Towards a Growth and Distribution Model with Heterogeneous Firms and Acquisitions

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Abstract

Post-Keynesian growth models typically treat investment as new capital formation. I relax that assumption by allowing firms to expand either by capital expenditure (capex) or by acquisitions, and ask how this choice reshapes demand–growth regimes. I build an analytical post-Kaleckian model with heterogeneous firms—acquirers and non-acquirers—and an agent-based (AB) simulation. Aggregating correctly when acquisitions merely reallocate existing capacity yields a simple object, the economy's capacity-creating weight (the share of investment that actually becomes new capital). As acquisition intensity and the acquirers' capital share rise, this weight falls, turning acquisitions into a leakage from goods-market demand; if post-merger restructuring destroys capacity, the leakage is larger. With unchanged behavioral coefficients, the model can move from profit-led to wage-led—or remain profit-led but stagnant—because higher profit shares feed increasingly into ownership transfers rather than new capital goods. Market concentration emerges endogenously as acquirers absorb targets, raising markups and profit shares while attenuating the pass-through from profitability and utilization to accumulation.

Panel evidence for U.S. listed firms (1970–2019) supports the mechanism: profits and utilization raise investment on average, but their effects are systematically weaker where acquisition intensity is higher, especially among large firms. The AB simulation reproduces the analytical results: as acquisitions and concentration grow, the capacity-creating weight declines, the elasticities of utilization and growth with respect to profits shrink, and the economy settles into low growth despite rising markups. The paper implies that (i) macro models must explicitly integrate firm-level expansion choices (capital expenditure vs. acquisitions), especially in today's highly stratified corporate sector; and (ii) distributional shifts consistent with the prevailing demand–growth regime are not sufficient to raise growth—profit- (wage-led) economies can stagnate even as the profit share rises (falls).

1 Introduction

By focusing on macro-level relationships such as aggregate demand, income shares, and institutional factors, Post-Keynesian (PK) growth and distribution models provide a broad framework for understanding growth and distributional outcomes. However, they leave open the question of how certain firm behaviours and changing market structures interact with macroeconomic growth regimes. This paper addresses that gap by examining how firm behaviour—specifically, the choice between expanding firm-level productive capacity through capital expenditure or acquisitions—shapes macroeconomic growth dynamics. By incorporating this dimension into an agent-based model with heterogeneous firms and post-Kaleckian [1] investment functions, the analysis explores how corporate investment decisions and the evolving market structure influence growth regime outcomes.

Classical contributions to the theory of the firm (Marris, 1964; Penrose, [2009] 1959), as well as modern applied corporate studies (Doidge et al., 2018; Gaughan, 2018; Mauboussin et al., 2014; Porter, 1987), make it clear that corporations can expand their productive capacity not only through traditional capital expenditure, as assumed in PK models, but also through acquisitions. This raises a key first question explored in this paper: how does firms' preference for one mode of expansion—acquisitions—over another—capital expenditure in new productive capacity—shape the determination of a growth regime?

Inspired by Nikiforos (2016, 2022), who attributes growth regime changes through shifts in household and corporate saving and investment behaviour, this paper explores such transitions without relying on changes in the behavioural parameters of saving and investment. It is shown analytically that even with fixed coefficients in the investment and saving functions the model can transition from a profit-led to a wage-led growth regime once firm-level capital expansion through acquisitions and market structure dynamics are taken into account. I define the economy's capacity-creating weight as the share of investment that purchases newly produced capital rather than existing assets. This weight falls as acquisition intensity and acquirer dominance rise, and it is the key channel through which acquisitions weakens linkage between profits, investment and demand. For instance, in a profit-led economy, an increase in the profit share typically leads to higher investment expenditures. However, if a portion of those investment flows is directed toward acquisitions rather than new capital formation, part of the positive impulse to growth is lost in the mere reallocation of existing productive capacity. Thus, a second result of the analytical analysis is that stagnation can settle even as changes in distribution are in line with the system's regime. An agent-based simulation illustrates this latter result. When different firm-level expansion strategies are incorporated, the resulting growth regime may diverge from the predictions of a purely macroeconomic analytical model.

A second question explored in this paper unfolds from taking acquisitions as a firm-level investment strategy and its immediate consequence of concentrating markets. Both the AB and analytical models developed in this paper feature two types of firms: non-acquiring firms, which expand solely through capital expenditure in new productive capacity, and acquiring firms, which grow through both capital expenditure and the acquisition of non-acquiring firms. Over time, the share of acquisitions in total investment evolves, and as it increases, non-acquiring firms are progressively eliminated from the market, leading to higher concentration. As acquiring firms

[1] I use the terminology as in Hein (2014) and Lavoie (2015).

come to dominate the market, the acquisition share in total investment rises further, reinforcing the effects described in the previous paragraph.

A PK-AB model that includes acquisition expenditures as part of firms' investment options represents a novel contribution[2]. While the model does not yet aim to fully capture the complexities of acquisition decisions, it establishes a foundation for studying their effects on macroeconomic growth and income distribution in PK models. A key insight is that once acquisition investment becomes a component of firm growth, aggregate growth can no longer be calculated simply as the sum of firm-level growth rates derived from individual investment functions. This is because at the macroeconomic level acquisitions reallocate existing productive capacity rather than contributing to new capital formation. The appropriate approach is either to aggregate the net change in individual firms' capital stock or to subtract acquisition expenditures from total investment flows. Furthermore, when introducing a factor that accounts for the efficiency of capital absorption in acquisitions—allowing for the inclusion of phenomena such as killer acquisitions or post-acquisition restructuring, which often involves lay-offs and the closure of departments or factories due to synergies—considering the reallocation effects of capital becomes even more critical in assessing its full macroeconomic impact. Leaving aside the latter post-acquisition restructuring processes, for the growth of the capital stock acquisitions are always expansionary at the firm level, expansionary or neutral at the industry level, and always neutral at the macroeconomic level.

Addressing these issues within an AB model with heterogeneous firms is justified for several reasons and relates to the literature this paper contributes to. First, analysing market structure dynamics requires a framework in which multiple firms coexist, at least temporarily. Heterogeneous firms are a necessary condition for capturing evolving market structures driven by different growth strategies. In this sense, this paper relates to and contributes to three strands of literature. Within macroeconomic agent-based (AB) models (Caiani et al., 2016; Di Guilmi, 2017; Reissl, 2020; Seppecher et al., 2018), only two studies explicitly focus on market concentration. Michell (2014) develop an AB model incorporating Rowthorn (1981) investment functions, where firms' market shares grow with relative size but are subject to random shocks. Here, I use the investment function suggested by Bhaduri et al. (1990), which allows for different growth regimes. Meanwhile, Terranova et al. (2022) construct an AB model to analyse market concentration driven by technological diffusion and barriers to innovation, evaluating its macroeconomic consequences. This paper follows a similar approach in assessing whether concentration is beneficial or detrimental to macroeconomic performance but introduces a distinct mechanism: acquisition expenditures that reduce the number of firms in the market.

A second related literature is in the expanding body of empirical work documents growing heterogeneity across firm types and links it to rising markups and the profit share, motivating a bottom-up macro framework with heterogeneous firms to trace how distinct corporate strategies aggregate to macro outcomes (Autor et al., 2020; L. Davis et al., 2022; De Loecker et al., 2017). Within the debate on U.S. concentration, one view holds that globalization and technology intensified competition, allowing highly productive "superstar" firms—with higher markups, lower labour shares, and greater capital intensity—to gain disproportionate market shares (Autor et al., 2020; Terranova et al., 2022); the alternative emphasizes weakened antitrust and expanding market power since the 1980s (Barkai, 2020; Grullon et al., 2019; Gutiérrez et al., 2019; Philippon, 2021).

[2]In developing the AB model, I build on previous work on Kohler et al. (2025), which itself extends the framework introduced by Michell (2014). Neither of those contributions explore the effect of acquisition expenditures and the determinations of market share, explored in section 5 of this paper, is also different here.

These hypotheses need not be mutually exclusive: even under the efficiency narrative, dominant firms face lower demand elasticity. a potential sign of market power, enabling sustained high markups that reallocate value-added from labour to profits—an implicit channel of rent extraction (Autor et al., 2020). Yet much of this literature downplays acquisition flows: while Gutiérrez et al. (2019) and Philippon (2021) stress enforcement, they do not trace how rising M&A shapes macro growth. Building on Q-theory applications that pair high Tobin's Q with weak investment (Gutiérrez et al., 2018), we argue that elevated Q can redirect expansion from capital expenditure to acquisitions, making measured investment appear low even as firms scale via ownership consolidation—a possibility that standard Q-theory (itself contested) obscures (Crotty, 1990, 1992). Incorporating endogenous M&A in a heterogeneous-firm macro model can therefore reconcile rising concentration, markups, and profits with macroeconomic sluggish physical investment and the rise of large corporations.

Third, while PK growth-and-distribution models illuminate macro trends (Blecker et al., 2019; Hein, 2014, 2023; Lavoie, 2022), a firm-level perspective is needed to explain how today's corporate environment emerged without homogenizing corporate behaviour. The well-documented slowdown in capital-expenditure growth since the 1980s is often read in PK theories as a decline in firms' expansion goals (Dallery, 2009; Lavoie, 2015; Orhangazi, 2008; Stockhammer, 2004), yet this sits uneasily with the resurgence and dominance of large firms (Zingales, 2017). An AB lens that treats M&A outlays as an expansion advantage reconciles these facts: aggregate capital expenditure can stagnate even as leading firms grow via ownership consolidation. Complementing this, the financialization literature attributes weaker capital deepening to shareholder-value orientation—profit redistribution via dividends and buybacks, higher leverage and interest burdens, and a tilt toward financial assets—which compresses internal funds and deprioritizes capital expenditure (L. E. Davis, 2018; Orhangazi, 2008; Stockhammer, 2004). Rather than implying a uniformly lower desired growth rate, a bottom-up heterogeneous-firm model that embeds M&A alongside investment links firm behaviour to observed macro outcomes, showing how financial pressures can coexist with continued expansion by dominant firms.

Finally, because PK theories of investment are grounded in firm-level decision-making and caution against representative-agent aggregation while calling for "integrating principles" of microfoundations (Lavoie, 2015; Toporowski, 2016), this paper adopts a bottom-up heterogeneous-firm approach in which M&A outlays are an expansion margin: aggregate capital expeditures can stagnate even as leading firms grow via ownership consolidation, producing a bifurcation between micro and macro outcomes whereby expansion by a few firms and rising concentration coincide with weaker economy-wide growth.

The structure of the paper is as follows. Section 2 discusses the implications of acquisition expenditures for measuring capital accumulation at the macro level and proposes a consistent aggregation method. Section 3 sets up a two-sector post-Kaleckian model with heterogeneous firms, distinguishing between acquirers and non-acquirers, and analytically derives the effects of acquisition intensity on macroeconomic outcomes such as capacity utilization and growth. Section 4 shows the analytical solutions of the post-Kaleckian model with acquisitions. Section 5 extends the model to meet the requirements for AB model simulation and presents the results. Finally, Section 7 offers a brief summary and conclusion.

2 Firm-Level investment with acquisitions

In this section, I start by introducing the possibility of investment flows used in different ways to expand the capital stock of the firm. To traditional investment in productive capital, I add investment in acquisitions and describe the proper aggregation method of growth rates. We will see how for the acquiring firm's capital stock, acquisitions are expansionary, while at the aggregate, acquisitions are neutral in terms of capital growth since they represent a capital reallocation.

2.1 A firm-level investment function of an acquiring firm

For firm i, the growth rate of its capital stock (g_i) depends on both traditional investment (I_{trad}) and acquisitions (I_{Acq}) expenditure, Let:

$$I_i = I_{\text{trad},i} + I_{\text{Acq},i}, \tag{1}$$

$$I_{\text{Acq},i} = \theta I_i, \tag{2}$$

$$I_{\text{trad},i} = (1-\theta) I_i, \tag{3}$$

where θ is the share of acquisition expenditure in total firm's investment expenditures (I_i). As mentioned, a distinctive feature of the approach adopted here is that total investment encompasses both traditional capital expenditures (I_trad) and acquisition-related expenditures (I_Acq). Let us define ϵ as the way in which an acquiring firm treats the acquired capital. ϵ can take any value from 0 to 1 depending whether the firms keeps the acquired capital as when bought ($\epsilon = 1$) or destroys part of it due to restructuring ($\epsilon < 1$). Destruction of capital is usual in post-acquisition restructuring processes of integration. In fact, cost saving synergies are often the goal of M&As. The growth rate of firm i's capital stock is:

$$g_i = \frac{I_{\text{trad},i}}{K_i} + \frac{I_{\text{Acq},i}}{K_i}, \tag{4}$$

where:

$$g_i = \frac{(1-\theta)I_i}{K_i} + \frac{\epsilon\theta I_i}{K_i}. \tag{5}$$

This simplifies to:

$$g_i = \frac{I_i}{K_i}\left[(1 + \theta_i(\epsilon - 1)\right] \tag{6}$$

If $\epsilon = 1$, the firm keeps the amount of capital acquired installed and thus written in its accounting books. The growth rate simplifies to $\frac{I_i}{K_i}$. If $\epsilon < 1$, the firm decides to destroy some portion of the capital stock acquired due to restructurating. In this case, equation (6) applies resulting in a growth rate lower than it would have been, had the firm grown entirely through traditional investment or if the firm had decided to not destroy any of the acquired capital stock.

2.2 Macroeconomic growth with Acquisitions: adjusting for reallocation of capital

At the macro-level, when aggregating all firm-level capital growth, an adjustment between acquiring and acquired capital is required. Acquisitions only reallocate existing capital stock.

