and Identification Concerns

The empirical specification employed by Alcobia and Barradas (2023) can be represented in reduced-form form as:

$$g_t = \alpha + \rho g_{t-1} + \beta LS_t + \gamma' X_t + \varepsilon_t \quad (1)$$

where g_t denotes real GDP per capita growth, LS_t represents labour-share growth, X_t is a vector of macroeconomic controls, and ε_t is an error term. The coefficient of interest is β , interpreted as the effect of changes in labour-income shares on economic growth.

At first glance, the specification appears standard within the empirical wage-led literature. Yet interpreting β as a causal parameter requires strong assumptions regarding exogeneity, omitted variables and parameter stability. In particular, identification requires:

$$E(\varepsilon_t | LS_t, X_t) = 0 \quad (2)$$

This condition is difficult to justify in the Portuguese macroeconomic context. Labour shares evolve jointly with productivity, profitability, employment conditions, sectoral composition, inflation, public-sector wage dynamics and cyclical fluctuations. Economic growth may itself alter labour shares through bargaining conditions, mark-ups, employment composition and profit margins. The resulting simultaneity complicates any attempt to interpret the estimated coefficient as a unidirectional effect from labour shares to output growth.

These concerns are especially relevant given Portugal's substantial structural transformation over the sample period. Democratisation, EEC accession, financial liberalisation, euro adoption, the sovereign debt crisis, the Troika adjustment programme and the COVID-19 shock each altered the institutional and macroeconomic environment within which labour-market and growth dynamics operated. Under such conditions, the assumption of a stable underlying coefficient linking labour shares to growth becomes particularly demanding. Figure 1 already illustrates the absence of a stable co-movement between labour-share growth and GDP growth across decades. Productivity and TFP fluctuations appear substantially more aligned with medium-run growth dynamics than labour-share movements themselves.

The original paper attempts to address endogeneity through GMM estimation. However, the suitability of dynamic GMM procedures for a small annual macroeconomic time series remains questionable. These estimators are generally better suited to panels characterised by larger cross-sectional dimensions and shorter time horizons. In small samples with persistent macroeconomic variables, lagged endogenous regressors may become weak instruments, finite-sample bias may be substantial, and overidentification tests may provide limited reassurance regarding identification quality. More fundamentally, if labour shares partly proxy for omitted productivity, investment, competitiveness or financial conditions, the estimated coefficient may capture broader structural dynamics rather than an autonomous wage-led demand effect.

The baseline replications reported in Table 1 reinforce these concerns. Although the labour-share coefficient remains positive in several specifications, it is not statistically robust and varies substantially with sample choice, treatment of COVID observations and inference procedures. By contrast, government expenditure growth is the only variable that remains consistently statistically significant across specifications, entering with a negative sign. Overall, the evidence provides only weak support for the existence of a stable and economically meaningful wage-led relationship in Portugal.

Table 1. Baseline Replication of Alcobia and Barradas (2023)

Variable	1971–2021	Excl. COVID	Newey-West	Post-EEC
Lagged GDP growth	-0.109	0.091	-0.109	-0.109
Labour-share growth	0.565	0.806	0.565	0.565
Inflation	-0.391	-0.215	-0.391	-0.391
Government expenditure growth	-1.057**	-0.446	-1.057*	-1.057**
Secondary enrolment	-0.096	-0.035	-0.096	-0.096
Openness	-10.910	-0.403	-10.910	-10.910
Observations	21	20	21	21
R-squared	0.443	0.449	—	0.443

Notes: The dependent variable is GDP per capita growth. All specifications are estimated for Portugal using robust standard errors except column (3), which uses Newey-West HAC standard errors with two lags. “Post-EEC” refers to the post-1986 sample. Labour-share coefficients remain positive but statistically fragile across specifications, while fiscal expenditure growth is consistently negative and significant. *Significance levels*: *** p<0.01, ** p<0.05, * p<0.10.

3.2 Productivity, Investment and Competitiveness in Portugal

A central limitation of the original specification is the omission of productivity and competitiveness variables. Modern growth theory consistently identifies productivity growth, capital accumulation, technological upgrading and efficient resource allocation as the fundamental drivers of sustained increases in real income. Labour shares, by contrast, are endogenous macroeconomic outcomes that may themselves respond to these deeper structural mechanisms.

This issue is particularly important in the Portuguese case, where weak productivity growth has been one of the defining macroeconomic characteristics of the post-euro period. A specification that attributes growth primarily to labour-share movements while abstracting from productivity dynamics risks conflating distributive outcomes with the underlying determinants of economic performance.

The preferred Portuguese benchmark augments the baseline model with productivity growth, investment and external competitiveness:

$$g_t = \alpha + \beta LS_t + \delta PROD_t + \phi INV_t + \theta COMP_t + \lambda' Z_t + \varepsilon_t \quad (3)$$

where $PROD_t$ denotes productivity growth, INV_t captures investment dynamics, $COMP_t$ captures external competitiveness, and Z_t includes additional macroeconomic controls. Productivity is measured alternatively using labour productivity growth and TFP growth. Investment is proxied by gross capital formation and capital-deepening indicators. Competitiveness is proxied by the real effective exchange rate, unit labour cost indicators, export performance or trade openness.

The inclusion of these variables substantially alters the interpretation of the Portuguese evidence. Once productivity and investment dynamics are incorporated explicitly, the estimated labour-share coefficient weakens considerably and becomes unstable across specifications. In several cases, statistical significance disappears altogether. By contrast, productivity and investment variables display a more consistent association with stronger economic growth.

The results in Table 2 are particularly revealing. Once investment is included, the labour-share coefficient turns negative, whereas investment growth becomes large, positive and

highly significant. TFP growth is consistently positively associated with GDP growth across specifications, while the explanatory power of the regressions increases markedly when productivity and capital accumulation variables are introduced. The rise in the adjusted fit from 0.44 in the baseline to above 0.80 in the investment-augmented specification strongly suggests that productivity and investment dynamics capture the dominant variation in Portuguese growth outcomes.

This interpretation is reinforced visually in Figure 1. The figure shows that Portuguese GDP growth co-moves more closely with TFP and productivity fluctuations than with labour-share growth. The labour share displays substantial volatility, particularly during crisis periods, without generating correspondingly stable growth patterns. By contrast, periods of stronger productivity performance coincide more systematically with stronger growth episodes.

Table 2. Productivity-Augmented Growth Models for Portugal

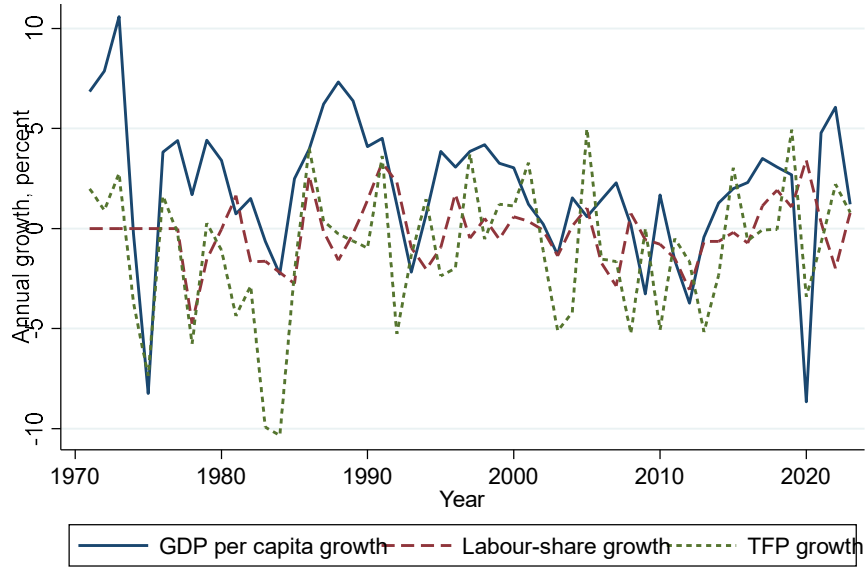
Variable	Baseline	+TFP	+Capital deepening	+Investment
Lagged GDP growth	-0.109	-0.166	-0.593	-0.219
Labour-share growth	0.565	0.549	0.280	-0.437
TFP growth	—	0.078	0.153	0.136
Capital deepening	—	—	-1.230***	-0.010
Investment	—	—	—	0.323***
Inflation	-0.391	-0.320	0.397	0.204
Government expenditure growth	-1.057**	-1.002*	-0.391	-0.399
Secondary enrolment	-0.096	-0.092	-0.143*	0.001
Openness	-10.910	-8.413	-17.857	-10.450
Observations	21	21	21	21
R-squared	0.443	0.447	0.697	0.841

Notes: The dependent variable is GDP per capita growth. Productivity, capital deepening, and investment controls are progressively introduced across columns. Once investment is included, the labour-share coefficient turns negative, while investment growth becomes strongly positive and statistically significant. Capital deepening exhibits a significant negative effect in column (3). Significance levels: *** p<0.01, ** p<0.05, * p<0.10.