Let us aggregate the firm-level growth rates to find the macro-level growth rate (G). Unlike in the case where the growth of the firm comes from a single use of investment flows, i.e. capital expenditure, in our case the aggregation of firm level investment should take into account that acquisition of capital does not create new capital and that can even destroy it. Thus, we add the adjustment for the reallocation of capital between firms:

$$G = \frac{\Delta K}{K} = \frac{1}{K} \sum_{i=1}^{n} \left[(1-\theta_i) I_i + \theta_i I_i - (1-\epsilon)\theta_i I_i - K_{\text{acq},i} \right], \tag{7}$$

where ($K_{\text{acq},i}$) is the value of the acquired capital. By definition, total acquisition expenditure ($\sum_{i=1}^{n} \theta_i I_i$) (in a closed economy) is equal to the value of acquired capital ($sum_{i=1}^{n} K_{\text{acq},i}$). The negative term$(1-\epsilon)\theta_i I_i$ accounts for the destruction of capital done by acquiring firms in their restructuring of acquired capital. This term cancels out when the retention ratio of acquired capital (ϵ) is equal to 1.

Substituting ($K_{\text{acq},i} = \theta_i I_i$), as acquisitions redistribute the existing capital stock and writing the total investment across all firms as $I = \sum_{i=1}^{n} I_i$, we obtain:

$$G = \frac{1}{K} \sum_{i=1}^{n} I_i \left[1 - \theta_i (2 - \epsilon_i) \right] \tag{8}$$

Equation (8) highlights that once acquisitions are integrated into the investment function of the firm, the sum of investment outflows of firms ($I = \sum_{i=1}^{n} I_i$) does not translate one to one into an increase in the capital stock at the aggregate level. Specifically, acquisitions do not contribute with new capital to the economy—they simply reallocate existing stock—and if some of the acquired capital is destroyed during integration (i.e., when $\epsilon_i < 1$), this results in a net loss to the aggregate stock. The penalty term, $\theta_i(2-\epsilon_i)$, captures both the redistributive and destructive aspects of acquisitions. In the aggregate, capital growth is maximized when investment is directed toward new productive assets (i.e., when $\theta_i = 0$), and minimized or even negative when investment is concentrated in acquisitions with low retention (e.g., $\theta_i = 1$, $\epsilon_i = 0$). Thus, the equation formalizes the idea that the structure and quality of investment at the micro level have direct implications for macroeconomic capital accumulation.

2.2.1 Aggregate growth dynamics

In this subsection we derive the consequences of certain values in ϵ_i and θ_i for aggregate growth. Obviously, when all firms decide $\theta_i = 0$, acquisitions do not play any role in investment and growth relies entirely in traditional investment, which results in a one-to-one relation between firm growth and aggregate growth.

Taking derivatives of aggregate investment rate with respect to $\bar{\theta}$ and to $\bar{\epsilon}$, we obtain:

$$\frac{\partial G}{\partial \theta_i} = -\frac{I_i}{K} \cdot (2 - \epsilon_i) \tag{9}$$

$$\frac{\partial G}{\partial \epsilon_i} = \frac{I_i}{K} \cdot \theta_i \tag{10}$$

Equation 9 implies that for a fixed ϵ_i, an increase in θ_i leads to a proportionate decrease in G, reflecting a penalizing effect. Equation (10) shows that when θ_i and I_i are nonzero, increasing ϵ_i contributes positively to the objective function.

2.3 The average firm

Dividing equation (8) by n, we get the growth rate of the average firm:

$$\bar{g_i} = \frac{\bar{I}}{\bar{K}} \left[1 + \bar{\theta}(\epsilon - 2)\right], \tag{11}$$

Only when the proportion of investment over the capital stock and of acquisition expenditure in total investment as well as lost capital due to acquisitions are equal across firms, the aggregate growth rate follows the firm's growth. Once differentiating between acquiring firms and non-acquiring firms, the average firm growth path is less informative of the aggregate growth rate. In fact, firms are either net acquires or targets of acquisitions, i.e. net sellers. Cases with net acquirers and sellers are studied in section 4 and 5.

3 A Post-Kaleckian model with heterogeneous firms

The current economic model is populated by a set of two different firms. One type of firms will be called non-acquiring firms since their only growth method is traditional capital expenditure to build new productive capacity. The second type of firms are acquiring firms since they can grow through traditional capital expenditure and through acquiring already in-place capital stock. All firms produce an homogeneous good that is used for both investment and consumption. Firms operate in imperfectly competitive markets and set prices adding a markup τ to their the production cost. Labour is the only cost faced by firms and the technology of production is constant across firms and time. In the next section more will be said about the determination of the markup. But at this point the above assumption suffices given that the goal at this point is to focus on the aggregation of firm-level investment function and the determination of growth regimes. In what follows I abstract from the efficiency of acquisitions ϵ since including it would add inconvenient length to the mathematical expressions below, while its impact in the results is rather obvious.

The investment function of each non-acquiring firms i:

$$g_i^n = \gamma + g_\pi \pi_i^n + g_u u_i^n \tag{12}$$

The total number of non-acquiring firms is N^n. Total investment by non-acquiring firms:

$$I^n = \sum_{i=1}^{N^n} I_i^n = \sum_{i=1}^{N^n} K_i^n(\gamma + g_\pi \pi_i^n + g_u u_i^n) \tag{13}$$

where N^n is the number of non-acquiring firms.

The investment function of acquiring firms j is the same than for non-acquiring firms:

$$g_j^a = \gamma + g_\pi \pi_j^a + g_u u_j^a \tag{14}$$

I denote the total number of firm as N and the total number of acquisiring firms as N^a. Total investment by acquiring firms:

$$I_{total}^a = \sum_{j=1}^{N^a} K_j^a = \sum_{j=1}^{N^a} K_j^a(\gamma + g_\pi \pi_j^a + g_u u_j^a) \tag{15}$$

For acquiring firms, total investment is decomposed into new capital formation (I_c^a) and acquisitions investment (I_{acq}^a). Let's denote i_j each acquiring firm's share of their total investment $i_j = \frac{I_j}{I_{total}^a} = \frac{K_j^a(\gamma+g_\pi\pi_j^a+g_u u_j^a)}{\sum_{j=1}^{N^a} K_j^a(\gamma+g_\pi\pi_j^a+g_u u_j^a)}$ and θ^w the acquisition-intensity weighted average $\theta^w = \sum_{j=1}^{N^a} \theta_j i_j$. Their total new capital formation (I_c^a) is given by:

$$I_c^a = I_{total}^a - I_{acq}^a = I_{total}^a(1 - \theta^w) \tag{16}$$

Introducing acquisition intensity θ for only a subset of firms mirrors post-1980 developments in which acquisition expenditure is concentrated in a relatively small fraction of firms (well below 10%). To keep stock–flow consistency, I assume acquirers finance acquisitions by purchasing already installed capital from non-acquirers. While stylized, this is close to observed practice. Total *new* capital formation in the economy is therefore

$$I_c^{\text{total}} = I^n + I_c^a = \underbrace{\sum_{i=1}^{N^n} K_i^n(\gamma + g_\pi \pi_i^n + g_u u_i^n)}_{\text{Non-acquirers' capital formation}} + \underbrace{\sum_{j=1}^{N^a}(1-\theta_j)\,K_j^a\big(\gamma + g_\pi \pi_j^a + g_u u_j^a\big)}_{\text{Acquirers' capital formation}}. \tag{17}$$

Consistent with (17), in Appendix A I provide panel estimates on U.S. firms (Compustat 1970–2019) show that profitability and utilisation raise investment on average, but their marginal effects are systematically attenuated as acquisition intensity θ rises (negative $\pi \times \theta$ and $u \times \theta$ interactions, strongest for large firms). This supports treating θ as an empirically relevant leakage from capacity-creating investment—i.e., the $(1-\theta)$ terms below capture the reduced pass-through from profits and utilisation into new capital formation.

I define capital shares of non-acquiring and acquiring firms as:

$$s_i^n \equiv \frac{K_i^n}{K}, \qquad s_j^a \equiv \frac{K_j^a}{K}, \qquad K \equiv \sum_{i=1}^{N^n} K_i^n + \sum_{j=1}^{N^a} K_j^a.$$

Let the aggregate growth rate of the capital stock be

$$g \equiv \frac{I_c^{\text{total}}}{K}.$$

Using (17) and factoring out the firm-invariant coefficients (γ, g_π, g_u) gives

$$g = \gamma \left(\sum_{i=1}^{N^n} s_i^n + \sum_{j=1}^{N^a} s_j^a (1-\theta_j) \right) + g_\pi \left(\sum_{i=1}^{N^n} s_i^n \pi_i^n + \sum_{j=1}^{N^a} s_j^a (1-\theta_j) \pi_j^a \right) + g_u \left(\sum_{i=1}^{N^n} s_i^n u_i^n + \sum_{j=1}^{N^a} s_j^a (1-\theta_j) u_j^a \right). \tag{18}$$

For compactness, I define the acquirers' total capital share and the capital-weighted mean acquisition intensity:

$$S^a \equiv \sum_{j=1}^{N^a} s_j^a, \qquad \bar{\theta}^{\,s} \equiv \frac{1}{S^a} \sum_{j=1}^{N^a} s_j^a \, \theta_j, \qquad \Rightarrow \qquad \sum_{j=1}^{N^a} s_j^a (1-\theta_j) = S^a (1 - \bar{\theta}^{\,s}).$$

Furthermore, I define capital-share averages for non-acquirers and *effective* (acquisition-adjusted) averages for acquirers:

$$\bar{\pi}^{\,n} \equiv \frac{\sum_{i=1}^{N^n} s_i^n \pi_i^n}{1 - S^a}, \quad \bar{u}^{\,n} \equiv \frac{\sum_{i=1}^{N^n} s_i^n u_i^n}{1 - S^a}, \qquad \bar{\pi}^{\,a,\theta} \equiv \frac{\sum_{j=1}^{N^a} s_j^a (1-\theta_j) \pi_j^a}{\sum_{j=1}^{N^a} s_j^a (1-\theta_j)}, \quad \bar{u}^{\,a,\theta} \equiv \frac{\sum_{j=1}^{N^a} s_j^a (1-\theta_j) u_j^a}{\sum_{j=1}^{N^a} s_j^a (1-\theta_j)}.$$

With these definitions, (18) becomes

$$\boxed{\begin{aligned} g = {} & \gamma \big[(1 - S^a) + S^a (1 - \bar{\theta}^{\,s}) \big] \\ & + g_\pi \Big[(1 - S^a) \, \bar{\pi}^{\,n} + S^a (1 - \bar{\theta}^{\,s}) \, \bar{\pi}^{\,a,\theta} \Big] \\ & + g_u \Big[(1 - S^a) \, \bar{u}^{\,n} + S^a (1 - \bar{\theta}^{\,s}) \, \bar{u}^{\,a,\theta} \Big]. \end{aligned}} \tag{19}$$

Equivalently, the γ term simplifies to $\gamma \, [1 - S^a \bar{\theta}^{\,s}]$.

4 A macroeconomic closure

4.1 Short run equilibrium

While the empirical results demonstrate considerable heterogeneity in how firms respond to profitability, capacity utilization, and acquisition intensity, the theoretical model adopts a representative firm framework for analytical tractability. This simplification allows for the derivation of closed-form expressions for macroeconomic equilibrium values such as the rate of capacity utilization u^* and the growth rate g^*, which would not be analytically solvable in a heterogeneous agent setting. The representative firm is constructed to reflect the average behaviour of the firm population, incorporating the average profit share, acquisition intensity, and investment behavior.

This approach does not contradict the empirical heterogeneity, but rather abstracts from it to capture the macroeconomic consistency condition: aggregate investment must match aggregate saving, and capacity utilization must stabilize such that effective demand equals output. The key macroeconomic identities—such as $u = c_y + g$—hold at the aggregate level, and thus can be studied using a representative firm whose parameters are calibrated or interpreted as capital-weighted averages from the empirical distribution. This abstraction is standard in post-Keynesian macro modeling and allows us to close the model and identify the steady-state outcomes u^*, g^*, and π^* under the behavioral rules inferred from the data.

Aggregate demand in this model is given by consumption out of wages since profits are fully retained by corporations. Given that the profit share is given by $\pi = \frac{\tau}{1+\tau}$, total consumption normalize by the total capital stock results in:

$$\frac{C_t}{K_t} = c_y = \frac{c_w Y_t^w}{K_t} \frac{Y_t}{Y_t} = c_w(1 - \pi_t)u_t \tag{20}$$

where c_w is the propensity to consume out of wages, Y^w is wage income, $\frac{c_w Y_t^w}{Y_t}$ becomes $c_w(1 - \pi_t)$ and $\frac{Y_t}{K_t} = u_t$. In a closed economy without government, the equilibrium condition necessary to find the equilibrium rates of growth and capacity utilization is given by $u_t = c_y + g_t$. I start with finding the equilibrium rate of capacity utilization, u^*:

$$u_t = u_t c_w(1 - \pi_t) + (\gamma\Omega + g_\pi \Pi + g_u u_t \Omega) \tag{21}$$

where $\Omega = \sum_{i=1}^{N^n} s_i^n + \sum_{j=1}^{N^a} s_j^a(1-\theta_j)$ and $\Pi = \sum_{i=1}^{N^n} s_i^n \pi_i^n + \sum_{j=1}^{N^a} s_j^a \pi_j^a (1-\theta_j)$ (see Appendix B for further explanation about the dynamics of Ω and Π. The equilibrium rate of capicity utilization u^* is then:

$$u^* = \frac{\gamma\Omega + g_\pi \Pi}{1 - c_w(1 - \pi) - g_u \Omega} \tag{22}$$

Plugging equation 23 into the aggregate growth rate in equation 18 gets us the equilibrium rate of growth:

$$g^* = \left(\frac{\gamma\Omega + g_\pi \Pi}{1 - c_w(1 - \pi) - g_u \Omega} \right) [1 - c_w(1 - \pi)] \tag{23}$$

This final expression shows how g^* depends, as usual, on the distribution of income between wages, $(1 - \pi_t)$, and profit, π_t as well as the investment responses g_u, g_m to utilization and the profit share. However, the heterogeneity of the model as well as the inclusion of the acquisition intensity of the model also highlight the importance of the market structure s_t^n and s_t^a and the share of acquisition flows in total investment θ in the determination of g^* and u^*[3]. In other words, the distribution of profits among different firms and the decision of firms to grow through capital expenditure or acquisitions affects the macroeconomic level of capacity utilization and of capital growth.

Furmthermore, it is important to note that Ω can be interpreted as the sahre of corporate capital base whose investment outlays actually show up as new capital goods. As either the acquirer capital share s^a rises or acquires' acquisitions intensity θ rises, a larger portion of total "investment"

[3]Had I introduce ϵ, the first term in g^* would have shown an extra $-(1 - \epsilon)\theta_t s_t^a$, reducing even further the equilibrium rate if $\epsilon < 0$

is just ownership transfer. Ω therefore falls capturing an economy-wide "leakage" from investment spending goods-market demand. In the equilibrium rates g^* and u^*, Ω scales both the autonomous investment term and the utilization accelerator, and it also enters the denominator that governs the Keynesian stability assumption. In turn, Π is the investment relevant profit share: the fraction of profits that actually affects capacity-creating investment once acquisitions are netted out (see appendix A for their changes as acquiring firms concentrate the market and acquisition intensity rises.).

Holding other arguments fixed and under $\gamma > 0$, $g_u \geq 0$, $g_\pi \geq 0$, and the usual Keynesian stability condition:

$$\frac{\partial u^*}{\partial \Omega} > 0, \quad \frac{\partial g^*}{\partial \Omega} > 0.$$

Since $\Omega = 1 - S^a \bar{\theta}^{\,s}$,

$$\frac{\partial u^*}{\partial S^a} < 0, \quad \frac{\partial g^*}{\partial S^a} < 0, \qquad \frac{\partial u^*}{\partial \theta_j} < 0, \quad \frac{\partial g^*}{\partial \theta_j} < 0,$$

and an increase in s^n (with other components fixed) raises Ω and hence u^*, g^*. It is clear then that a higher share of acquisition expenditure impacts negatively the rate of growth and capacity utilization.

To understand the mechanism at play here—why θ is a leakage from (goods) demand—let's revisit acquirers investment g^a, the (total) investment growth rate of acquirers. Acquirers devote a fraction $(1 - \theta_t)$ of their investment to new capital formation and a fraction θ_t to acquisitions. Denote the acquirers' capacity-creating rate by

$$g^a_{c,t} \;\equiv\; (1 - \theta_t)\, g^a_t. \tag{24}$$

Non-acquirers' investment fully creates capacity, so their capacity-creating rate is g^n_t, as in equation 12. The flow of goods demand for investment (gross fixed capital formation) is therefore

$$I^{\text{goods}}_t \;=\; g^n_t\, K^n_t \;+\; g^a_{c,t}\, K^a_t \;=\; g^n_t\, K_t s^n_t \;+\; (1 - \theta_t)\, g^a_t\, K_t s^a_t,$$

where $s^n_t \equiv K^n_t / K_t$ and $s^a_t \equiv K^a_t / K_t$ are capital shares with $s^n_t + s^a_t = 1$. The former expression is equivalent to equation 17 above. Holding $\{g^n_t, g^a_t, s^a_t, K_t\}$ (and distribution/utilization) fixed, the partial derivative of investment goods demand with respect to θ_t is

$$\left.\frac{\partial I^{\text{goods}}_t}{\partial \theta_t}\right|_{g^n, g^a, s^a, K} \;=\; -\, g^a_t\, K_t\, s^a_t \;<\; 0.$$

Thus, each marginal increase in θ_t diverts $g^a_t K_t s^a_t$ of expenditure away from newly produced capital goods and into acquisition outlays (a financial ownership transfer), creating a leakage from the goods market.

The immediate impact on aggregate demand can be seen using the expression for aggregate demand: $D_t = C_t + I^{\text{goods}}_t$, with $C_t = c_w(1 - \pi_t)\, u_t\, K_t$. For the same ceteris paribus conditions,

$$\left.\frac{\partial D_t}{\partial \theta_t}\right|_{\pi, u, g^n, g^a, s^a, K} \;=\; \frac{\partial I^{\text{goods}}_t}{\partial \theta_t} \;=\; -\, g^a_t\, K_t\, s^a_t \;<\; 0.$$

The acquisition payment raises the acquirer's financial outlay but does not generate new capital-goods production; it is an asset swap. The seller (target) receives cash/claims and loses an equal amount of tangible capital. In this baseline (retained profits, no immediate payouts), the proceeds are a portfolio reshuffle, not additional consumption. Moreover, because the target's capital stock falls, its subsequent capacity-creating spending $g_t^n K_t^n$ is mechanically smaller (scale effect), so there is no offsetting rise in goods demand from the target, as explained in more detailed next.

A relevant remaining question to take full account of the mechanism of why θ is a leakage from demand is what happens to the "demand of the acquired firm" (the target)? If by the target's "demand" we mean its purchases of capital goods (capital expenditure), the immediate effect of an acquisition is mechanical: after selling assets, the target's capital stock falls, so with the same behavioural investment rule $g_t^n = \gamma + g_\pi \pi_t + g_u u_t^n$ its capacity-creating spending $I_t^n = g_t^n K_t^n$ declines simply because K_t^n is smaller. There is no offset from the acquisition payment itself, which is a financial transfer (ownership change) rather than a purchase of newly produced capital goods.

If by the target's "demand" we mean the demand for its product, this depends on aggregate demand $D_t = C_t + I_t^{\text{goods}}$. Since I_t^{goods} falls when θ_t rises (the acquisition share diverts outlays from new capital goods), we have $\partial D_t / \partial \theta_t < 0$ ceteris paribus. Lower D_t feeds back into the target's sales y_t^n and thus into its utilization $u_t^n = y_t^n / K_{t-1}^n$[4].

A potential short-run effect might be the rise of utilization of target firms. Because K_{t-1}^n drops on impact, the target's utilization $u_t^n = y_t^n / K_{t-1}^n$ can rise *mechanically* even if its sales y_t^n do not increase. Through the investment rule, a higher u_t^n tends to push up g_t^n via the $g_u u_t^n$ term. However, two forces limit this effect: (i) the target's capital expenditure is $g_t^n K_t^n$, so a higher g_t^n is applied to a smaller K_t^n; and (ii) the fall in D_t (from $\theta_t \uparrow$) tends to lower y_t^n and hence u_t^n in general equilibrium. Consequently, the utilization "boost" is at best transitory and typically insufficient to offset the loss of capital and the demand leakage.

In the medium-run composition effects drive outcomes. As the acquirer integrates the purchased capacity, consolidation can (a) sustain higher markups, reducing $c_w(1 - \pi_t)$ and weakening consumption demand; (b) create localized overcapacity at the acquirer if expansion outruns demand, depressing future utilization and the g_u channel; and (c) reduce the target's future scale, further lowering its investment flow $g_{t+\ell}^n K_{t+\ell}^n$. Thus, even if the target's utilization momentarily rises after divestment, the combined effects of a smaller capital base, lower aggregate demand, and potential overcapacity at the acquirer make it unlikely that the target's own capital expenditure or sales will offset the initial leakage from higher θ_t.

4.2 Demand and Growth Regimes

The Bhaduri/Marglin-Kurz investment function allows for different macroeconomic outcomes out of changes in functional income distribution. Two growth regimes are possible determined by the parameters of the model. In the current configuration, market structure and the share of acquisition are allowed to explicitly impact the determination of the growth regime.

To isolate a capital-weighted average profit share, we ideally need:

[4] In the AB model in section 5, the demand for the goods of the target firm is farther reduced due to the market share determination set up, in which larger firms absorb a larger share of demand.

$$\pi = \sum_{i=1}^{N} s_i^n \pi_i^n + \sum_{j=1}^{N^a} s_j^a \pi_j^a \tag{25}$$

However, only part of acquirers' behavior contributes to *new* capital formation: for each acquirer j, the investment rule is effectively weighted by $(1-\theta_j)$, the share not devoted to acquisitions. Consequently, the profit term that enters the aggregated investment function is

$$\Pi \;\equiv\; \sum_{i=1}^{N^n} s_i^n\, \pi_i^n \;+\; \sum_{j=1}^{N^a} s_j^a (1-\theta_j)\, \pi_j^a. \tag{26}$$

Note that Π is not the macro profit share; it is the investment-relevant, acquisition-adjusted profit term. Its magnitude jointly reflects income distribution and firms' allocation between acquisitions and capacity-creating investment. Hence changes in θ_j (e.g., changes in acquisitions relative to capital expenditures) alter the aggregate link between profits and growth even if firm-level profit shares π_i do not change.

$$\pi^{\bar{e}ff} = \sum_{i=1}^{N^n} s_i^n \pi_i^n + \sum_{j=1}^{N^a} s_j^a \pi_j^a (1-\theta_j) \tag{27}$$

Given the complexity in assessing the effect of a change in functional income distribution on utilization and growth given by the firm-level behaviour we take different approaches. First, we keep firm heterogeneity and focus on changes a uniform-shift in profits, a shift in profits concentrated in acquiring firms, and an increase in market shares of acquiring firms. The outcomes of the derivative of the Ω and Π vary depending on those three cases, which adds a level of tedious repetition to the analysis (see Appendix C for their derivation). Second, we take the usual simplifying assumption of constant utilization and profit share rates across firms common for macroeconomic closure of economic models.

4.2.1 Full heterogeneity

Recall the acquisition-adjusted profit term and the effective capacity-creating weight:

$$\Pi \;\equiv\; \sum_{i=1}^{N^n} s_i^n\, \pi_i^n \;+\; \sum_{j=1}^{N^a} s_j^a (1-\theta_j)\, \pi_j^a, \qquad \Omega \;\equiv\; \sum_{i=1}^{N^n} s_i^n \;+\; \sum_{j=1}^{N^a} s_j^a (1-\theta_j). \tag{28}$$

Aggregate utilization and growth at equilibrium are

$$u^* \;=\; \frac{N}{D}, \qquad g^* \;=\; B\, u^*, \qquad N \equiv \gamma\, \Omega + g_\pi\, \Pi, \quad D \equiv 1 - c_w(1-\pi) - g_u\, \Omega, \quad B \equiv 1 - c_w(1-\pi). \tag{29}$$

We assume the usual stability condition $D > 0$.

Differentiating Π with respect to π. Taking the total derivative of (28) with respect to the aggregate profit share π yields

$$\frac{d\Pi}{d\pi} = \sum_{i=1}^{N^n}\left(s_i^n\,\frac{d\pi_i^n}{d\pi} + \pi_i^n\,\frac{ds_i^n}{d\pi}\right) + \sum_{j=1}^{N^a}\left((1-\theta_j)\,s_j^a\,\frac{d\pi_j^a}{d\pi} + (1-\theta_j)\,\pi_j^a\,\frac{ds_j^a}{d\pi} - s_j^a\,\pi_j^a\,\frac{d\theta_j}{d\pi}\right) \tag{30}$$

$$= \underbrace{\sum_{i=1}^{N^n} s_i^n\,\frac{d\pi_i^n}{d\pi}}_{\text{profit-shift (non-acq.)}} + \underbrace{\sum_{j=1}^{N^a}(1-\theta_j)\,s_j^a\,\frac{d\pi_j^a}{d\pi}}_{\text{profit-shift (acq., effective weight)}} + \underbrace{\pi_i^n\,\frac{ds_i^n}{d\pi} + \sum_{j=1}^{N^a}\pi_j^a\left[(1-\theta_j)\frac{ds_j^a}{d\pi} - s_j^a\,\frac{d\theta_j}{d\pi}\right]}_{\text{composition \& reallocation}}.$$

Equation (30) separates three channels: (i) a uniform or non-uniform shift in firm profit shares, (ii) capital-share reallocation across firms, and (iii) a behavioral response of acquisition intensity to distributional changes. The value of this derivative depends on the direction of profit distribution among firms and on the corporate structure. Thus, we study it in three different situations.

4.2.2 Uniform profit-share shift, structure fixed.

In a simple case I consider a uniform shift in firm-level profit shares and holds market structure and acquisition behaviour fixed at first pass:

$$\frac{ds_i^n}{d\pi} = \frac{ds_j^a}{d\pi} = \frac{d\theta_j}{d\pi} = 0, \qquad \frac{d\pi_i^n}{d\pi} = \frac{d\pi_j^a}{d\pi} = 1.$$

Then (30) collapses to

$$\frac{d\Pi}{d\pi} = \sum_{i=1}^{N^n} s_i^n + \sum_{j=1}^{N^a} s_j^a(1-\theta_j) = \Omega, \qquad \frac{d\Omega}{d\pi} = 0. \tag{31}$$

Thus a one-unit increase in the representative profit share raises the investment-relevant profit term by exactly the capacity-creating weight Ω.