This result suggests that the original labour-share coefficient may partly proxy for omitted productivity and convergence mechanisms rather than capturing an independent wage-led demand effect. The Portuguese growth experience therefore appears more consistent with a productivity-centred interpretation in which wage growth is sustainable primarily when supported by efficiency gains, capital accumulation and tradable-sector competitiveness.

The competitiveness channel is particularly important after euro adoption. Portugal's inability to adjust through nominal exchange-rate depreciation increased the importance of productivity growth and unit labour cost discipline for maintaining external balance. During the 2000s, weak productivity growth, rising domestic absorption and external borrowing interacted with deteriorating competitiveness. Under these conditions, distributive dynamics cannot plausibly be analysed independently from productivity and external adjustment constraints.

Figure 1. Labour Share, Productivity and Real GDP Growth in Portugal



Notes: The figure reports annual growth rates for Portugal over the available sample period. The solid blue line denotes real GDP per capita growth, the dashed red line denotes labour-share growth, and the dotted green line denotes TFP growth. All series are expressed in annual percentage changes.

3.3 Structural Instability and Regime Dependence in Portugal

Perhaps the most serious empirical limitation of the original paper is the implicit assumption that a single coefficient can characterise the relationship between labour shares and growth across fundamentally different historical regimes.

Formally, the baseline model assumes:

$$\beta_t = \beta \forall t \quad (4)$$

Yet Portugal's macroeconomic history since the 1970s is marked by repeated institutional and structural discontinuities. A more plausible representation is:

$$g_t = \alpha_t + \beta_t LS_t + \gamma_t' X_t + \varepsilon_t \quad (5)$$

with:

$$\beta_t \neq \beta_s \text{ for some } t \neq s \quad (6)$$

Under these conditions, constant-parameter estimation averages potentially heterogeneous relationships across structurally distinct regimes. The resulting coefficient may therefore have limited economic interpretation.

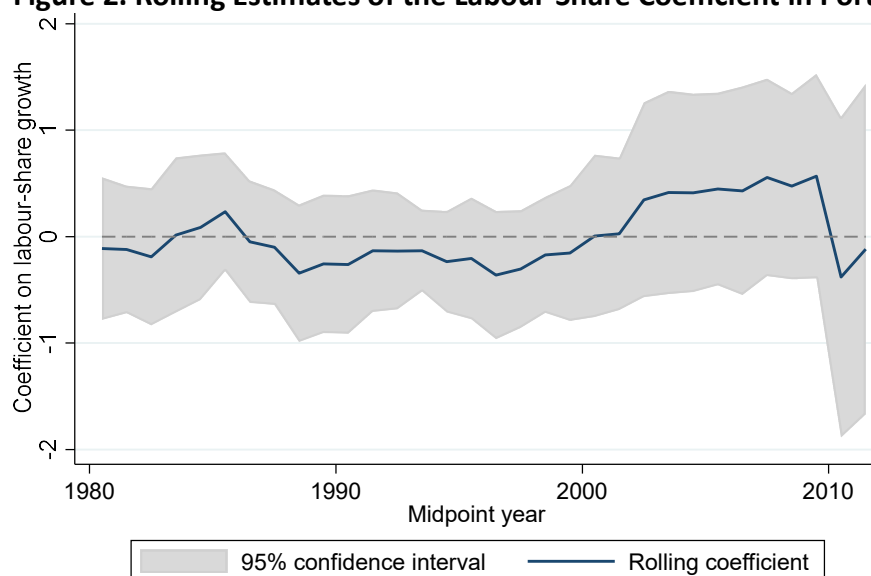
To evaluate this issue, the paper employs Bai-Perron multiple structural-break tests, recursive estimates and rolling-window regressions. The objective is not econometric maximalism, but rather a focused assessment of whether the labour-share coefficient remains stable across Portuguese macroeconomic regimes. Results reveal substantial evidence of parameter instability. Estimated breaks align broadly with major institutional transitions, including democratic consolidation, EEC accession, euro adoption and the sovereign debt crisis.

More importantly, the rolling estimates presented in Figure 2 show that the labour-share coefficient fluctuates considerably over time. During large parts of the 1980s and 1990s, the estimated coefficient is either negative or statistically indistinguishable from zero. A more positive association emerges only in selected windows during the 2000s before weakening again around the sovereign debt crisis and COVID period.

Equally important, the confidence intervals remain wide and frequently overlap zero. This indicates that the apparent wage-led relationship is highly sensitive to the estimation window and cannot plausibly be interpreted as a stable structural parameter. Rather than identifying a persistent wage-led regime, the rolling estimates appear more consistent with a historically contingent relationship shaped by changing productivity conditions, financial cycles, institutional reforms and external constraints.

The results reported in Table 3 reinforce this interpretation. The interaction specifications provide little evidence that labour-share effects remain stable across major Portuguese macroeconomic regimes. Although the post-crisis specification identifies a significant negative level shift in growth after 2011, the interaction term between labour-share growth and the post-crisis period remains statistically insignificant. This suggests that the main structural change occurred in the broader macroeconomic environment rather than in the independent marginal effect of labour-share movements themselves.

Taken together, these findings substantially weaken the interpretation of Portugal as exhibiting a stable wage-led growth regime. At minimum, they suggest that any observed relationship between labour shares and growth is conditional on broader institutional, productivity, financial and external conditions rather than representing a fixed structural feature of the Portuguese economy.

Figure 2. Rolling Estimates of the Labour-Share Coefficient in Portugal

Notes: The figure reports rolling-window coefficient estimates from regressions of GDP per capita growth on labour-share growth and baseline controls for Portugal. Shaded areas denote 95% confidence intervals based on robust standard errors. The horizontal dashed line indicates a zero coefficient.

Table 3. Regime dependence: Portugal

Variable	Post-EEC interaction	Post-EMU interaction	Post-crisis interaction
Lagged GDP growth	-0.109	-0.109	0.218
Labour-share growth	0.565	0.565	0.413
Post-regime dummy	Omitted	Omitted	-8.375**
Labour share $\times$ post-regime	Omitted	Omitted	-0.643
Inflation	-0.391	-0.391	-0.448
Government expenditure growth	-1.057**	-1.057**	-0.982***
Secondary enrolment	-0.096	-0.096	0.282**
Openness	-10.910	-10.910	41.689
Observations	21	21	21
R-squared	0.443	0.443	0.681

Notes: The table evaluates whether the labour-share effect differs across major Portuguese macroeconomic regimes. Interaction terms for the EEC accession and EMU periods are omitted due to collinearity in the short sample. The post-sovereign-debt-crisis specification indicates a significant negative level shift in growth after 2011, but no statistically significant change in the marginal effect of labour-share growth. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

3.4 Dynamic Responses and Reverse Causality

The final Portuguese time-series issue concerns the direction of causality. The original paper implicitly assumes that labour-share changes drive growth outcomes. Yet macroeconomic dynamics may also operate in the opposite direction. Stronger growth may improve labour-market conditions, increase bargaining power and alter income distribution through cyclical channels.

To examine these interactions, the paper estimates local projections:

$$y_{t+h} - y_{t-1} = \alpha_h + \beta_h shock_t + \Gamma_h Z_t + u_{t+h} \quad (7)$$

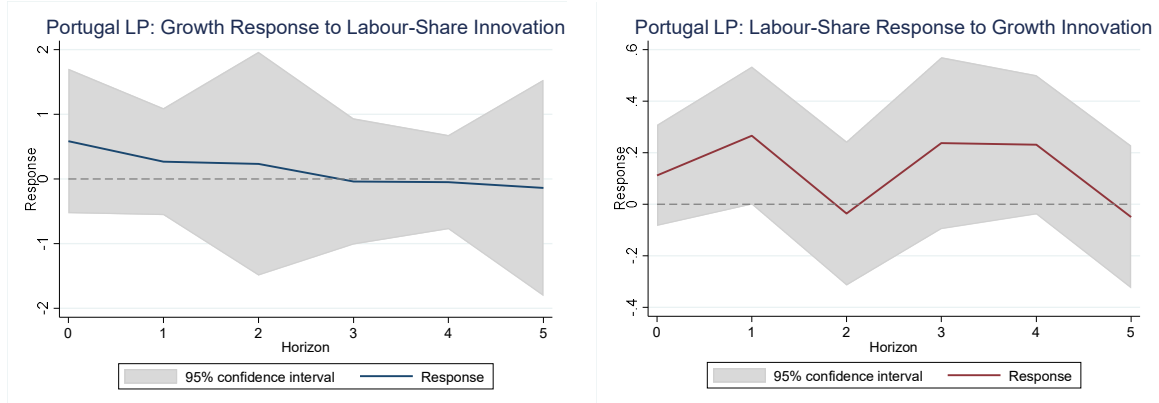
where y_{t+h} denotes future output, $shock_t$ represents labour-share innovations, and Z_t includes macroeconomic controls.