Regime derivatives and conditions (uniform shift). From (29), with $N'(\pi) = g_\pi \frac{d\Pi}{d\pi}$ and $D'(\pi) = c_w$, the utilization derivative is

$$\frac{du^*}{d\pi} = \frac{D\,g_\pi\,\frac{d\Pi}{d\pi} - N\,c_w}{D^2} \overset{(31)}{=} \frac{D\,g_\pi\,\Omega - N\,c_w}{D^2} = \frac{(1-c_w(1-\pi)-g_u\Omega)\,g_\pi\,\Omega - (\gamma\Omega + g_\pi\Pi)\,c_w}{(1-c_w(1-\pi)-g_u\Omega)^2}. \tag{32}$$

With $g^* = B\,u^*$ and $B'(\pi) = c_w$,

$$\frac{dg^*}{d\pi} = B\,\frac{du^*}{d\pi} + c_w\,\frac{N}{D} = \frac{BD\,g_\pi\,\Omega - c_w N g_u \Omega}{D^2}. \tag{33}$$

Hence:

$$\text{Profit-led utilization} \iff D\,g_\pi\,\Omega > c_w\,N, \qquad \text{Wage-led utilization} \iff D\,g_\pi\,\Omega < c_w\,N,$$

$$\text{Profit-led growth} \iff BD\,g_\pi\,\Omega > c_w\,N\,g_u\,\Omega \iff g_\pi > \frac{c_w\,N\,g_u}{BD},$$

$$\text{Wage-led growth} \iff g_\pi < \frac{c_w\,N\,g_u}{BD}.$$

Interpretation. The uniform shift pits an *investment channel* (g_π scaled by the capacity-creating weight Ω and the stability margin D) against a *consumption channel* (c_w scaled by the investment numerator N). The investment-relevant profit term increases in proportion to the economy's capacity-creating weight, Ω. This yields a clean regime criterion: a higher profit share raises equilibrium utilization and growth only if the investment response $g_\pi\Omega$ outweighs the demand leakage from lower wage consumption, c_w. Higher acquisition intensity—through larger $\bar{\theta}^{\,s}$ and/or a bigger acquirer capital share S^a—shrinks Ω, mechanically weakening both $\partial u^*/\partial\pi$ and $\partial g^*/\partial\pi$ and making profit-led outcomes less likely. Further declines in Ω may, if the economy is near the regime boundary, flip the regime from wage to profit led. However, in the case of a profit-led economy, a lower Ω would reduce the growth and utilization elasticities to the profit share, pushing the economy towards an weak, stagnant profit-led situation (the same is true for a wage-led economy). Empirically, the elasticity of investment or growth to profit-share shocks should be smaller in periods/sectors with elevated M&A intensity. Policy instruments that raise the capacity-creating share of investment (e.g., incentives tied to net new capital rather than acquisitions) increase Ω and make profit-led outcomes more plausible.

4.2.3 Acquirer-only profit-share shift (structure fixed).

Consider a change in functional distribution that affects only acquirers' profit shares, holding market structure and acquisition intensities fixed:

$$\frac{ds_i^n}{d\pi} = \frac{ds_j^a}{d\pi} = \frac{d\theta_j}{d\pi} = 0, \qquad \frac{d\pi_i^n}{d\pi} = 0, \quad \frac{d\pi_j^a}{d\pi} = 1.$$

Then from (30),

$$\frac{d\Pi}{d\pi} = \sum_{j=1}^{N^a} s_j^a(1-\theta_j) \;\equiv\; W = S^a\big(1-\bar{\theta}^{\,s}\big)\,, \qquad \frac{d\Omega}{d\pi} = 0, \tag{34}$$

where $S^a = \sum_{j=1}^{N^a} s_j^a$ and $\bar{\theta}^{\,s} = [S^a]^{-1}\sum_{j=1}^{N^a} s_j^a\theta_j$.

Using $u^* = N/D$ with $N = \gamma\Omega + g_\pi\Pi$ and $D = 1 - c_w(1-\pi) - g_u\Omega$, the quotient rule gives

$$\frac{du^*}{d\pi} = \frac{D\,g_\pi\,W - N\,c_w}{D^2}, \qquad \frac{dg^*}{d\pi} = B\,\frac{du^*}{d\pi} + c_w\,\frac{N}{D} = \frac{BD\,g_\pi\,W - c_w N g_u\Omega}{D^2}. \tag{35}$$

Regime conditions.

$$\text{Profit-led utilization} \iff D\,g_\pi\,W > c_w\,N, \qquad \text{Wage-led utilization} \iff D\,g_\pi\,W < c_w\,N.$$

$$\text{Profit-led growth} \iff BD\,g_\pi\,W > c_w\,N\,g_u\,\Omega \iff g_\pi > \frac{c_w\,N\,g_u\,\Omega}{BD\,W},$$

$$\text{Wage-led growth} \iff g_\pi < \frac{c_w\,N\,g_u\,\Omega}{BD\,W}.$$

Interpretation. When profit-share gains are concentrated among acquirers, the macro transmission scales with the *effective acquirer weight* $W = S^a(1-\bar{\theta}^{\,s})$, not with S^a alone. A larger acquirer footprint (S^a) amplifies the shock, but higher acquisition intensity ($\bar{\theta}^{\,s}$) dampens it because only $(1-\bar{\theta}^{\,s})$ of acquirer investment builds new capacity. Relative to a uniform shift, the utilization and growth responses are therefore weaker the higher is $\bar{\theta}^{\,s}$. Even in a profit-led configuration, high acquirer intensity (large ($\bar{\theta}^{,s}$), hence small (W)) compresses the profit-to-investment pass-through so that ($\partial g^*/\partial\pi > 0$) but small—rising profits then buy little extra capacity, yielding a "profit-led stagnation" outcome. In wage-led settings, concentrating profit gains in acquirers shrinks the absolute sensitivity ($|\partial g^*/\partial\pi|$) but still lowers wage demand, so the net effect is weaker growth and utilization rather than a reversal—i.e., stagnation via a muted profit channel and eroded wage channel. Regime flips are asymmetric: a shift from profit-led to wage-led can occur when (W) is sufficiently small (the profit channel cannot offset the consumption drag), whereas the reverse flip typically requires a larger (W) and/or much higher (g_π), which acquirer-only profit shocks with high ($\bar{\theta}^{,s}$) are unlikely to deliver.

Capital reallocation toward acquirers (structure endogenous). Consider composition effects where firm profit shares and acquisition intensities are held fixed, but the capital distribution shifts toward acquirers as π changes:

$$\frac{d\pi_i^n}{d\pi} = \frac{d\pi_j^a}{d\pi} = 0, \qquad \frac{d\theta_j}{d\pi} = 0, \qquad \sum_{i=1}^{N^n} \frac{ds_i^n}{d\pi} + \sum_{j=1}^{N^a} \frac{ds_j^a}{d\pi} = 0, \qquad \frac{dS^a}{d\pi} \equiv \Delta_s > 0.$$

For a transparent aggregation, take reallocation to be proportional within groups:

$$\frac{ds_j^a}{d\pi} = \Delta_s \frac{s_j^a}{S^a}, \qquad \frac{ds_i^n}{d\pi} = -\Delta_s \frac{s_i^n}{1 - S^a}.$$

Using (28), the composition terms imply

$$\frac{d\Pi}{d\pi} = \sum_{i=1}^{N^n} \pi_i^n \frac{ds_i^n}{d\pi} + \sum_{j=1}^{N^a} (1-\theta_j)\pi_j^a \frac{ds_j^a}{d\pi} = -\Delta_s \bar{\pi}^{\,n} + \Delta_s (1 - \bar{\theta}^{\,s})\, \bar{\pi}^{\,a,\theta}, \tag{36}$$

$$\frac{d\Omega}{d\pi} = \sum_{i=1}^{N^n} \frac{ds_i^n}{d\pi} + \sum_{j=1}^{N^a} (1-\theta_j) \frac{ds_j^a}{d\pi} = -\bar{\theta}^{\,s} \Delta_s, \tag{37}$$

where

$$\bar{\pi}^{\,n} \equiv \frac{\sum_i s_i^n \pi_i^n}{1 - S^a}, \qquad \bar{\pi}^{\,a,\theta} \equiv \frac{\sum_j s_j^a (1-\theta_j)\pi_j^a}{\sum_j s_j^a (1-\theta_j)}, \qquad \bar{\theta}^{\,s} \equiv \frac{1}{S^a} \sum_j s_j^a \theta_j.$$

With $u^* = N/D$ where $N = \gamma\Omega + g_\pi \Pi$ and $D = 1 - c_w(1-\pi) - g_u\Omega$, the quotient rule gives

$$\frac{du^*}{d\pi} = \frac{D\big(\gamma\,\Omega' + g_\pi\,\Pi'\big) - N\big(c_w - g_u\,\Omega'\big)}{D^2} = \frac{\Delta_s}{D^2}\Big\{D\Big[-\gamma\,\bar{\theta}^{\,s} + g_\pi\big(-\bar{\pi}^{\,n} + (1-\bar{\theta}^{\,s})\,\bar{\pi}^{\,a,\theta}\big)\Big] - N\big(c_w + g_u\,\bar{\theta}^{\,s}\big)\Big\}. \tag{38}$$

With $g^* = B\,u^*$ and $B = 1 - c_w(1-\pi)$,

$$\frac{dg^*}{d\pi} = B\,\frac{du^*}{d\pi} + c_w\,\frac{N}{D}. \tag{39}$$

Interpretation. Endogenous structure introduces two composition channels. First, $\Omega' = -\bar{\theta}^{\,s}\Delta_s < 0$ captures that reallocation toward acquisition-intensive acquirers lowers the capacity-creating weight, mechanically damping the investment channel (via the $-\gamma\,\bar{\theta}^{\,s}$ and $+g_u\,\bar{\theta}^{\,s}$ terms). Second, Π' moves with the profitability differential: it rises only if acquirers' acquisition-adjusted profitability $(1 - \bar{\theta}^{\,s})\,\bar{\pi}^{\,a,\theta}$ exceeds non-acquirers' $\bar{\pi}^{\,n}$. The net regime effect is thus ambiguous a priori, but biased toward wage-led realizations when $\Omega' < 0$ and acquirers lack a sufficiently large profitability edge. Even in a profit-led configuration, high acquirer intensity (large $\bar{\theta}^{\,s}$, hence small $W = S^a(1-\bar{\theta}^s)$) compresses the profit-to-investment pass-through so that $\partial g^*/\partial\pi > 0$ but small—rising profits then add little capacity, yielding a "profit-led stagnation" outcome. In wage-led settings, concentrating capital in acquirers shrinks $|\partial g^*/\partial\pi|$ while also lowering wage demand, so the typical result is weaker growth and utilization rather than a reversal—i.e., stagnation via a muted profit channel and an eroded wage channel. Regime flips are asymmetric: profit-led to wage-led can occur when W becomes sufficiently small that the investment channel cannot offset the consumption drag; the reverse typically requires a much larger W and/or substantially higher g_π, which reallocation toward high-$\bar{\theta}^s$ acquirers is unlikely to deliver.

Across all cases, the decisive quantity is the economy's capacity-creating weight, Ω. Uniform shifts use Ω directly; acquirer-only shocks scale with the narrower $W = S^a(1-\bar{\theta}^s)$; reallocation works through Ω' (typically negative) and Π' (composition of profitability). Higher acquisition intensity and greater acquirer dominance reduce the likelihood of profit-led outcomes by shrinking the share of investment that translates into new productive capacity. Policy instruments that tilt investment toward capacity formation (rather than acquisitions) raise Ω and make profit-led regimes more plausible; conversely, acquisition waves tend to move the system toward wage-led regimes even when measured profits rise.

4.2.4 Firm-level homogeneity

For tractability, assume homogeneous profit shares and utilization across firms. Let S_t^a and S_t^n be the capital shares of acquirers and non-acquirers, with $S_t^a + S_t^n = 1$, and let θ_t be the (common) acquisition intensity among acquirers. Define the capacity-creating weight

$$\Omega_t \;\equiv\; S_t^n + (1-\theta_t)S_t^a \;=\; 1-\theta_t S_t^a.$$

Aggregate new capital formation is

$$g_t \;\equiv\; \frac{I_{c,t}^{\text{total}}}{K_t} = \big(\gamma + g_\pi\,\pi_t + g_u\,u_t\big)\,\Omega_t. \tag{40}$$

Since profits are fully retained, consumption out of wages yields

$$\frac{C_t}{K_t} = c_w(1-\pi_t)\,u_t,$$

and goods-market equilibrium is

$$u_t \;=\; c_w(1-\pi_t)\,u_t \;+\; g_t. \tag{41}$$

Combining (40) and (41) and solving for utilization gives

$$u^* = \frac{\Omega_t\big(\gamma + g_\pi\,\pi_t\big)}{1-c_w(1-\pi_t)-g_u\,\Omega_t} \;\equiv\; \frac{\Omega_t(\gamma+g_\pi\pi_t)}{D_t}, \qquad D_t \equiv 1-c_w(1-\pi_t)-g_u\,\Omega_t. \tag{42}$$

With $g^* = \big[1 - c_w(1-\pi_t)\big]\, u^* \equiv B_t\, u^*$, the equilibrium growth rate is

$$g^* = \frac{B_t\,\Omega_t\,(\gamma + g_\pi\,\pi_t)}{D_t}, \qquad B_t \equiv 1 - c_w(1-\pi_t). \tag{43}$$

This final expression shows how g^* depends, as usual, on the distribution of income between wages, $(1-\pi_t)$, and profits, π_t, as well as on the investment responses g_u and g_π to utilization and the profit share. It also highlights the role of market structure—via the capital shares s_t^n and s_t^a—and of the share of acquisition flows in total investment, θ_t.[5]

From $\Omega_t = S_t^n + (1-\theta_t)S_t^a = 1 - \theta_t S_t^a$, the comparative statics are

$$\frac{\partial u^*}{\partial s_t^n} > 0, \quad \frac{\partial g^*}{\partial s_t^n} > 0; \qquad \frac{\partial u^*}{\partial s_t^a} < 0, \quad \frac{\partial g^*}{\partial s_t^a} < 0 \text{ (for } \theta_t > 0); \qquad \frac{\partial u^*}{\partial \theta_t} < 0, \quad \frac{\partial g^*}{\partial \theta_t} < 0.$$

Intuitively, a larger non-acquirer share s_t^n raises the capacity-creating weight Ω_t, while a larger acquirer share s_t^a or a higher acquisition intensity θ_t lowers Ω_t. Consequently, a higher share of acquisition expenditure (or greater acquirer dominance) reduces both the equilibrium utilization and growth rates.

Using the expressions above, the derivatives with respect to π_t are:

$$\frac{du^*}{d\pi_t} = \frac{D_t\, g_\pi\, \Omega_t - c_w\, N_t}{D_t^2} = \frac{\Omega_t\big(g_\pi D_t - c_w(\gamma + g_\pi \pi_t)\big)}{D_t^2}, \tag{44}$$

$$\frac{dg^*}{d\pi_t} = B_t\,\frac{du^*}{d\pi_t} + c_w\,\frac{N_t}{D_t} = B_t\,\frac{D_t\, g_\pi\, \Omega_t - c_w\, N_t}{D_t^2} \;+\; c_w\,\frac{N_t}{D_t}. \tag{45}$$

Where $N \equiv \Omega_t(\gamma + g_\pi \pi_t)$. Both derivatives scale with Ω_t (shrinking as θ_t or s_t^a rise) and are attenuated by the stability margin D_t in the denominator.

Regime evaluation. With $D_t > 0$, the signs of the comparative statics follow from the numerators of the derivatives given above.

Utilization regime.

$$\frac{du^*}{d\pi_t} > 0: \text{ Profit led} \iff D_t\, g_\pi\, \Omega_t > c_w\, N_t, \qquad \frac{du^*}{d\pi_t} < 0 \text{ Wage led} \iff D_t\, g_\pi\, \Omega_t < c_w\, N_t.$$

Equivalently,

$$g_\pi \gtrless \frac{c_w\, N_t}{\Omega_t\, D_t} = \frac{c_w\,(\gamma + g_\pi \pi_t)}{D_t}.$$

The investment channel $g_\pi \Omega_t$ must dominate the wage–consumption leakage c_w once scaled by the stability margin D_t.

Growth regime. Using $D_t - B_t = -g_u\,\Omega_t$,

$$\frac{dg^*}{d\pi_t} > 0 \iff B_t D_t\, g_\pi\, \Omega_t > c_w\, N_t\, g_u\, \Omega_t, \qquad \frac{dg^*}{d\pi_t} < 0 \iff B_t D_t\, g_\pi\, \Omega_t < c_w\, N_t\, g_u\, \Omega_t,$$

[5] If acquisitions convert only a fraction ϵ of spending into effective capacity, the capacity-creating weight becomes $\Omega_t = S_t^n + (1-\epsilon\theta_t)S_t^a$. Relative to $\epsilon = 1$, this adds a term $-(1-\epsilon)\theta_t S_t^a$ that further reduces u^* and g^* when $\epsilon < 1$.

i.e.

$$g_\pi \gtrless \frac{c_w\, N_t\, g_u}{B_t\, D_t}.$$

Profit-led growth requires the profit sensitivity of investment (amplified by B_t and the stability margin D_t) to outweigh the utilization feedback g_u acting through N_t.

Role of structure. Since $\Omega_t = 1 - \theta_t s_t^a$, higher acquisition intensity θ_t or a larger acquirer share s_t^a reduce Ω_t. This raises D_t and lowers N_t, which (in the homogeneous, structure-fixed case) makes the profit-led inequalities above easier to satisfy; conversely, lower θ_t or s_t^a (higher Ω_t) tilt the economy toward wage-led outcomes.

Table 1: Effects of θ and s_a on Growth, Utilization Rates and Growth Regimes

Current regime	**Parameter**	**Impact on $\frac{dg^*}{d\pi_t}$**	**Impact on $\frac{du^*}{d\pi_t}$**	**Outcome**
Wage-led	Higher θ (more acquisitions)	smaller in magnitude (less negative) $dg^*/d\pi_t$	smaller in magnitude (less negative) $du^*/d\pi_t$	Less wage-led
Wage-led	Higher s_t^a (more acquiring firms)	smaller in magnitude (less negative) $dg^*/d\pi_t$	smaller in magnitude (less negative) $du^*/d\pi_t$	Less wage-led
Profit led	Higher θ (more acquisitions)	Decreases dg^*/dm_t	Decreases $du^*/d\pi_t$	Less profit-led
Profit led	Higher s_t^a (more acquiring firms)	Decreases $dg^*/d\pi_t$	Decreases $du^*/d\pi_t$	Less profit-led

Regime thresholds and the role of θ_t and s_t^a (homogeneous, structure fixed). With $D_t > 0$, the utilization and growth regimes are determined by

$$\frac{du^*}{d\pi_t} > 0 \iff D_t\, g_\pi\, \Omega_t > c_w\, N_t, \qquad \frac{dg^*}{d\pi_t} > 0 \iff B_t D_t\, g_\pi\, \Omega_t > c_w\, N_t\, g_u\, \Omega_t,$$

where $\Omega_t = 1 - \theta_t s_t^a$, $N_t = \Omega_t(\gamma + g_\pi \pi_t)$, $D_t = 1 - c_w(1-\pi_t) - g_u\Omega_t$, and $B_t = 1 - c_w(1-\pi_t)$. Equivalently,

$$\text{(Utilization)} \quad g_\pi \gtrless \underbrace{\frac{c_w\, N_t}{\Omega_t D_t}}_{T_u(\Omega_t)} = \frac{c_w(\gamma + g_\pi \pi_t)}{B_t - g_u \Omega_t}, \qquad \text{(Growth)} \quad g_\pi \gtrless \underbrace{\frac{c_w\, N_t\, g_u}{B_t D_t}}_{T_g(\Omega_t)}.$$

Since $\Omega_t = 1 - \theta_t s_t^a$, an increase in θ_t or s_t^a lowers Ω_t, raises D_t, and lowers N_t. Both thresholds $T_u(\Omega_t)$ and $T_g(\Omega_t)$ are *decreasing* in Ω_t. Hence, holding primitives fixed, higher θ_t or s_t^a makes profit-led outcomes *easier* to satisfy in this homogeneous, structure-fixed case; the converse holds when Ω_t rises.

Regime changes by changing θ_t or s_t^a are possible under the right parameters. Suppose the economy is initially wage-led in utilization, $g_\pi < T_u(\Omega_{\text{old}})$. A wage-led to profit-led flip occurs after raising θ_t and/or s_t^a (so Ω falls to Ω_{new}) if and only if

$$T_u(\Omega_{\text{new}}) \; < \; g_\pi \; < \; T_u(\Omega_{\text{old}}).$$

A necessary condition for such a flip to be achievable by *any* reduction in Ω is a low consumption multiplier ($\frac{c_w}{1-c_w}$) applied to autonomous investment (γ):

$$g_\pi \;>\; T_u(0) \;=\; \frac{c_w\,\gamma}{1-c_w},$$

since $T_u(\Omega)$ attains its minimum at $\Omega \to 0$ (with $D_t \to B_t$). Conversely, starting from profit-led, a profit-led $\to$ wage-led flip requires raising Ω (i.e., lowering θ_t and/or s_t^a) sufficiently that $g_\pi < T_u(\Omega_{\max})$, where $\Omega_{\max} < B_t/g_u$ is bounded by stability ($D_t > 0$). Analogous statements hold for growth using $T_g(\Omega_t)$.

Even when the sign remains profit-led (because $g_\pi > T_u(\Omega_t)$ continues to hold as Ω_t falls), higher θ_t or s_t^a can drive the economy toward stagnation. As $\Omega_t \downarrow 0$,

$$u^* = \frac{N_t}{D_t} \;\longrightarrow\; 0, \qquad g^* = B_t\,u^* \;\longrightarrow\; 0,$$

and the sensitivities shrink to zero,

$$\frac{du^*}{d\pi_t} \;\sim\; \frac{g_\pi}{B_t}\,\Omega_t \;\longrightarrow\; 0, \qquad \frac{dg^*}{d\pi_t} \;\sim\; g_\pi\,\Omega_t \;\longrightarrow\; 0.$$

Thus, increases in θ_t or s_t^a can leave the economy *profit-led in sign* but with both the level of growth and the responsiveness to distributional changes becoming arbitrarily small. Intuitively, a larger fraction of “investment” takes the form of acquisitions rather than capacity creation, so the capacity-creating weight Ω_t vanishes and the system becomes stagnant.

It is shown in Appendix C how as long as there exists a reallocation of capital from non-acquiring firms to acquiring firms, in other words, as long as a portion of investment is in the form of acquisition expenditure, the economy tend towards market concentration, which pushes the economy into stagnation.

5 A macroeconomic Bhaduri-Marglin model simulation with heterogeneous firms

Kaleckian growth and distribution models are based on the idea of imperfectly competitive markets, where firms set prices by applying a markup over unit costs. In Kalecki’s framework, this markup is determined by what he called the ”degree of monopoly,” which, in turn, shapes the distribution of income between profits and wages. A key factor influencing the degree of monopoly is market concentration, which, in our model, increases with rising acquisition expenditures. As demonstrated in the previous section, the evolving market structure in this model makes it difficult to assume a constant markup over time.

The second factor influencing the degree of monopoly—and consequently the markup in firms’ pricing decisions—is the intensity of price competition [6]. While greater market concentration tends to increase the markup, a high degree of price competition exerts a downward pressure on it.

In the AB simulation of the model, I incorporate these two opposing effects in the determina-

[6]Since the current model excludes overhead costs and does not account for wage bargaining power, we abstract from the other two determinants emphasized by Kalecki in his discussion of the degree of monopoly.

tion of a firm's markup following a similar setup than Reissl (2020). After presenting the model setup, I discuss the results.

5.1 Model setup

The relative price is defined as $rp_i = \frac{p_i}{P}$, where p_i is the price set by firm i, and P represents the overall price level in the economy, given by $P = \sum q_i p_i$. Firms' market share are calculated as the ratio of firm's production over total production $\frac{y_i}{Y}$. Its determination is given partially by the influence of relative prices—higher relative prices lead to a lower market share for firm i at time t. To account for non-price competition, market share is also influenced by the firm's relative size. This can be interpreted as the firm's ability to expand its geographical reach and attract a broader customer base.

Thus, the market shares of acquiring and non-acquiring firms are given by:

$$\tilde{q}_{i,t} \;=\; \frac{1}{2}\Big(s_{i,t-1}^{\iota_1} \;+\; rp_{i,t}^{\iota_2}\Big). \tag{46}$$

The values are then normalised by their total sum to ensure that the sum of market shares is equal to 1. Hence, larger firms ($s_{i,t-1}$ high) and lower relative prices ($rp_{i,t}$ low, with $\iota_2 < 0$) gain share, capturing non-price reach and price competition, respectively. The relative prices of firms are in turned determined by their markup levels, which are also influenced by past values of the individual firm market share:

$$\tau_{i,t}^{a} \;=\; \tau_{i,t-1}^{a} \;+\; \beta_\tau\big(q_{i,t-1}^{a} - q_{i,t-2}^{a}\big), \qquad \tau_{i,t}^{n} \;=\; \tau_{i,t-1}^{n} \;+\; \beta_\tau\big(q_{i,t-1}^{n} - q_{i,t-2}^{n}\big), \tag{47}$$

where β_{tau} is a parameter controlling the effect of the change in firms' market share in the current level of their markup. With $\beta_\tau > 0$. Rising share raises the markup (Kalecki's "degree of monopoly"), while higher markups feed into $p_{i,t}$ and—via $rp_{i,t}$—discipline shares through price competition in the next rounds. The aggregate price level is the unit-value index $P_t = \sum_i q_{i,t}\, p_{i,t}$. Acquisition expenditure θ reallocates capital from non-acquirers to acquirers in the capital-accumulation step, mechanically increasing $s_t^a = \sum_j s_{j,t}^a$. This structural shift raises concentration, amplifying the markup via the share channel, but, as shown in the analytical section, also reduces the capacity-creating weight $\Omega_t = 1 - S_t^a\, \bar{\theta}_t^s$, weakening the pass-through from profitability to goods-producing investment.

The implementation of the reallocation of capital due to acquisition investment flows in the model follows a structured mechanism where acquiring firms absorb capital from non-acquiring firms, simulating the redistribution of productive assets through mergers and acquisitions. This process unfolds in several steps. First, acquiring firms set a total investment rate using lagged state variables:

$$g_{\text{tot},i,t}^{a} \;=\; \gamma \;+\; g_\pi\, \pi_{i,t-1} \;+\; g_u\, u_{i,t-1}.$$

They then allocate a fraction to acquisitions according to a profit–rate adjustment rule:

$$\theta_{i,t} \;=\; \big[\; \theta_{i,t-1} \;+\; \beta_1\big(r_{i,t-1} - r_{i,t-2}\big)\;\big],$$

A rise (fall) in the profit rate increases (reduces) $\theta_{i,t}$, shifting the composition of investment toward (away from) acquisitions.