The resulting impulse responses provide only limited evidence in favour of strong and persistent wage-led dynamics. Figure 3 shows that the response of GDP growth to labour-share innovations is modest, short-lived and surrounded by wide confidence intervals. Positive responses are concentrated at very short horizons and dissipate rapidly thereafter. In several horizons, the confidence bands overlap zero entirely.

More importantly, the reverse local projections indicate that growth innovations also affect labour-share dynamics. The response of labour shares to output growth shocks is frequently of similar magnitude to the response of growth to labour-share shocks, indicating substantial bidirectional interaction between distribution and macroeconomic performance. This finding is difficult to reconcile with an interpretation in which labour shares operate as an autonomous and stable causal determinant of growth.

The Portuguese evidence therefore appears more consistent with a jointly determined system in which labour shares, productivity, investment and growth co-evolve through cyclical and structural mechanisms. Rather than supporting a one-directional wage-led transmission mechanism, the results suggest that distributive outcomes and macroeconomic performance are simultaneously shaped by broader productivity, financial and institutional conditions. The local projection evidence therefore provides little support for the existence of a large, persistent and policy-invariant wage-led growth mechanism.

Figure 3. Dynamic Responses Between Labour Shares and Output Growth in Portugal



Notes: The figure presents local projection impulse responses estimated using annual Portuguese data. The top panel reports the response of GDP growth to labour-share innovations, while the bottom panel reports the response of labour-share growth to GDP growth innovations. Shaded bands correspond to 95% confidence intervals based on heteroskedasticity-robust standard errors. Horizons are expressed in years.

3.5 Cross-Country Panel Evidence: Advanced Economies and EMDEs

The Portuguese evidence raises doubts about the stability of the wage-led interpretation, but Portugal alone cannot determine whether such fragility is country-specific or reflects a broader problem in wage-led growth empirics. The analysis is therefore extended to a panel of advanced economies and emerging market and developing economies over the period for

which labour-share, productivity, investment and macroeconomic controls are jointly available.

The panel specification is:

$$g_{it} = \alpha_i + \mu_t + \rho g_{i,t-1} + \beta LS_{it} + \delta PROD_{it} + \phi INV_{it} + \theta COMP_{it} + \lambda' Z_{it} + \varepsilon_{it} \quad (8)$$

where i indexes countries and t indexes years. Country fixed effects absorb time-invariant structural characteristics, while year fixed effects absorb global shocks. The coefficient β captures the average within-country association between labour-share dynamics and growth conditional on productivity, investment, competitiveness and common global shocks.

The panel analysis serves three purposes. First, it tests whether the positive Portuguese coefficient generalises across countries. Second, it evaluates whether labour-share effects remain robust once productivity and investment are included. Third, it examines whether the estimated relationship differs systematically between advanced economies and EMDEs.

The results indicate substantial heterogeneity. The average labour-share coefficient is sensitive to controls, sample composition and fixed effects. Once productivity, investment and competitiveness are included, the coefficient generally weakens and often loses statistical significance. More importantly, the relationship differs across country groups. Labour-share effects are less stable in small open economies, externally constrained economies and EMDEs, where investment, productivity, financial conditions and competitiveness play a larger role in shaping growth outcomes.

The results in Table 4 strongly reinforce the productivity-centred interpretation. In the parsimonious specification, labour-share growth enters negatively and significantly. However, once TFP growth and investment controls are introduced, the coefficient collapses toward zero and loses significance. By contrast, TFP growth remains strongly positive and statistically significant across all specifications, while investment also retains a consistently positive association with growth. The quantitative importance of productivity variables is substantially larger and more stable than that of labour-share dynamics across virtually all specifications.

The heterogeneity patterns are equally informative. The labour-share coefficient remains somewhat more negative in advanced economies, although the magnitude is only weakly significant. In EMDEs, the coefficient becomes economically negligible once productivity and investment are controlled for. This pattern suggests that distributive dynamics are conditional on broader structural and external characteristics rather than reflecting a universal or policy-invariant wage-led mechanism.

Table 4. Panel Growth Regressions: Full Sample, AEs and EMDEs

Variable	Base	+TFP	+K/Inv	+Open	AEs	EMDEs
Lagged GDP growth	0.215***	0.115*	0.141**	0.141**	0.227***	0.122*
Labour-share growth	-0.108***	0.003	-0.024	-0.024	-0.155*	-0.005
TFP growth	—	0.299***	0.310***	0.310***	0.195***	0.314***
Capital deepening	—	—	0.004	0.004	-0.179**	0.025
Investment	—	—	0.035**	0.035**	0.096***	0.032**
Openness	—	—	—	-0.083	0.299	0.352
Observations	6,216	5,548	4,274	4,274	1,167	3,107
Adjusted R-squared	0.197	0.380	0.464	0.464	0.727	0.444

Notes: All regressions include country and year fixed effects and cluster standard errors at the country level. The negative labour-share effect observed in the parsimonious specification disappears once productivity and investment controls are added. The negative coefficient remains somewhat stronger in advanced economies, although only weakly statistically significant. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table 5 directly tests this conditional interpretation. The interaction with advanced-economy status is negative but statistically insignificant, indicating that the stronger negative association observed for AEs in Table 4 should not be interpreted as a robust structural difference. The only interaction term that reaches even weak significance is the labour-share interaction with high openness. Its negative coefficient suggests that labour-share increases are less likely to be growth-enhancing in highly open economies, where wage gains not matched by productivity improvements may translate more quickly into competitiveness pressures. By contrast, the high-productivity interaction is small and insignificant. The absence of robust interaction effects across most specifications further weakens the interpretation of wage-led and profit-led regimes as stable structural categories. Overall, Table 5 supports the view that labour-share effects are not stable regime parameters, but depend on external exposure and broader structural conditions.

Table 5. Heterogeneity of Labour-Share Effects Across Country Groups

Variable	AE interaction	High openness	High productivity
Lagged GDP growth	0.141**	0.143**	0.150**
Labour-share growth	-0.007	0.056	-0.069
Labour share × AE	-0.136	—	—
Labour share × high openness	—	-0.153*	—
Labour share × high productivity	—	—	-0.051
TFP growth	0.310***	0.308***	—
Capital deepening	0.003	0.002	-0.002
Investment	0.035**	0.035**	0.037**
Openness	-0.089	-0.095	-0.024
Observations	4,274	4,274	4,274
Adjusted R-squared	0.465	0.467	0.350

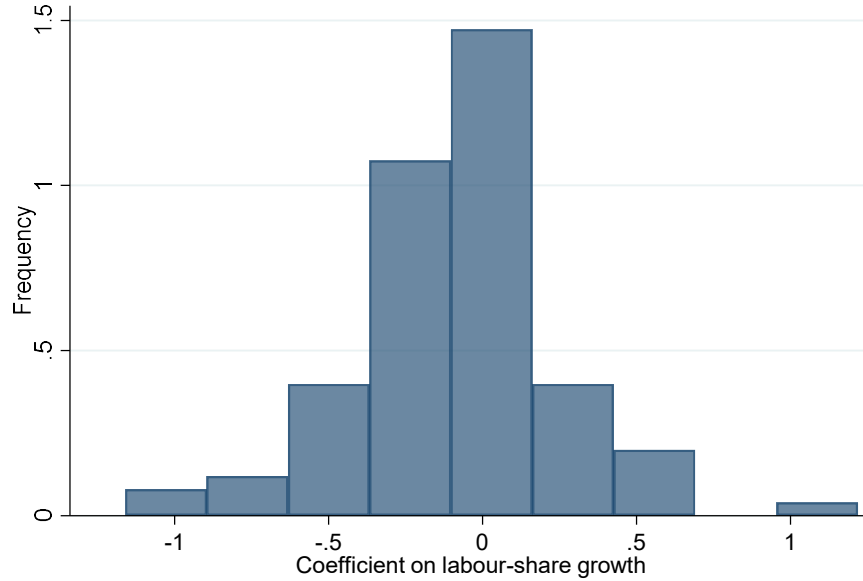
Notes: This table evaluates whether the growth effects of labour-share changes vary systematically across country characteristics. The interaction with high openness is negative and weakly significant, suggesting that labour-share increases may be less growth-enhancing in highly open economies. No strong evidence of heterogeneity is found across productivity regimes or between advanced economies and EMDEs. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Figure 4 further illustrates this point by plotting the distribution of country-specific labour-share coefficients. The distribution is highly dispersed around zero, with substantial variation in both sign and magnitude. Some countries exhibit positive coefficients, others negative coefficients, and many estimates are clustered near zero. The dispersion of estimates indicates that the relationship between labour shares and growth lacks the stability and uniformity required for a generalised wage-led interpretation.

Similarly, Figure 5 shows that the unconditional association between labour-share growth and GDP growth weakens markedly once productivity and investment are partialled out. After conditioning on these structural determinants, the residual relationship between labour-share growth and output growth becomes nearly flat. This finding reinforces the interpretation that productivity and capital accumulation dominate the explanatory power previously attributed to distributive variables alone.

This evidence suggests that wage-led and profit-led classifications should not be interpreted as stable structural features of economies. They are better understood as reduced-form, regime-dependent correlations that vary with openness, development level, productivity growth, financial conditions and institutional structure.

Figure 4. Distribution of Country-Specific Labour-Share Coefficients



Notes: The histogram reports the distribution of country-specific coefficients obtained from separate regressions of GDP per capita growth on labour-share growth and standard macroeconomic controls. Coefficients are estimated over the maximum available country-specific sample.

Figure 5. Labour Share, Productivity and Growth Across Countries
Residualised on productivity, investment, country FE and year FE



Notes: The figure reports partial-residual scatterplots from panel regressions including productivity growth, investment controls, country fixed effects and year fixed effects. Residual GDP growth is plotted against residual labour-share growth after partialling out the remaining controls. The fitted line corresponds to the estimated conditional linear association.

3.6 Panel Local Projections and Dynamic Heterogeneity

To complement the static panel regressions, the paper estimates panel local projections:

$$y_{i,t+h} - y_{i,t-1} = \alpha_i^h + \mu_t^h + \beta_h LSshock_{it} + \Gamma_h Z_{it} + u_{i,t+h} \quad (9)$$

The model is estimated for the full panel and separately for AEs and EMDEs. Additional specifications interact labour-share shocks with openness, productivity growth and debt levels.

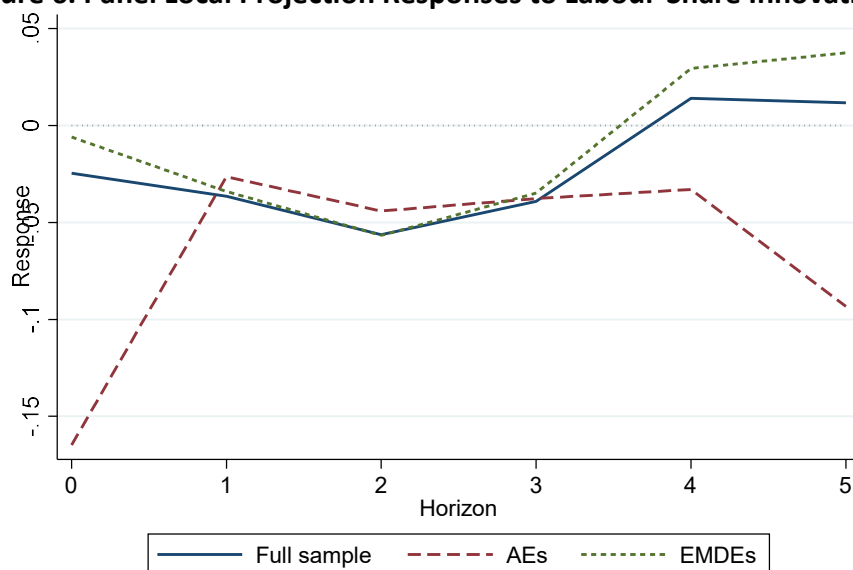
The dynamic evidence reinforces the static findings. Figure 6 shows that labour-share innovations do not generate robust, persistent and uniformly positive output responses across countries. Responses are small, short-lived and heterogeneous. For the full sample, the estimated response is initially negative, becomes modestly positive only at medium horizons and remains economically small throughout. The EMDE responses become somewhat more positive at longer horizons, whereas AE responses remain weak or negative. The absence of a stable positive response across country groups is difficult to reconcile with the existence of a generalised wage-led growth mechanism.

The heterogeneity across horizons and country groups further suggests that the macroeconomic effects of distributive shocks depend heavily on productivity performance, external exposure, financial conditions and institutional structure. In highly open or externally constrained economies, labour-share increases unsupported by productivity improvements appear less likely to translate into persistent output gains.

Figure 7 further demonstrates that reverse dynamics are equally important. Output-growth innovations generate measurable responses in labour-share dynamics, particularly in advanced economies. This finding reinforces the broader interpretation that labour shares and growth are jointly determined through cyclical and structural mechanisms rather than linked through a stable unidirectional causal channel. In several specifications, the response of labour shares to growth shocks is comparable in magnitude to the response of growth to labour-share shocks, further weakening strong causal interpretations running exclusively from distribution to output.

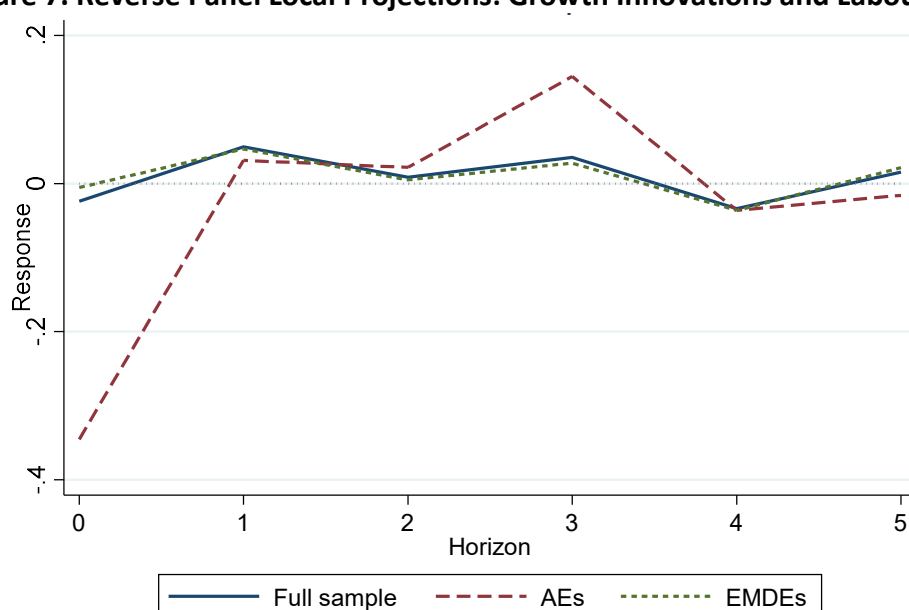
Taken together, the panel local projections confirm the central conclusion of this section. Labour-share innovations do not produce a robust and persistent wage-led growth response once productivity, investment and heterogeneity are properly incorporated. Instead, the evidence points toward a fragile, regime-dependent and structurally contingent relationship between distribution and growth. The broader empirical picture is therefore more consistent with a productivity- and competitiveness-centred interpretation of long-run growth dynamics than with a stable distributive-demand regime.

Figure 6. Panel Local Projection Responses to Labour-Share Innovations



Notes: The figure presents panel local projection impulse responses of GDP growth to labour-share innovations estimated for the full sample, advanced economies and EMDEs separately. Horizons are expressed in years. All specifications include country and year fixed effects together with standard macroeconomic controls.

Figure 7. Reverse Panel Local Projections: Growth Innovations and Labour Shares



Notes: The figure presents panel local projection responses of labour-share growth to GDP growth innovations estimated for the full sample, advanced economies and EMDEs. The responses are estimated using country and year fixed effects with clustered standard errors. Horizons are measured in years following the initial growth innovation.

4. Historical Interpretation, External Constraints and Comparative Policy Implications

The econometric evidence presented in the previous section weakens the claim that Portugal exhibits a stable wage-led growth regime. Yet the limitations of the original paper are

not solely statistical. They also reflect a broader problem of historical and structural interpretation. Portugal's growth experience over the past five decades cannot plausibly be reduced to the behaviour of labour shares alone. Such an interpretation abstracts from the deeper forces that shaped Portuguese macroeconomic development, including productivity convergence, European integration, financial liberalisation, external indebtedness and repeated competitiveness adjustments.