Then, total acquisition outlays at time t be

$$I_t^{\text{acq}} \equiv \sum_{j\in a} i_{j,t}^{\text{acq}} = \sum_{j\in a} \left[\theta_{j,t}\left(\gamma + g_\pi \pi_{j,t-1} + g_u u_{j,t-1}\right) k_{j,t-1}^a\right].$$

In the simulation these outlays are implemented as a transfer of installed capital from non–acquirers to acquirers *before* current-period accumulation. Define the remaining amount to collect as $R_t \leftarrow I_t^{\text{acq}}$. We iterate over non–acquirers $i = 1, \ldots, N^n$ and subtract

$$\delta_{i,t} \;=\; \min\{\, k_{i,t-1}^n,\; R_t \,\}, \qquad k_{i,t-1}^{n,\text{new}} \;=\; k_{i,t-1}^n - \delta_{i,t}, \qquad R_t \leftarrow R_t - \delta_{i,t},$$

until $R_t = 0$ or all non–acquirers are exhausted. Here $\delta_{i,t} \geq 0$ is the amount removed from non–acquirer i, and $k_{i,t-1}^{n,\text{new}} \geq 0$ is its post-transfer capital used as the base for period-t accumulation. This is a sequential reallocation, not a pro–rata one: firms early in the loop are drawn down first. By construction $k_{i,t-1}^{n,\text{new}} \geq 0$ and $\sum_{i\in n} \delta_{i,t} = \min\{I_t^{\text{acq}},\; \sum_{i\in n} k_{i,t-1}^n\}$. The acquirers' capital then evolves as

$$k_{j,t}^a \;=\; k_{j,t-1}^a \left(1 + g_{c,j,t}^a + g_{\text{acq},j,t}^a\right),$$

while non–acquirers accumulate on their post–transfer base, $k_{i,t}^n = k_{i,t-1}^{n,\text{new}}\left(1 + g_{i,t}^n\right)$. Hence total capital is stock–flow consistent:

$$K_t \;=\; \sum_{j\in a} k_{j,t}^a + \sum_{i\in n} k_{i,t}^n, \quad \text{with} \quad \sum_{j\in a} g_{\text{acq},j,t}^a\, k_{j,t-1}^a \;=\; \sum_{i\in n} \delta_{i,t}.$$

After each deduction we update the remaining pot $R_t \leftarrow R_t - \delta_{i,t}$. The loop terminates when $R_t = 0$ or when all non–acquirers have been exhausted. By construction, the transfer is stock–flow consistent and prevents negative capital: $\sum_{j\in a} g_{\text{acq},j,t}^a\, k_{j,t-1}^a = \sum_{i\in n} \delta_{i,t}$ and $k_{i,t-1}^{n,\text{new}} \geq 0$ for all i. If a non–acquirer's capital is driven to zero, the firm exits. This mechanism captures consolidation dynamics: sustained acquisition activity progressively shifts the capital distribution toward acquirers, raising S_t^a and, as shown analytically, lowering the capacity–creating weight Ω_t.

A consequence of this implementation is that the reallocation of capital due to acquisition investment flows takes place before production. In summary, the simulation follows a sequence where:

- **Acquirer investment decision.** Each acquiring firm sets its total investment rate from last period's profitability and utilization, then chooses what fraction to allocate to acquisitions versus new capital. The acquisition share responds to recent changes in its profit rate.
- **Capital transfer (acquisitions).** Acquisition outlays are implemented as a transfer of installed capital from non–acquirers to acquirers before current–period accumulation. The model subtracts available capital from non–acquirers sequentially (never below zero) until the acquisition pot is exhausted; firms that reach zero capital exit.
- **Non–acquirer investment.** After the transfer, non–acquirers invest on their reduced capital base using the same behavioural rule as acquirers' capital expenditure. This timing makes acquisitions a leakage from goods–market demand, because the acquisition component does not create new capacity.

- **Aggregation and demand.** Aggregate investment is the sum of acquirers' new–capital outlays and non–acquirers' investment; consumption is a fixed propensity out of wage income. Aggregate demand equals investment plus wage–financed consumption, and total capital is the sum of updated firm capital stocks.
- **Markups, wages, and prices.** Markups adjust with changes in market shares (a degree–of–monopoly effect). Wages evolve by a simple updating rule. Prices are set as a markup over unit labor cost.
- **Market shares and production.** Current market shares are determined from lagged relative size (non–price reach) and lagged relative prices (price competition), then normalized to sum to one. Firms produce to meet their demand shares; non–acquirers face an explicit capacity cap, while acquirers serve their demand share by design.
- **Outcomes and feedbacks.** From realized production, the simulation computes utilization, profit shares, and profit rates at the firm and aggregate levels. Repeated acquisitions raise the acquirer capital share and market concentration, which tends to raise markups but lowers the capacity–creating weight of investment, weakening the pass–through from profits to new capital formation.

After firms set investment, aggregate *new-capital* investment and consumption are

$$I_t \;=\; \sum_{j\in\mathcal{A}} i^c_{j,t} \;+\; \sum_{i\in\mathcal{N}} i^n_{i,t}, \qquad C_t \;=\; c_w\,[1-\pi_{t-1}]\,Y_{t-1},$$

so aggregate demand is

$$D_t \;=\; I_t + C_t, \qquad Y_t \;=\; D_t,$$

consistent with demand-led output.

The aggregate profit share is computed at market prices. Let total revenue be $\text{REV}_t = \sum_k p_{k,t}y_{k,t}$ and revenue weights $\omega_{k,t} = p_{k,t}y_{k,t}/\text{REV}_t$. Then

$$\pi_t \;=\; \sum_k \omega_{k,t}\, m_{k,t},$$

i.e., a revenue-weighted average of firm profit shares $m_{k,t}$.

Given demand-led closure and the market-share allocation described above, firm outputs are

$$y^a_{j,t} \;=\; q^a_{j,t}\,D_t, \qquad y^n_{i,t} \;=\; \min\Big\{\, q^n_{i,t}\,D_t,\; k^n_{i,t-1}/v \,\Big\},$$

so non-acquirers face an explicit capacity cap $k^n_{i,t-1}/v$, since acquisitions can erase them.

Capacity utilization, the profit share and the profit rate are updated for each firm:

$$u^a_{i,t} = \frac{y^a_{i,t}}{k^a_{i,t-1}}, \quad u^n_{i,t} = \frac{y^n_{i,t}}{k^n_{i,t-1}} \tag{48}$$

$$\pi^a_{i,t} = \frac{\tau^a_{i,t}}{1+\tau^a_{i,t}}, \quad \pi^n_{i,t} = \frac{\tau^n_{i,t}}{1+\tau^n_{i,t}} \tag{49}$$

$$r^a_{i,t} = \pi^a_{i,t}\frac{u^a i,t}{v}, \quad r^n_{i,t} = \pi^n_{i,t}\frac{u^n_{i,t}}{v} \tag{50}$$

where v is the constant capital-output ratio.

Finally, all aggregate variables are updated. *Capacity utilisation (macro):*

$$u_t = \frac{Y_t}{K_{t-1}}. \tag{51}$$

Capital growth (macro):

$$G_t = \frac{K_t - K_{t-1}}{K_{t-1}} = \sum_i s_{i,t-1}\, g^K_{i,t}, \qquad g^K_{i,t} \equiv \frac{k_{i,t} - k_{i,t-1}}{k_{i,t-1}}. \tag{52}$$

Aggregate profit rate:

$$r_t = \sum_i s_{i,t-1}\, r_{i,t}, \qquad r_{i,t} = \pi_{i,t}\, \frac{u_{i,t}}{v}. \tag{53}$$

Aggregate markup and profit share (ratio of totals):

$$\mathrm{REV}_t = \sum_i p_{i,t}\, y_{i,t}, \qquad \mathrm{WAGE}_t = \sum_i w_{i,t}\, a\, y_{i,t}, \tag{54}$$

$$\tau_t^{\mathrm{macro}} = \frac{\mathrm{REV}_t}{\mathrm{WAGE}_t} - 1, \qquad \pi_t = 1 - \frac{\mathrm{WAGE}_t}{\mathrm{REV}_t}. \tag{55}$$

Descriptive (revenue–weighted) average markup (optional):

$$\omega_{i,t} = \frac{p_{i,t} y_{i,t}}{\mathrm{REV}_t}, \qquad \tau_t^{\mathrm{avg}} = \sum_i \omega_{i,t}\, \tau_{i,t}. \tag{56}$$

Acquisition intensity among acquirers:

$$\bar{\theta}_t = \frac{1}{N^a} \sum_{j \in \mathcal{A}} \theta_{j,t} \tag{57}$$

$$\bar{\theta}_t^s = \frac{\sum_{j \in \mathcal{A}} s^a_{j,t-1}\, \theta_{j,t}}{\sum_{j \in \mathcal{A}} s^a_{j,t-1}}. \tag{58}$$

Capacity–creating weight (links to the analytical model):

$$\Omega_t = 1 - S^a_t\, \bar{\theta}^s_t, \qquad S^a_t = \sum_{j \in \mathcal{A}} s^a_{j,t}. \tag{59}$$

5.2 Model simulation results

Table 2: Baseline Simulation Parameters (Heterogeneous Firms)

Block	Symbol / Code	Value	Meaning / Notes
Model size	N / num_firms	100	Total number of firms
	N^a / num_acquiring	10	Number of acquiring firms
	N^n / num_non_acquiring	90	Number of non-acquiring firms ($N^n = N - N^a$)
Horizon	T / T	200	Number of simulated periods
Technology & accounting	a / a	1.0	Labour productivity
	v / v	1.0	Capital–output ratio ($Y = K/v$)
	w / w	2.0	Wage level (nominal)
Demand/consumption	c_w / c	0.5	Propensity to consume out of wages
Investment (PK)	γ / gamma	0.1	Autonomous (animal spirits) term
	g_π / gi_pi	0.1	Sensitivity of investment to profit share
	g_u / gi_u	0.6	Sensitivity of investment to utilisation
Competition/markup	β_2 / beta2	0.9	Markup adjustment to market share changes
	ι_1 / iota1	0.03	Market share sensitivity to relative size
	ι_2 / iota2	−2	Market share sensitivity to relative price
Acquisitions	β_1 / beta1	2.0	Acquisition intensity response to profit-rate changes
	θ_2 / theta[2,]	0.01	Initial acquirer acquisition share of investment[a]
Initial conditions	K_1, K_2 / K[1], K[2]	200, 200	Initial total capital stock (two seeds)

[a] In the simulation, each acquirer's $\theta_{j,t}$ evolves endogenously via `theta[t,i] = min(theta[t-1,i] + beta1 * (r_a[t-1,i] - r_a[t-2,i]), 1)`. Reported value is the common initialisation at $t = 2$.

Figure 1 synthesizes the core mechanism of the model and shows how the simulation reproduces the analytical results. The economy begins in a profit-led regime with strong macroeconomic responses to profitability and it becomes progressively less responsive as it drifts toward a highly concentrated, acquisition-dominated structure. In the top-left panel, the capacity-creating weight of investment (Ω) declines from essentially one at the start to about two-thirds by the end of the run, while the profit-weighted analogue (Π^{capw}) falls more slowly. The observed trend—(Ω) dropping faster than (Π^{capw})—is consistent with the model "acquisition leakage" emphasized in the analytical model: as a rising share of expenditures is directed to buying existing assets rather than installing new capital, the part of investment that augments productive capacity shrinks even if profitability remains high. Because (Π^{capw}) embeds profit weights, rising mark-ups and profit shares cushion its fall; (Ω) shows the decline in capacity creation.

The top-right panel reports the elasticities of utilization and growth with respect to profits, ($du/d\pi$) and ($dg/d\pi$). Both start high and trend down as (θ) and (S^a) increase (third row, left), exactly as predicted by the analytical expressions. Around the point where non-acquirers vanish and the economy becomes an all-acquirer regime (the "concentration break"), the elasticities display a visible step: their levels drop and then continue on a lower plateau. This is the dynamic manifestation of the analytical result that the macro response to a profit push is scaled by the effective, capacity-creating component of investment. When (Ω) is large, profits translate strongly into new capital and demand (as in the usual Post-Kaleckian models). When (Ω) is eroded by acquisitions, the same profit push yields much less new capacity; the economy stays profit-led in sign, but with progressively weaker multipliers.

The second-row, left panel—utilization and growth—shows macroeconomic trajectory of the regime. Early in the run, both variables rise as profits stimulate investment and demand. As (Ω) declines, growth flattens and then settles at a lower trend, while utilization only dips temporarily around the concentration break and subsequently recovers modestly. The analytical model anticipates this divergence: when the economy is profit-led, a higher profit share raises deisred investment and, through that, aggregate demand—that pusshes output up; at the same time, rising acquisition share (higher θ and S^a) lowers the capacity-creating weight Ω (the share of investment that actually adds new capital). Thus, output rises faster than capital. Put differently, the economy moves into a "stagnant profit-led" stage: still profit-led in sign, but with reduced elasticities and lower steady-state growth.

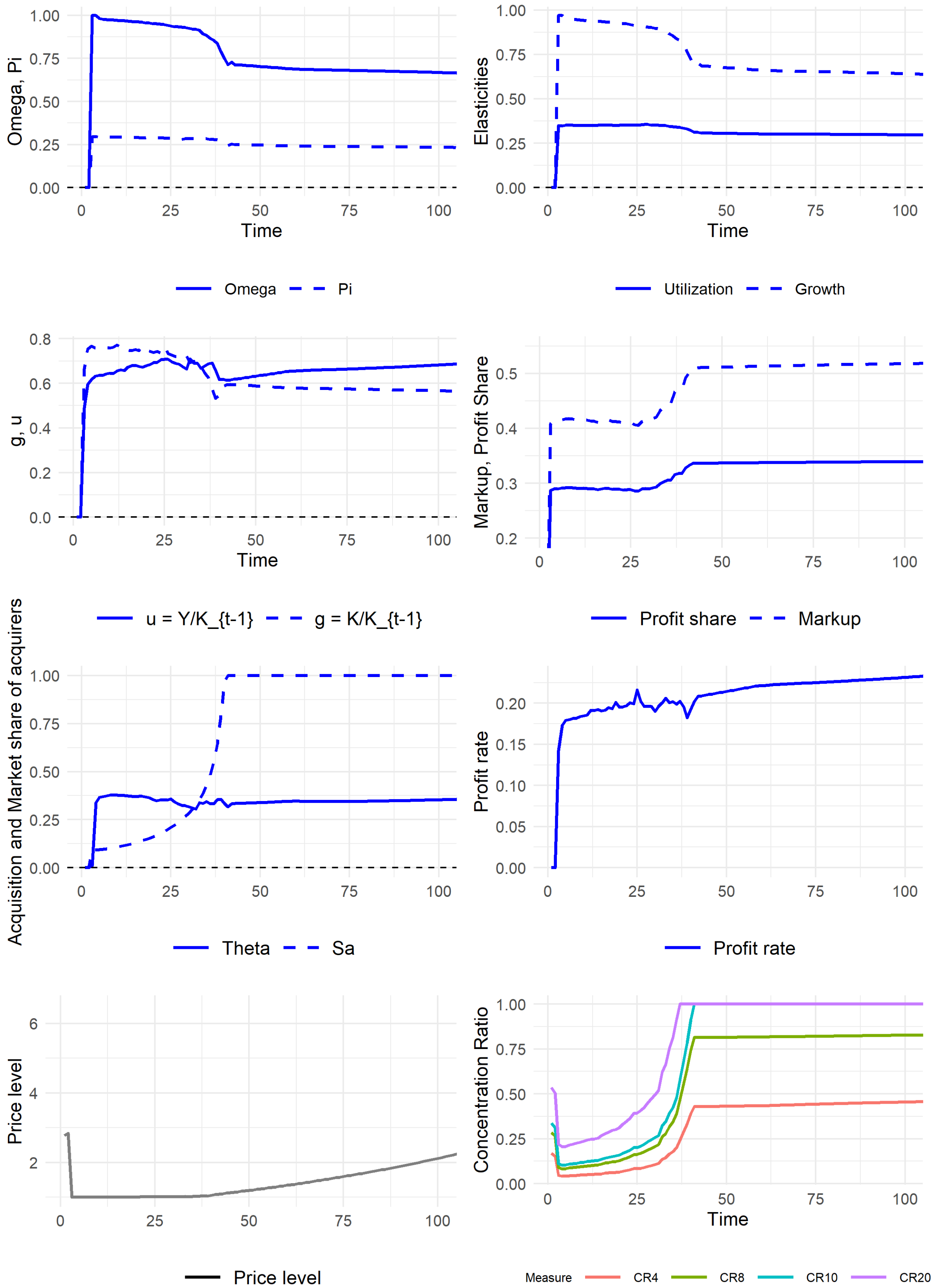
The second-row of Figure 1, right panel documents the structural force behind this drift: the mark-up (τ) and the aggregate profit share rise steadily. This is textbook concentration dynamics and is consistent with recent evidence on rising market power (e.g. De Loecker & Eeckhout; Autor et al.). In a distribution-led growth framework, however, higher profit shares depress wage-financed consumption, so the usual profit-led boost to investment must be strong enough to compensate. The model shows that it is not necessary the case in a profit-led economy—once acquisitions absorb a growing slice of outlays. The early strong profit-led phase (when (Ω) is near one) gives way to a regime in which higher mark-ups coexist with weaker profit-to-investment pass-through and lower trend growth. This is precisely the composition channel highlighted in the analytical part of the paper: what matters for macro outcomes is not only "how profitable" firms are, but how profits are deployed—toward new capacity or toward the purchase of existing assets.

The third-row, left panel confirms the proximate drivers: acquisition intensity (θ) rises from very low levels to roughly one-third of acquirers' outlays, while the acquirers' capital share (S^a) climbs to unity, eliminating non-acquirers. This structural transition lines up with the break in the elasticities and with the flattening of growth. The third-row, right panel shows the aggregate profit rate (r): it rises early, softens around the concentration break, and then recovers only slowly. This pattern again fits the analytical story. When (Ω) is high, a profit increase raises both utilization and growth, feeding back into profitability. When (Ω) is low, profits increasingly reflect price-cost margins rather than expanding volumes; higher mark-ups support the level of the profit rate but no longer carry the same dynamic force for accumulation.

Finally, the bottom-left panel reports the price level, which trends upward in tandem with the mark-up. This is consonant with post-Kaleckian pricing (mark-up over unit labour costs) and with the model's competitive structure: as acquirers' market shares expand, their pricing power rises (captured by the market-share-to-mark-up feedback), pushing up the aggregate price even as capacity creation decelerates. The joint behaviour of the price level and the profit share in Figure 1 thus provides the background for understanding why (Π^{capw}) falls less than (Ω): higher margins prop up the profit-weighted term even as the capacity-creating share of spending erodes.

In sum, Figure 1 illustrates a tight micro–macro linkage that confirms the analytical results. As acquisition intensity and concentration rise, the capacity-creating weight (Ω) declines, the elasticities ($du/d\pi$) and ($dg/d\pi$) fall, growth settles on a lower path, and utilization recovers only modestly. Mark-ups and the profit share increase throughout, but their macro bite diminishes because a growing fraction of "investment" no longer purchases new capital goods. The simulation therefore reconciles two stylized facts often observed since the 1980s in a profit-led economy—rising market power and weak capital formation—within a single post-Kaleckian framework: distribution still matters for demand and accumulation, but the composition of corporate expansion (new capacity versus acquisitions) determines whether profitability translates into growth or into a concentrated, stagnant form of profit-led dynamics.

Figure 1: Simulation Results



6 Conclusions

Bhaduri et al. (1990) model generates profit or wage-led demand and growth regimes, in which if the direction of distribution aligns with the system's regime, economic growth is spurred. This paper demonstrates that once incorporated how profits are deployed—as new capacity or towards acquisitions and its consequences for concentration—stagnationist dynamics can arise even if the changes in functional income distribution align with the system's regime. Such results are achieved keeping the investment's and saving's functions behavioural parameters constant. Moreover, the system's regime can switch from profit-led to wage-led, or vice-versa, while remaining highly stagnated. We show these results in a Bhaduri/Marglin model with acquirers and non-acquirers in two model cases: i) a full heterogeneity analytical model—where firms are assumed to have same investment behavioural parameters but different performance metrics—and ii) in a full-homogeneous corporate sector. As the share of acquisitions in total investment raises, a lower portion of profits and capital are translated into new creating-capacity investment. This trend pushes either regime into stagnation or switches it to the other regime without increasing equilibrium growth rates.

In the homogeneous case, acquisition intensity shows up as a single shrinkage of the capacity-creating weight of investment: it always depresses levels and systematically makes the economy more likely profit-led but weaker growth. In the heterogeneous case, rising acquisitions also changes who earns the marginal profit and how much of it translates into capacity creation. Those composition terms make the regime path-dependent and potentially reversible: profit-led can flip to wage-led under acquisition-driven concentration, while flips in the opposite direction are harder and typically require either lower leakage or a strong profitability advantage of acquirers.

The paper also provides a model simulation that illustrates the analytical model results. While simple, it contributes to the literature of small-scale AB macroeconomic models, in particular in its PK strand. The model shows how in a profit-led economy, growth and utilization elasticities fade as acquisitions and concentration intensifies, decoupling the macro profit share and the capacity-creating capital investment.

This leads to the following conclusions. First, in PK growth and distribution models, macroeconomic outcomes need not be driven solely by behavioural parameters and distributional shifts. Corporate choices—both about the form of investment and about market structure—shape how distributional changes translate into macro outcomes. Hence, exploring ways to integrate microeconomic decisions into macroeconomic models is especially important in today's highly stratified corporate sector. Second, changes in income distribution consistent with the system's demand- and growth-regime are not sufficient, by themselves, to deliver higher growth. Rather, in a profit- (or wage-) led economy, stagnation can coexist with a steadily rising (or falling) profit share.

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A Appendix: Model Specification and Estimation Results

To provide empirical support to the theoretical framework, we estimate OLS pooling and two-ways fixed effects panel regression models that capture the interaction between firm-level profitability, capacity utilization, and acquisition intensity in explaining investment dynamics. We use Compustat data for US publicly-listed firms from 1970, the year in which acquisition expenditures start being accounted for, to 2019. The baseline specification for the fixed-effect models is as follows:

$$g_{it} = \beta_0 + \beta_1 \pi_{it} + \beta_2 \theta_{it} + \beta_3 u_{it} + \beta_4 log(sales) + \beta_5 \log(\frac{ppent_{it}}{at_{it}}) + \beta_6(\pi_{it} \cdot \theta_{it}) + \beta_7(\theta_{it} \cdot u_{it}) + \mu_i + \lambda_t + \varepsilon_{it} \quad (60)$$

where g_{it} for firm i in year t is the investment rate of firm defined as $capex_{i,t}$ over past year productive capital $ppent_{i,t-1}$ (thus, it avoids correlation between the independent variables that use current time variable and the dependable variable that is deflated by past-year productive assets). π_{it} is the firm-level profit share, θ_{it} is the acquisition intensity defined as $capex_{i,t}$ over total investment defined as the sum of $capex_{i,t}$ adn acquisition expenditures $aqc_{i,t}$, u_{it} is capacity utilization, $sales_{it}$ is our size measured by sales and $\frac{ppent_{it}}{at_{it}}$ is the ratio of productive capital stock over total assets. Firm (μ_i) and year (λ_t) fixed effects are included. For robustness, I employ two firm-level profit share measures. The first is based on the markup, which accounts for the cost of goods sold (*cogs*), and the second on the gross margin, which includes both *cogs* and overhead costs (*xsga*), excluding interest payments. This dual approach addresses the limitation in Compustat data, which does not allow a clear separation between direct and overhead labour costs (Traina, 2018). All regressors are lagged one period with respect to the dependent variable and ratios are winsorized at the lower and upper 1% bounds.

While the empirical model estimates reduced-form effects of profit share and capacity utilization on firm-level investment, these coefficients should not be interpreted as direct estimates of the structural parameters g_π and g_u in the theoretical model. Rather, the econometric model provides evidence on the direction and heterogeneity of these effects—most notably, the finding that the influence of profit share and capacity utilization on investment diminishes with higher acquisition intensity. This pattern is consistent with the theoretical structure, where acquisition intensity dilutes the impact of profit and utilization on capital formation through the term $(1-\theta)$. The estimated interactions thus serve to empirically validate a key mechanism embedded in the structural model, while the parameters g_π and g_u are interpreted as behavioral constants across firms.

Table 1 presents the main estimation results. Across the four specifications (using alternative definitions of profit share), we find that the profit share and capacity utilization are positively associated with investment, as expected in Post-Kaleckian models. The coefficients on profit share are economically large and highly significant, indicating that internal profitability remains a primary driver of firm investment. Likewise, capacity utilization is consistently positive, affirming its role as a demand-side constraint.

The positive coefficient on acquisition intensity θ suggests that acquisition activity correlates with higher investment rates when considered alone, supporting the view that acquisitions function as a strategic form of growth. It is though less statistically significant than all other coefficients. Yet, the inclusion of interaction terms significantly qualifies this interpretation and its inclusion in the model. The coefficient on $\pi \cdot \theta$ is negative and highly significant, indicating that as firms devote a greater share of their investment to acquisitions, the marginal effect of the profit share on investment declines. A similar logic applies to the interaction between θ and u, where higher acquisition intensity dampens the sensitivity of investment to capacity utilization.

These results lend empirical support to the theoretical claim that acquisition activity disrupts the traditional link between profitability and productive capital formation. While acquisitions may appear growth-enhancing in the aggregate, they obscure the relationship between internal profitability and tangible investment, justifying the need to account for how investment is allocated.

Table 3: Pooling and Fixed Effects Capital Expenditure to Laggged Productive Assests Regression Results

	(1) *Pooling*	(2) *Pooling*	(3) *Twoways FE*	(4) *Twoways FE*
Profit Share ($\pi = \frac{markup}{1+markup}$)	0.711***		0.989***	
	(0.031)		(0.047)	
Profit Share ($\pi = \frac{margin}{1+margin}$)		0.759***		0.741***
		(0.021)		(0.051)
Acquisition Intensity (θ)	0.077***	0.048	0.129*	0.143*
	(0.024)	(0.031)	(0.032)	(0.025)
Capacity Utilization (u)	0.021***	0.023***	0.040***	0.040***
	(0.0003)	(0.0003)	(0.0005)	(0.0005)
Log Revenue ($\log$ revt)	-0.046***	-0.032***	-0.050***	-0.069***
	(0.002)	(0.002)	(0.006)	(0.006)
Log Capital ($\log$ ppent_at)	0.095***	0.163***	0.439***	0.433***
	(0.005)	(0.005)	(0.009)	(0.009)
$\pi \cdot \theta$	-0.293***	-0.086*	-0.238***	-0.553***
	(0.094)	(0.057)	(0.060)	(0.098)
$\theta \cdot u$	-0.006***	-0.006***	-0.005***	-0.005***
	(0.001)	(0.001)	(0.001)	(0.001)
Observations	121,258	121,258	121,258	121,258
Firms	10,604	10,604	10,604	10,604
Years	1-49	1-49	49	49
R^2	0.045	0.052	0.064	0.062
Adj. R^2	0.045	0.052	-0.027	-0.029
F-statistic	809.14	945.32	1074.65	1038.86

Notes: Columns (1)-(2) present pooling model results, columns (3)-(4) reproduce fixed effects estimates for comparison. Standard errors in parentheses are clustered at firm and year levels for FE models. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The capital variable differs between specifications: log(ppent_at) for pooling vs. log(at/ppent) for FE models.