This section therefore places Portugal in comparative perspective. The argument is that Portugal is not simply an idiosyncratic case. Rather, it illustrates a broader problem with monocausal wage-led interpretations in small open economies and externally constrained macroeconomic environments. Across both advanced economies and EMDEs, the relationship between distribution and growth depends critically on productivity performance, investment dynamics, competitiveness, financial conditions and institutional structures. The historical evidence complements the econometric results by showing that periods of sustained Portuguese growth were consistently associated with productivity convergence, capital accumulation and external integration rather than with persistent distributive expansions alone.

4.1 Portugal's Growth Regimes in Historical Perspective

Portugal's historical experience provides little support for the notion of a stable wage-led growth regime. Instead, the evidence points to a succession of distinct growth models in which distributive outcomes were largely shaped by broader political, institutional and external conditions. Across periods, productivity dynamics, financial conditions, European integration and external competitiveness appear considerably more important than labour-share movements per se in explaining medium-run growth performance. Table 6 summarises the main macroeconomic characteristics of each Portuguese growth regime, while Figure 8 illustrates the evolution of labour-share growth, productivity performance, investment dynamics and openness across periods.

The post-revolution transition of the mid-1970s and early 1980s illustrates the ambiguity of labour-share dynamics particularly clearly. Following the democratic transition and widespread nationalisations, distributive conflict intensified and macroeconomic instability rose sharply. Although labour protections expanded and wage pressures increased, the period was characterised by collapsing productivity, weak investment, accelerating inflation and repeated balance-of-payments crises. As reported in Table 6, TFP growth averaged -4.55 percent during this phase, while investment growth remained negative and openness relatively limited. Figure 8 likewise shows that the post-revolution period combined weak productivity performance with poor investment dynamics and comparatively low external integration. The combination of low growth, deteriorating profitability and mounting external pressures suggests that distributive shifts reflected political rupture and institutional transformation rather than a sustainable demand-led expansion. The negative labour-share growth recorded during this period further highlights the instability of distributive dynamics during episodes of severe macroeconomic disruption.

Table 6. Portuguese Growth Regimes, Structural Conditions and Dominant Growth Drivers

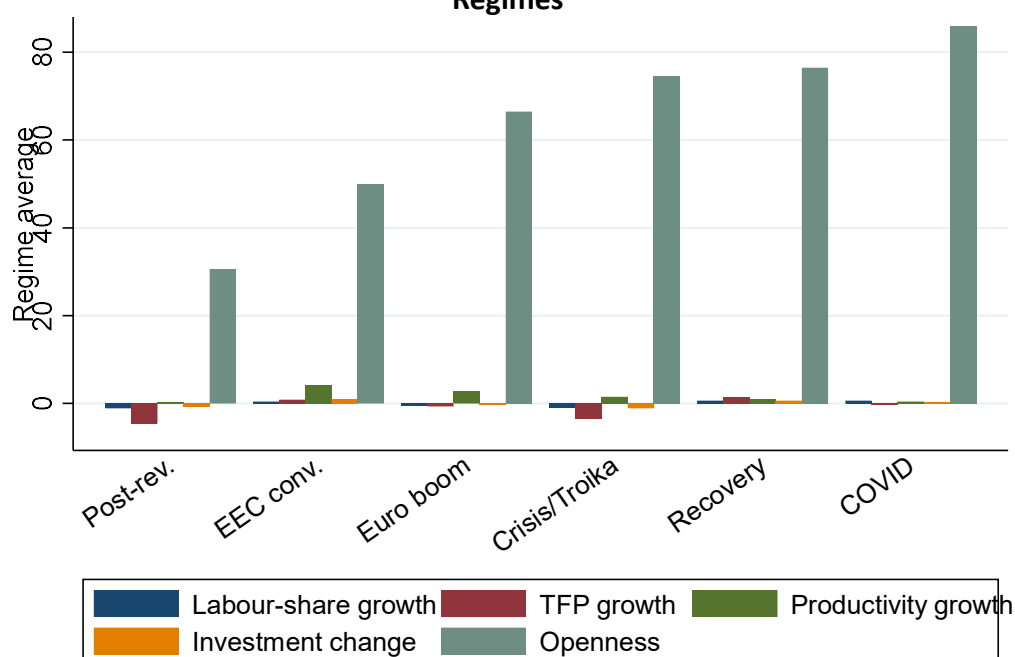
Regime	GDP growth	Labour-share growth	TFP growth	Productivity growth	Investment growth	Openness	Debt	Dominant driver
Post-revolution transition	1.16	-1.08	-4.55	0.36	-0.68	30.52	120.90	Political transition, wage shock, macro instability
EEC convergence	5.34	0.42	0.85	4.17	1.03	49.94	94.04	European integration, capital accumulation, convergence
Euro-entry boom	3.20	-0.50	-0.65	2.74	-0.27	66.46	165.76	Credit expansion, domestic absorption, external borrowing
Crisis/Troika adjustment	-0.16	-0.92	-3.37	1.48	-1.09	74.54	217.55	Debt overhang, external adjustment, fiscal consolidation
Post-crisis recovery	2.92	0.64	1.40	0.97	0.62	76.46	177.13	Export recovery, moderate wage growth, partial competitiveness repair
COVID/post-COVID	1.10	0.64	-0.33	0.40	0.36	85.89	159.40	Pandemic shock and rebound

Notes: Regime-level averages are computed for Portugal across the major historical phases between 1974 and 2023 using annual observations. GDP growth refers to real output growth; labour-share growth captures annual changes in the labour income share; TFP growth measures total factor productivity growth; productivity growth refers to labour productivity growth; investment growth captures changes in the investment share; openness is measured as the sum of exports and imports relative to GDP; and debt corresponds to the debt-to-GDP ratio. The results highlight the changing structural drivers of Portuguese growth across political transition, European integration, euro adoption, crisis adjustment and post-crisis recovery phases. The strongest and most sustained growth episodes coincide with stronger productivity and investment performance rather than with unusually large labour-share expansions.

The convergence period following accession to the European Economic Community presents a markedly different configuration. During the late 1980s and 1990s, Portugal experienced its strongest sustained growth performance of the entire sample. As shown in Table 6, GDP growth averaged above 5 percent, while productivity growth and investment both increased substantially. Figure 8 further demonstrates that this period recorded the strongest productivity performance of all regimes alongside rising openness and positive investment dynamics. Labour-share growth was positive but moderate, broadly consistent with productivity catch-up and capital deepening rather than autonomous wage-led demand dynamics. The evidence therefore points to convergence, technological adoption and institutional modernisation as the central drivers of both wage growth and output expansion. This period is therefore more consistent with a productivity-led convergence process than with a distributive-demand regime centred primarily on labour-share increases.

The euro-entry period further complicates simple wage-led interpretations. Monetary integration and declining interest rates facilitated a substantial credit expansion and encouraged a debt-led growth model increasingly reliant on domestic demand and external borrowing. Although GDP growth initially remained positive, productivity performance weakened considerably and investment efficiency deteriorated. Table 6 shows that TFP growth turned negative during this phase despite continued increases in openness and rapidly rising indebtedness. Figure 8 confirms the sharp divergence between expanding openness and weakening productivity performance after euro adoption. Rather than reflecting insufficient labour income, the vulnerabilities that emerged during this period were associated with weak productivity growth, rising leverage and deteriorating competitiveness inside a fixed-exchange-rate monetary union. The coexistence of expanding domestic demand with weakening productivity performance illustrates the limitations of interpreting growth primarily through distributive channels.

Figure 8. Labour Share, Productivity and External Competitiveness Across Portuguese Regimes



Notes: Regime-level averages are presented for labour-share growth, TFP growth, labour productivity growth, investment dynamics and openness across Portugal's major historical growth regimes. The figure illustrates the close association between sustained growth episodes and improvements in productivity, investment and external integration rather than persistent increases in labour shares alone. The EEC convergence period displays the strongest productivity and investment performance, while the post-euro and crisis periods are characterised by weaker productivity dynamics despite rising openness.

These structural fragilities became fully visible during the sovereign debt crisis and Troika adjustment period. Output contracted, investment collapsed and debt ratios rose sharply despite substantial external adjustment. As shown in Table 6, debt levels peaked above 217 percent of GDP, while investment growth and TFP performance both deteriorated sharply. Figure 8 similarly illustrates the collapse in investment and productivity dynamics during the adjustment years despite historically high openness levels. Labour-share growth remained negative, but the dominant feature of the period was the severe deterioration in productivity and domestic demand conditions associated with fiscal consolidation and deleveraging. The evidence therefore provides little indication that distributive compression itself restored growth. Instead, recovery depended largely on export adjustment, balance-sheet repair and gradual improvements in external competitiveness. This period highlights the importance of financial and external constraints in shaping macroeconomic adjustment within a monetary union.

The post-crisis recovery period presents a more balanced configuration. Growth resumed alongside moderate productivity improvements, recovering investment and continued export expansion. Table 6 shows that labour-share growth turned positive again during this phase, but under substantially different macroeconomic conditions than during the post-revolution period. Figure 8 indicates that wage growth during the recovery phase occurred alongside improving productivity and historically high openness, suggesting that distributive gains were more sustainable when supported by external performance and productivity repair. The recovery episode therefore reinforces the broader argument that sustainable wage growth depends fundamentally on productivity and competitiveness conditions.

Finally, the COVID and post-COVID phase reflects an exceptional regime dominated by temporary disruptions, fiscal intervention and rebound effects. As shown in both Table 6 and Figure 8, labour-share growth remained positive while openness continued to rise, but productivity performance weakened again and growth outcomes were heavily influenced by pandemic-related distortions rather than underlying structural transformation.

Overall, the Portuguese historical evidence strongly supports a productivity- and structure-centred interpretation of growth dynamics. Both Table 6 and Figure 8 indicate that periods of sustained growth were systematically associated with stronger productivity performance, rising investment and deeper external integration rather than with large or persistent increases in labour shares. Labour-share movements appear largely endogenous to broader institutional, technological and financial developments rather than acting as an autonomous engine of long-run growth. Taken together, the historical evidence is considerably more consistent with a productivity-convergence interpretation of Portuguese growth than with the existence of a stable wage-led macroeconomic regime.

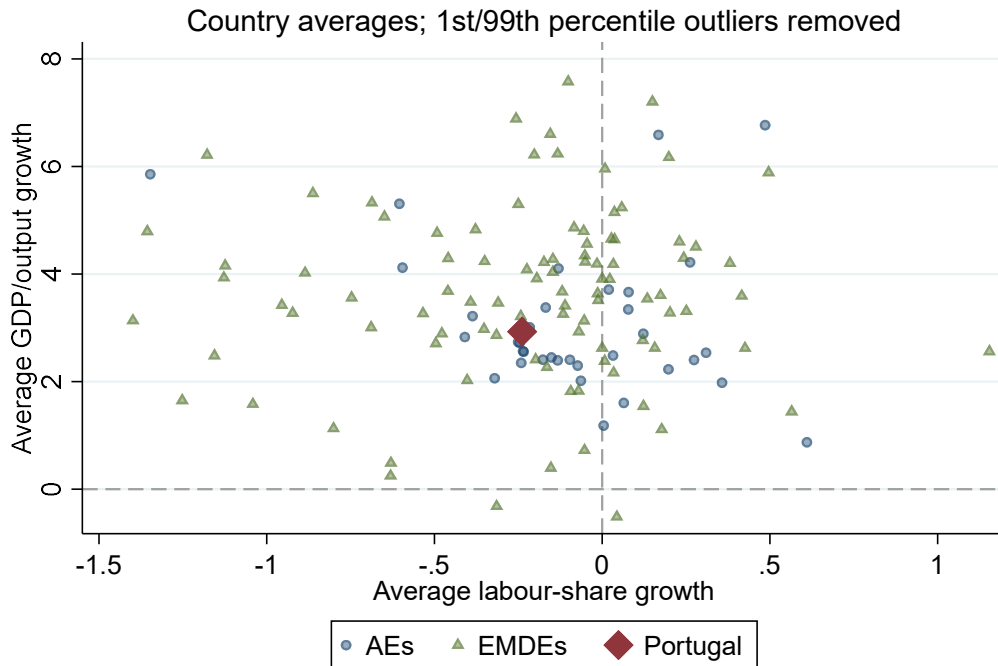
4.2 Portugal in Comparative Perspective

Portugal's experience is broadly consistent with the comparative evidence observed across advanced economies (AEs) and emerging market and developing economies (EMDEs). As illustrated in Figure 9, the relationship between labour-share growth and GDP growth across countries is highly dispersed, with substantial heterogeneity in both the sign and magnitude of the association. Portugal itself is positioned close to the centre of the international distribution, suggesting that its experience is not exceptional but rather representative of the broader ambiguity surrounding distributive dynamics and growth outcomes. The absence of any clear positive cross-country relationship reinforces the view that labour-share increases do not systematically translate into stronger economic growth. This comparative evidence is consistent with the panel regressions presented earlier, which showed that labour-share effects weaken substantially once productivity and investment controls are incorporated.

This pattern is particularly relevant for small open economies deeply integrated into international trade and financial markets. In such economies, wage dynamics cannot be evaluated independently of productivity performance and external competitiveness. Labour-share increases may temporarily support domestic demand, but if wage growth persistently exceeds productivity growth, the resulting deterioration in profitability and competitiveness may weaken investment, reduce export performance and generate external imbalances. The evidence therefore points toward a conditional relationship in which distributive outcomes depend fundamentally on underlying productivity and external-adjustment dynamics.

These mechanisms become even more important within monetary unions or fixed-exchange-rate systems, where nominal exchange-rate adjustment is unavailable. In these environments, macroeconomic adjustment operates primarily through productivity dynamics, relative prices and unit labour costs. Portugal therefore shares important structural characteristics with other euro-area peripheral economies, including Spain, Greece and Italy, where periods of debt-led expansion and weak productivity growth complicated interpretations based on demand-led growth mechanisms alone. The broader euro-area experience thus reinforces the importance of competitiveness and productivity constraints in shaping long-run growth outcomes.

Figure 9. Labour-Share Growth and GDP Growth: Portugal Versus AE and EMDE Distributions



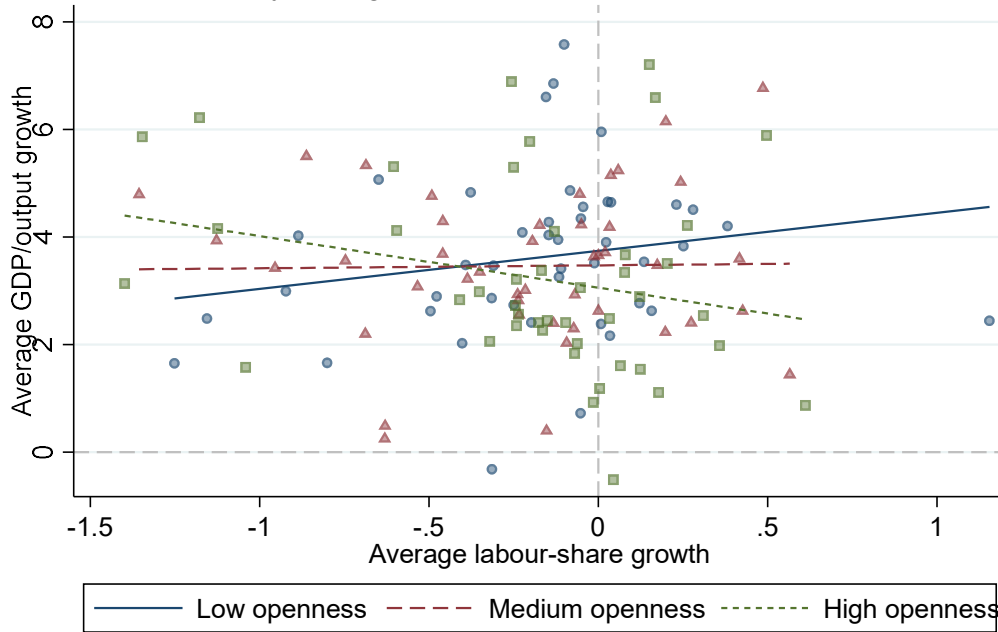
Notes: Country-level averages are computed for labour-share growth and GDP/output growth after excluding observations outside the 1st and 99th percentiles of the distributions. Portugal is compared with advanced economies (AEs) and emerging market and developing economies (EMDEs). The wide dispersion of country observations and the absence of a clear common slope highlight the heterogeneity of the relationship between labour-share dynamics and economic growth across countries.

Figure 10 further illustrates the importance of structural heterogeneity. The relationship between labour-share growth and GDP growth differs markedly across openness regimes. Countries with low openness exhibit a mildly positive association between labour-share growth and output growth, whereas highly open economies display a flatter or slightly negative relationship. This pattern is consistent with the idea that external constraints become more binding as trade integration increases. In highly open economies, distributive expansions unsupported by productivity gains may generate competitiveness losses that offset any short-run demand stimulus. The negative interaction between labour-share growth and openness observed in the panel regressions is therefore broadly consistent with the visual evidence presented in Figure 10.