Table 4: Two-Way Fixed Effects Regression Results by Firm Size Quartiles

	Q1 (Smallest)	Q2	Q3	Q4 (Largest)
Profit Share ($\pi = \frac{markup}{1+markup}$)	0.770***	0.675***	0.577***	0.354***
	(0.169)	(0.050)	(0.036)	(0.020)
Acquisition Intensity (θ)	0.137	0.097***	0.058***	0.058***
	(0.089)	(0.021)	(0.015)	(0.009)
Capacity Utilization (u)	0.064***	0.030***	0.020***	0.010***
	(0.001)	(0.0005)	(0.0004)	(0.0002)
Log Revenue ($\log \text{revt}$)	0.081***	0.133***	0.072***	-0.007***
	(0.027)	(0.009)	(0.006)	(0.002)
Log Capital Ratio ($\log \text{ppent/at}$)	0.870***	0.301***	0.172***	0.058***
	(0.030)	(0.009)	(0.007)	(0.004)
Interaction: $\pi \cdot \theta$	-0.530	-0.207**	-0.127*	-0.248***
	(0.348)	(0.095)	(0.071)	(0.045)
Interaction: $\theta \cdot u$	-0.005	-0.005***	-0.003***	-0.021***
	(0.002)	(0.001)	(0.0004)	(0.0003)
Observations	30,819	30,711	30,446	29,282
R^2	0.081	0.151	0.111	0.084
Adjusted R^2	-0.124	-0.030	-0.023	0.004
F-statistic	318.07	643.86	473.82	351.54

Notes: Dependent variable is the investment rate (g). All models include two-way fixed effects (firm and year). Standard errors in parentheses are robust. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

To further assess the heterogeneity in firm investment behavior, we estimate the fixed-effect model separately by firm size quartiles. The results (Table 2) confirm that the responsiveness of investment to profit share and capacity utilization declines markedly with firm size. The coefficient on profit share falls from 0.770 in the smallest quartile to just 0.354 in the largest. In parallel, the interaction terms show that acquisition intensity (θ) significantly moderates the effect of profitability and utilization — particularly among larger firms, where the interaction coefficients are larger in magnitude and more statistically significant. This pattern aligns with the theoretical expectation that larger firms have more diversified growth strategies, including acquisitions and financial engineering, which dilute the traditional investment channel.

Interestingly, acquisition intensity is only marginally significant in the smallest quartile but becomes consistently positive and significant across larger size groups. This confirms that larger firms rely more heavily on acquisitions as a mechanism of expansion. However, the interaction terms again reveal a tension: the negative coefficients on $\pi \cdot \theta$ and $u \cdot \theta$ grow stronger and more significant at the top of the distribution, indicating that among large firms, acquisitions increasingly substitute for rather than complement physical investment. The effect of profit share and utilization on investment is conditional on acquisition intensity: firms that allocate more investment to acquisitions are less responsive to increases in profitability.

While the models in table 1 and 2 show modest values for adjusted-$\mathbf{R^2}$ values, the high F-statistics in both the full-sample and size-specific regressions indicate that the models are jointly significant and the included variables explain a nontrivial share of the variation in firm-level investment. Adjusted $\mathbf{R^2}$ is positive for the largest firms (Q4) regressions. One potential reason for this pattern is the fact that larger firms engage significantly more heavily and systematically in acquisition activity, which is explicitly captured in the model via θ and its interactions. As such, the richer dynamics of investment allocation in these firms—where capital formation decisions involve both internal accumulation and external asset absorption—are better explained by a model that accounts for acquisition behaviour. This reinforces our central claim that investment behaviour is heterogeneous across firms, and modelling this heterogeneity is essential for understanding contemporary patterns of capital formation.

Taken together, these findings provide evidence that the average firm-level relationship between profitability and investment is not constant, but varies systematically with firm size and acquisition strategy. This heterogeneity is not a statistical nuisance but a structural feature of modern corporate investment behaviour.

These results validate the modelling choice to allow acquisition intensity θ to distort the traditional relationship between profit and investment. They also highlight the need for heterogeneous agent modelling frameworks to capture the differential behaviour of firms across the size distribution. Aggregate investment trends cannot be understood solely by looking at average profitability or utilization; instead, one must account for how firms allocate investment internally, and how these allocations evolve across macro cycles and firm characteristics.

Table 5: Marginal Effects of Profit Share and Capacity Utilization at Different Levels of Acquisition Intensity (θ)

Model	**Variable**	$\theta = 0$	$\theta = 0.5$	$\theta = 0.8$
(1) Pooling	Profit Share	0.711	0.565	0.477
	Capacity Utilization	0.021	0.018	0.016
(3) Two-Way FE	Profit Share	0.989	0.870	0.799
	Capacity Utilization	0.040	0.038	0.036
Q4 (Largest Firms)	Profit Share	0.354	0.230	0.156
	Capacity Utilization	0.010	–0.0005	–0.0068

Notes: Results are significant with with clustered standard errors.

B Appendix

Appendix A. Why Π^{capw} Falls Less than Ω When θ and S^a Rise

Purpose and relevance. This appendix shows why the investment-relevant profit term Π^{capw} declines less than the capacity-creating weight Ω as acquisition intensity (θ) and the acquirer capital share (S^a) increase. The growth equation depends on both objects: Ω scales the part of investment that becomes new capital, while Π^{capw} scales the part of profits that actually feeds capacity-creating investment. Understanding their different sensitivities clarifies why the "profit channel" weakens smoothly (rather than collapsing) as acquisitions rise or as acquirers gain market share.

A. Definitions (heterogeneous firms)

Let s_i^n and s_j^a denote capital shares of non-acquirers and acquirers, $\theta_j \in [0,1]$ acquirer-specific acquisition intensity, and $m_k \in (0,1)$ firm-level profit shares. Then

$$\Omega = \sum_{i\in n} s_i^n \;+\; \sum_{j\in a} s_j^a(1-\theta_j) \;=\; 1 \;-\; \underbrace{\sum_{j\in a} s_j^a\theta_j}_{\text{M\&A share of capital base}}, \tag{61}$$

$$\Pi^{\text{capw}} = \sum_{i\in n} s_i^n\, m_i^n \;+\; \sum_{j\in a} s_j^a(1-\theta_j)\, m_j^a \;=\; \underbrace{\sum_k s_k m_k}_{\text{cap.-weighted avg. profit share}} \;-\; \underbrace{\sum_{j\in a} s_j^a\theta_j\, m_j^a}_{\text{profit-weighted M\&A filter}}. \tag{62}$$

Interpretation: Ω is the share of the capital base whose investment demands new capital goods; Π^{capw} is the fraction of profits that feeds *capacity-creating* investment once M&A is netted out.

B. Sensitivity to acquisition intensity

Holding capital shares $\{s\}$ fixed, increase θ_j for some acquirer j:

$$\frac{\partial\Omega}{\partial\theta_j} = -\,s_j^a, \qquad \frac{\partial\Pi^{\text{capw}}}{\partial\theta_j} = -\,s_j^a\, m_j^a. \tag{63}$$

Hence

$$\left|\frac{\partial\Pi^{\text{capw}}}{\partial\theta_j}\right| = m_j^a \left|\frac{\partial\Omega}{\partial\theta_j}\right|, \qquad 0 < m_j^a < 1. \tag{64}$$

Result: For the *same* increase in θ_j, the magnitude of the decline in Π^{capw} is *strictly smaller* than the decline in Ω because it is attenuated by m_j^a.

C. Sensitivity to reallocation toward acquirers

Consider reallocating a small slice $\Delta s > 0$ of capital from a non-acquirer i to an acquirer j (hold θ fixed). Then

$$\Delta\Omega = -\,\theta_j\,\Delta s \;<\; 0 \quad \text{(any shift toward an acquirer with } \theta_j > 0 \text{ lowers } \Omega\text{)}, \tag{65}$$

$$\Delta\Pi^{\text{capw}} = \Big[m_j^a(1-\theta_j) - m_i^n\Big]\,\Delta s. \tag{66}$$

Implication: Π^{capw} falls *only if* $m_j^a(1-\theta_j) < m_i^n$. If the acquirer's profit share m_j^a is high relative to the non-acquirer's m_i^n, the gain in the base $\sum s_k m_k$ can partially offset the $(1-\theta_j)$ filter. Thus, even as Ω *always* drops when weight shifts to high-θ acquirers, Π^{capw} can decline *much less*, or even remain roughly flat.

D. Intuition

- **Raw vs. profit-weighted subtraction.** Ω subtracts the *entire* M&A slice $\sum s_j^a\theta_j$ one-for-one. By contrast, Π^{capw} subtracts the *profit-weighted* M&A slice $\sum s_j^a\theta_j m_j^a$, which is mechanically smaller since $m_j^a \in (0,1)$.

- **Composition offsets.** Moving capital from a low-margin seller (m_i^n small) to a high-margin acquirer (m_j^a large) can raise the cap.-weighted profit base $\sum s_k m_k$; the $(1-\theta_j)$ filter then only partially damps that gain. Hence Π^{capw} is "stickier" than Ω.
- **Bounded effects.** $\Omega \in [0,1]$ falls linearly with the M&A share. $\Pi^{\text{capw}} \in [0,\bar{m}]$ (where $\bar{m}$ is a cap.-weighted profit share without the filter); its decline per unit θ is bounded by m.

In the post-Kaleckian closure, equilibrium utilization and growth feature the structure

$$u^* \;\propto\; \frac{\Omega\,[\gamma + g_\pi\,\Pi^{\text{capw}}]}{B - g_u\,\Omega}, \qquad g^* \;=\; B\,u^*,$$

with $B = 1 - c_w(1-\pi)$. As θ or S^a rise:

1. Ω falls *directly*, weakening both the level and the slope ($\partial u^*/\partial\pi$, $\partial g^*/\partial\pi$)—the "leakage" channel.
2. Π^{capw} typically declines *less* than Ω (because of profit-weighting and composition), so the *profit fuel* behind investment erodes more slowly than the capacity-creating weight.

Net effect: the economy can remain profit-led in sign for a while, but the *strength* of the profit channel fades as Ω shrinks. This explains why in the simulations and in the analytics the marginal effect of π on growth attenuates steadily with acquisition intensity and rising acquirer dominance, even when $\partial g^*/\partial\pi > 0$.

C Appendix

Market-structure dynamics with acquisitions (homogeneous structure). Let $s_t^n \equiv K_t^n/K_t$ and $s_t^a \equiv K_t^a/K_t$, with $s_t^n + s_t^a = 1$. Write the (capacity-creating) investment rates

$$\widehat{g}_n \;\equiv\; \gamma + g_\pi \pi_t + g_u u_t, \qquad \widehat{g}_a \;\equiv\; \gamma + g_\pi \pi_t + g_u u_t,$$

and let $\theta_t \in [0,1]$ be the (common) acquisition intensity among acquirers. Aggregate *new capacity* growth is

$$g_t^* \;=\; \widehat{g}_n\,s_t^n \;+\; (1-\theta_t)\,\widehat{g}_a\,s_t^a,$$

because acquisitions reallocate existing capital and do not add to K_t.

The capital stock dynamics by group are

$$\dot{K}_t^n \;=\; \widehat{g}_n\,K_t^n \;-\; I_t^{a,\text{acq}}, \qquad \dot{K}_t^a \;=\; (1-\theta_t)\,\widehat{g}_a\,K_t^a \;+\; I_t^{a,\text{acq}},$$

where the acquisition flow sourced from non-acquirers equals the acquirers' acquisition spending:

$I_t^{a,\mathrm{acq}} = \theta_t\, \widehat{g}_a\, K_t^a$. Using $\dot{s}^g = (\dot{K}^g/K) - g_t^* s^g$ for $g \in \{n, a\}$, we obtain

$$\dot{s}_t^n = \frac{\widehat{g}_n K_t^n - \theta_t \widehat{g}_a K_t^a}{K_t} - g_t^* s_t^n = \widehat{g}_n s_t^n \; - \; \theta_t \widehat{g}_a s_t^a \; - \; g_t^* s_t^n, \tag{67}$$

$$\dot{s}_t^a = \frac{(1-\theta_t)\widehat{g}_a K_t^a + \theta_t \widehat{g}_a K_t^a}{K_t} - g_t^* s_t^a = \widehat{g}_a s_t^a \; - \; g_t^* s_t^a. \tag{68}$$

Equation (68) shows the acquisition transfer cancels inside the acquirer flow: $\dot{s}_t^a = (\widehat{g}_a - g_t^*) s_t^a$.

When do acquirer shares rise? From (68),

$$\dot{s}_t^a > 0 \quad \Longleftrightarrow \quad \widehat{g}_a \; > \; g_t^* \; = \; \widehat{g}_n s_t^n + (1-\theta_t)\widehat{g}_a s_t^a.$$

Rearranging,

$$\widehat{g}_a \left[1 - (1-\theta_t) s_t^a\right] \; > \; \widehat{g}_n \, s_t^n \quad \Longleftrightarrow \quad \widehat{g}_a \left(1 - s_t^a + \theta_t s_t^a\right) \; > \; \widehat{g}_n \, (1 - s_t^a).$$

A higher θ_t increases the left-hand side (by $\theta_t s_t^a$), making $\dot{s}_t^a > 0$ *easier* to satisfy: acquisitions tilt market structure toward acquirers.

Condition for non-acquirer shares to be non-decreasing. From (67) and $s_t^n = 1 - s_t^a$,

$$\dot{s}_t^n \; = \; s_t^a \Big[s_t^n \, \widehat{g}_n \; - \; \widehat{g}_a \big(s_t^n (1-\theta_t) + \theta_t \big) \Big].$$

Hence $\dot{s}_t^n \geq 0$ requires

$$\widehat{g}_n \; \geq \; \widehat{g}_a \left(1 + \theta_t \, \frac{1 - s_t^n}{s_t^n}\right).$$

This shows (i) the *threshold* rises in θ_t (acquisitions make it harder for non-acquirers to maintain share), and (ii) the threshold explodes as $s_t^n \downarrow 0$ (once non-acquirers are small, catching up is very hard).

Macro link. Because $g_t^* = \widehat{g}_n s_t^n + (1-\theta_t)\widehat{g}_a s_t^a$ and $\Omega_t = 1 - \theta_t s_t^a$, rising θ_t or s_t^a reduces the capacity-creating weight Ω_t, thereby depressing u^* and g^* and lowering the slopes $|du^*/d\pi_t|$, $|dg^*/d\pi_t|$. In the homogeneous, structure-fixed case this pushes thresholds toward profit-led *while* shrinking levels and sensitivities, i.e., a tendency toward a *stagnant profit-led* outcome. In heterogeneous settings with acquirer-only shocks and reallocation, the shock-weight/composition terms can bias the regime toward wage-led unless acquirers' effective profitability is sufficiently high.