The comparative AE/EMDE evidence points in a similar direction. Advanced economies may possess stronger institutions, deeper financial systems and more diversified productive structures that allow distributive changes to be absorbed with fewer immediate macroeconomic costs. By contrast, EMDEs often face tighter external financing constraints, shallower domestic financial markets and more volatile capital flows, making the growth effects of labour-share increases substantially more conditional on productivity performance and external sustainability. This helps explain why the panel estimates revealed considerable heterogeneity across country groups and little evidence of a stable common distributive-growth relationship. Overall, the evidence suggests that wage-led and profit-led classifications should not be interpreted as stable structural characteristics of economies, but rather as regime-dependent reduced-form correlations shaped by productivity, openness, financial conditions and institutional context. The comparative evidence therefore reinforces the

broader conclusion that sustainable growth in small open economies depends fundamentally on productivity performance, competitiveness and investment dynamics rather than on labour-share movements alone.

Figure 10. Labour-Share Growth, Productivity Growth and Openness Across Countries
Country averages; 1st/99th percentile outliers removed



Notes: Country-level averages are grouped according to openness terciles after excluding observations outside the 1st and 99th percentiles. Fitted lines are shown separately for low-, medium- and high-openness economies. The relationship between labour-share growth and GDP growth appears weaker and slightly negative in highly open economies, consistent with the importance of external competitiveness and tradable-sector adjustment in more internationally integrated economies.

4.3 Why Wage-Led Classifications Are Not Policy-Invariant

The broader empirical evidence suggests that wage-led and profit-led classifications should be interpreted with considerable caution. As shown in Tables 4 and 5, the estimated relationship between labour-share growth and GDP growth is highly sensitive to the inclusion of productivity, investment and openness controls, as well as to the structural characteristics of economies. Once productivity and investment variables are introduced, the labour-share coefficient becomes economically small and statistically insignificant in most specifications. The interaction results similarly indicate that distributive effects vary across openness regimes and country groups, reinforcing the idea that these relationships are not stable policy-invariant structural parameters. The panel local projections presented previously further reinforce this interpretation by showing that labour-share shocks do not generate robust and persistent growth responses across countries or time horizons.

This distinction is important because labour shares may rise through fundamentally different mechanisms, each carrying distinct macroeconomic implications. As summarised in Table 7, labour shares may increase because productivity growth supports real wage gains, because labour-market institutions strengthen workers' bargaining power, because profits collapse during recessions, or because public-sector wage dynamics become disconnected from productivity developments. These mechanisms differ substantially in their implications

for investment, competitiveness, external balances and long-run growth performance. The same observed increase in labour's share of income may therefore reflect fundamentally different underlying economic processes depending on the broader macroeconomic environment.

A positive reduced-form coefficient on labour-share growth therefore does not imply that any policy aimed at increasing labour's share will necessarily generate sustained economic expansion. Policies that raise wages alongside productivity improvements, technological upgrading, human-capital accumulation, innovation and capital deepening may support both efficiency and equity. By contrast, policies that increase labour costs without corresponding productivity gains may weaken profitability, discourage investment, erode external competitiveness and reduce long-run growth potential. The distinction between productivity-supported wage growth and administratively or institutionally driven labour-cost increases is therefore central for policy evaluation.

The Portuguese historical experience is broadly consistent with this interpretation. Periods of strong and sustainable growth were generally associated with productivity catch-up, capital accumulation and external integration rather than with autonomous distributive expansions. Conversely, episodes characterised by weak productivity performance and rising external imbalances generated macroeconomic fragilities despite relatively supportive domestic demand conditions. The historical evidence therefore suggests that distributive outcomes were largely endogenous to broader structural and productivity dynamics rather than autonomous drivers of long-run growth.

Table 7. Mechanisms Behind Rising Labour Shares and Expected Growth Effects

Mechanism	Source of labour-share increase	Expected growth effect	Policy interpretation
Productivity-driven wage growth	Real wages rise with productivity and capital deepening	Positive or neutral if competitiveness is preserved	Supports sustainable wage growth and living standards
Bargaining-driven redistribution	Labour institutions raise wage share relative to profits	Ambiguous; depends on investment, mark-ups and openness	May improve equity but requires productivity support
Recession-induced profit compression	Profits fall faster than wages during downturns	Negative or mechanically misleading	Should not be interpreted as wage-led growth
Public-sector wage expansion	Public wages rise independently of productivity	Ambiguous or negative if fiscal/external constraints bind	Requires fiscal sustainability and productivity alignment
External-constraint episode	Wage growth exceeds productivity in open economy	Potentially negative through competitiveness and trade balance	Requires tradable-sector productivity and external balance

Notes: The table distinguishes alternative mechanisms through which labour shares may increase and summarises their expected implications for growth, competitiveness and macroeconomic adjustment. The framework highlights that labour-share increases generated by productivity improvements differ fundamentally from those arising through redistribution, recession-driven profit compression or externally unsustainable wage dynamics. The growth effects of distributive changes are therefore conditional on the underlying structural and macroeconomic context rather than representing stable policy-invariant relationships.

These considerations imply a more nuanced policy interpretation than that advanced by Alcobia and Barradas (2023). The evidence does not support a simple prescription that raising labour shares is sufficient to avoid secular stagnation or restore sustained growth. Labour income undoubtedly matters for macroeconomic performance, but its effects depend critically on how labour shares rise and on whether wage growth is supported by productivity, investment and competitiveness. The broader evidence instead points toward a conditional and context-dependent relationship between distribution and growth.

For Portugal, the central policy challenge is therefore not merely to increase wages as a share of income, but to generate sustained productivity growth capable of supporting durable real wage gains. This requires improvements in human capital, innovation, technological adoption, management quality, infrastructure, competition, tradable-sector upgrading and institutional effectiveness. Labour-market policy should consequently be evaluated not only by its distributive consequences but also by its implications for productivity, firm dynamics, labour mobility and external competitiveness. In a small open economy operating within a monetary union, these competitiveness considerations become particularly important because external adjustment cannot occur through nominal exchange-rate depreciation.

The broader AE/EMDE evidence points to a similar conclusion. In some contexts, stronger labour income may support demand without significantly undermining investment or competitiveness. In others, especially where productivity growth is weak and external constraints are binding, distributive expansion may generate substantial trade-offs. A credible macroeconomic framework must therefore integrate wage policy with productivity policy, industrial upgrading, fiscal sustainability and external balance. The comparative evidence consequently provides little support for universal policy prescriptions based solely on labour-share dynamics.

This point is central for the interpretation of Alcobia and Barradas (2023). Their empirical specification estimates a reduced-form association between labour-share growth and GDP growth conditional on a particular sample, period and macroeconomic environment. It does

not directly identify the structural effects of collective bargaining reforms, minimum wages, labour-market regulation, public-sector wage policy or redistributive taxation. Moving from a fragile reduced-form coefficient to strong policy prescriptions therefore requires additional assumptions regarding productivity dynamics, competitiveness effects, financial conditions and external constraints that the empirical analysis itself does not establish. The evidence presented throughout this paper therefore supports a considerably more cautious interpretation of wage-led claims in the Portuguese context.

5. Conclusion

This paper reassessed the claim that Portugal can be characterised as a stable wage-led growth regime. The evidence suggests that the relationship between labour-share growth and output growth is considerably weaker, less stable and more context-dependent than implied by Alcobia and Barradas (2023). Once productivity, investment and openness are properly considered, the independent role of labour-share dynamics largely disappears.

The historical and comparative evidence instead points toward a productivity-centred interpretation of Portuguese growth. Periods of sustained expansion were associated primarily with productivity convergence, capital accumulation, external integration and institutional modernisation, while episodes characterised by weak productivity growth and rising external imbalances generated macroeconomic fragilities despite supportive domestic demand conditions.

More broadly, the paper argues that wage-led and profit-led classifications should not be interpreted as stable structural properties of economies. Their empirical relevance depends on macroeconomic regimes, external constraints, productivity performance and institutional context. Policies aimed at improving distributional outcomes may generate positive economic effects when supported by productivity growth and structural upgrading, but distributive expansion alone is unlikely to provide a reliable foundation for sustained long-run growth in small open economies operating under external and financial constraints.

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APPENDIX

Table A1. Variables, Definitions and Data Sources

Variable	Definition	Source
GDP per capita growth	Annual log change in real GDP per capita, constant 2015 US dollars	World Bank / WDI
Real GDP growth	Annual log change in real GDP, constant 2015 US dollars	World Bank / WDI
Labour-share growth	Annual log change in labour income share	PWT / merged database
TFP growth	Annual log change in total factor productivity	PWT / merged database
Capital deepening	Annual log change in real capital stock per worker	PWT / merged database
Investment	Gross capital formation growth or investment proxy	World Bank / WDI
Openness	Export share or trade openness proxy	PWT / merged database
Inflation	Annual consumer price inflation	World Bank / WDI
Government expenditure growth	Annual change in government expenditure as percent of GDP	IMF / WEO or merged database
Education	Gross secondary school enrolment	World Bank / WDI
AE dummy	Advanced economy classification	Author classification
EMDE dummy	Emerging market and developing economy classification	Author classification

Table A2. Country Coverage and Sample Composition

Group	Number of countries	First year	Last year	Observations per country
Advanced economies	25	1970	2023	54
EMDEs	207	1970	2023	54
Full sample	232	1970	2023	54

Table A3. Alternative Portuguese Specifications

Variable	Baseline	Main augmented	Alt. labour share	Excl. COVID	Excl. crisis
Lagged GDP per capita growth	-0.109	-0.219	-0.224	0.126	0.043
Labour-share growth	0.565	-0.437	—	-0.109	-0.176
Change in labour share	—	—	-0.708	—	—
TFP growth	—	0.136	0.139	-0.014	0.122
Capital deepening	—	-0.010	-0.012	0.269	0.326
Investment	—	0.323***	0.322***	0.303***	0.334
Inflation	-0.391	0.204	0.204	0.023	1.021
Government expenditure growth	-1.057**	-0.399	-0.399	-0.210	-0.739
Secondary enrolment	-0.096	0.001	0.001	0.046	0.059
Openness	-10.910	-10.450	-10.533	-4.489	5.909
Observations	21	21	21	20	14
R-squared	0.443	0.841	0.842	0.943	0.892

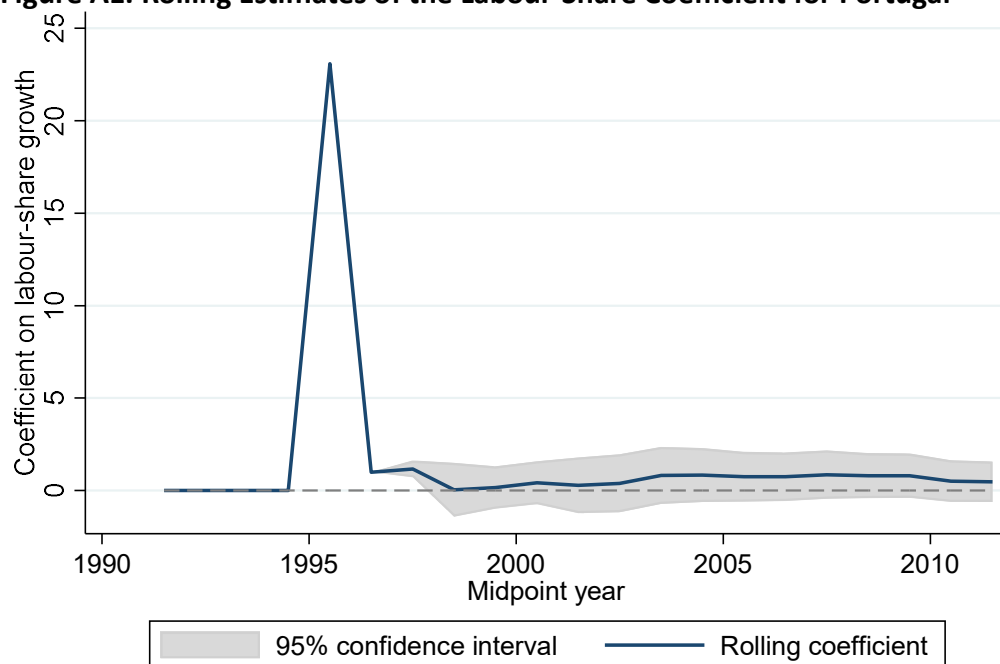
Notes: The table reports alternative Portuguese time-series specifications. The baseline corresponds to the reduced-form model without productivity and investment controls. The main augmented specification adds TFP growth, capital deepening and investment. The alternative labour-share specification replaces labour-share growth with the simple change in the labour share. The COVID specification excludes 2020–2021, while the crisis specification excludes 2008–2014. Across specifications, the labour-share coefficient is unstable and statistically insignificant, while investment remains the most robust positive correlate of Portuguese growth.

Table A4. Alternative Panel Specifications

Variable	Main FE	Country FE	Robust SE	No outliers	AEs	EMDEs
Lagged GDP per capita growth	0.129**	0.089	0.129**	0.200***	0.233***	0.107
Labour-share growth	-0.018	-0.065	-0.018	-0.031	-0.154	0.003
TFP growth	0.312***	0.318***	0.312***	0.167***	0.193***	0.316***
Capital deepening	0.010	-0.055	0.010	-0.014	-0.177**	0.033
Investment	0.034**	0.043**	0.034***	0.039***	0.095***	0.031**
Openness	-0.044	0.113	-0.044	-0.552	0.318	0.397
Observations	4,227	4,227	4,227	4,079	1,166	3,061
Adjusted R-squared	0.464	0.364	0.464	0.488	0.727	0.444

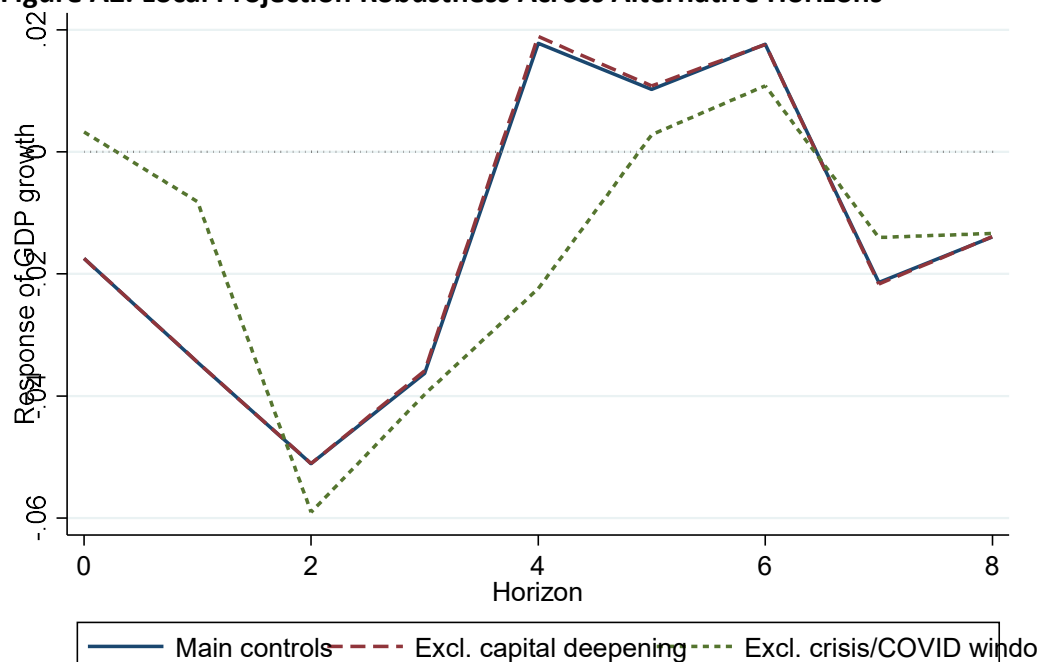
Notes: The table reports robustness checks for the panel growth specification. The main specification includes country and year fixed effects with standard errors clustered at the country level. Alternative columns use country fixed effects only, robust standard errors, outlier exclusion based on the 1st and 99th percentiles of GDP and labour-share growth, and separate AE and EMDE samples. The labour-share coefficient remains small and statistically insignificant across specifications, whereas TFP growth and investment remain consistently positive and statistically significant.

Figure A1. Rolling Estimates of the Labour-Share Coefficient for Portugal



Notes: The figure reports 20-year rolling-window estimates of the coefficient on labour-share growth in Portuguese growth regressions. Shaded areas denote 95 percent confidence intervals. The estimates fluctuate substantially over time and frequently overlap zero, supporting the view that the labour-share-growth relationship is unstable across Portuguese historical regimes.

Figure A2. Local Projection Robustness Across Alternative Horizons



Notes: The figure reports panel local projection responses of GDP growth to labour-share innovations across alternative specifications and horizons. The robustness checks compare the main control set, a specification excluding capital deepening, and a restricted pre-crisis/COVID window. Responses remain small and unstable across horizons, providing limited support for a persistent wage-led growth mechanism.