

A Kaleckian Firm-Based Perspective on the Persistence of Oligopoly

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Abstract

Theories of monopoly capitalism integrate microeconomic and macroeconomic elements to account for the behaviour of firms. The modern corporation is the unit of analysis at the firm, industry, and macroeconomic levels. This changes the analysis in at least two fundamental ways. First, oligopoly is the dominant market structure. Second, perfect competition is absent in the analysis. This article builds on these features but offers a firm-level explanation for these effects. It proposes that they are the outcome of how firms impose stability in an instability-prone environment.

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1. Introduction

Theories of monopoly capitalism (Sawyer 1988) build on industrial organisation research, particularly focusing on structure-conduct-performance analysis and Kalecki's concept of monopoly power (Sawyer 2022). This approach examines how market concentration affects economic behaviour and outcomes. At its core, monopoly capitalism replaces the perfectly competitive sole proprietor firm with the modern giant corporation as a unit of analysis at the firm, industry and macroeconomic level. This changes the analysis in at least two fundamental ways. First, oligopoly is the dominant market structure. Second, perfect competition is not a feature of any explanation.

The role of pricing in the short run theory of income distribution is at the heart of firm-level analysis. Monopoly capitalism places lesser emphasis on the internal structure of the firm and its relationship to the micro-theory of distribution. As is demonstrated below, the factors external to the firm have been extensively explored. But the literature has inadequately recognised how distributional behaviours originate from internal firm-level characteristics and structures. The present article makes the follow-

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ing contribution: it argues that the firm's internal structure is related to its environment. Specifically, it posits a mutually reinforcing effect that instability pervades the environment of the firm, which the firm is exposed to and in part propagates. The internal characteristics of the firm can be viewed as a stabilising response. The firm must expend resources in order to impose some stability on its environment. These costs are identified and explained.

The approach outlined here extends monopoly capitalism analysis in two ways. First, with a few exceptions, it is generally only concerned with the internal structure of the firm and its relationship to market structure in a limited way. I argue that these features are intimately related to the consequence that the environment in which a firm operates necessarily alters the nature of the firm and, consequently, the firm's behaviour. Second, I draw on the industrial organisation literature but take a firm-level perspective on industry. The tendency for industrial concentration to increase arises, which is related to the transformation firms undergo in operating within oligopoly, making such a transition irrevocable.

This article is organised as follows: A summary of monopoly capitalism comes first (section 2). It is followed by a brief overview of Kalecki's distinctive microeconomics to give context to firms' nature and behaviour (section 3). The following part explores the relationship between the degree of monopoly, pricing, profits, and firms' investment and concentration (section 4). The final, substantive section offers a firm-level theory of the tendency to oligopoly and the tendency for concentration to increase (section 5).

2. Background

Monopoly capital describes a new form of capital, the modern giant corporation, that replaced sole proprietorship as the dominant form of organisation (Foster 2018). The link with capital markets forms the essence of monopoly capitalism – monopoly is not simply the outcome of product markets, but primarily a characteristic of capital markets (Toporowski 2016). A strand of monopoly capitalism views monopolisation, stagnation and financialisation as related (cf. Foster and Magdoff 2009; Hein and Van Treeck 2010; Pitelis 2022).

The growth of the scale of production results in structural oligopoly or monopoly. The defining characteristic of monopoly capitalism is that developed capitalist economies are dominated by firms operating in oligopolistic industries, which significantly reduces competition and rivalry between firms (Sawyer 1988). This tendency is particularly strong since unrestricted competition also tends towards market concentration (Hein 2023). Oligopolies safeguard profits by erecting barriers to entry. The recognition of the importance of monopoly and oligopoly replaces marginal productivity theory with the view that profitability and real wages are determined by firms' market power. To use Mittermaier's (2023) terminology, oligopoly, as a structural feature of the economy, is an *ex ante* fact. It is, ultimately, causal (O'Donnell 2023), and it explains variables such as the distribution of income, investment and employment (Sawyer 1985).

Monopoly capitalism theory argues that monopolisation leads to stagnation due to a deficiency of aggregate demand (Cowling 1995) or a slowing of the intensity of innovation (Kalecki 1954). On the one hand, oligopoly is less beneficial to investment and technical change than perfect competition is. That has to do with the dynamic that, as the degree of monopoly increases, rising excess capacity depresses investment by reducing the propensity to invest (Steindl 1952; Lambert 2020). The concentration of profits and internal financing within oligopolistic markets ultimately reduces the rate of capital accumulation (Steindl 1952). However, economies of scale and economies of scope actually benefit innovation and investment (Vasudevan 2022; Catalano 2022). While constituting a source of monopoly power (Christophers 2020), some departure from perfect competition is necessary for firms to produce and implement costly research and development, particularly in areas like patent protection and collective research initiatives.¹ Christophers (*ibid.*) argues that whatever the impact of intellectual property rights on innovation, these necessarily reinforce profits. Investment spending is primarily determined by factors such as capacity utilisation, profit levels, internal funding availability and technological opportunities, rather than by the interest rate (Sawyer 1988).

The tendency towards stagnation, driven by a rising degree of monopoly, is an inevitable outcome of the maturity of the monopoly capitalist system (Sawyer 2023). On the one hand, this includes an evolution towards transnationalism (Cowling 1982). Transnationalism is an extension of the multi-divisional corporation, which centralises strategic capital allocation decisions and decentralises operational production decisions (Cowling 1995). It is where the extension of firms' power takes place (Cowling 1982; Sawyer 1988). More recently Pagano (2014) has argued that the emergence of intellectual (legal) monopoly capitalism, a model of capitalism based on the ownership of knowledge, has become the dominant form of organisation of big business, resulting in the concentration of productive knowledge. In creating an enclosure of ideas through private ownership and closed markets, it has restricted investment opportunities for firms.

Intellectual property rights affect the firm's prospects and value since related skills and physical resources are unlikely to be developed and productive opportunities restricted. Slowing investment as a result of monopolisation has the same effect as in traditional theories of monopoly capitalism. Sources of intellectual monopoly include property rights and legally enforced proprietary control over standards, technologies and brands, but also the natural monopoly arising from positive network externalities and increasing returns to scale of intangibles, differential rent, and innovation advantages (Durand and Milberg 2020; Vasudevan 2022). Alternatively, innovations provide monopoly power by generating a particular form of rent (Christophers 2020; Rikap 2019).

Cowling (1982) argues that if surplus is not spent or "monetised" (Toporowski 2016), it will not be realised, though none of the possible adjustments are automatic. There is a tendency for the surplus to increase (Baran and Sweezy 1966), and with it increasingly more unproductive means of production and more wasteful means of absorption of the surplus ensue (Lambert and Kwon 2015; Lambert 2020).

¹ I am indebted to a referee for making me aware of this point.

Despite the separation between ownership and control (Baran and Sweezy 1966), the firm's primary motivation remains profit maximisation, as top management ultimately advances the objectives of large capital interests (Cowling 1982). Profit maximisation strategies are, however, not precise (Kalecki 1954; Sawyer 1985). Large firms finance their reproduction and expansion from retained earnings, which modulates the role of financial capital that exists in earlier theories of monopoly capital. The degree of monopoly suggests that monopoly and oligopoly determine the share of profits in national income, and that the existence of profits is predicated on the existence of monopoly (Kalecki 1954; Sawyer 1988). Rising concentration causes profit margins to increase, whereas the profit share of national income may also increase as a result of aggregate demand. More recently, it has been remarked that the financialisation of the firm has caused a shift towards the pursuit of shareholder value, which has resulted in higher dividend payouts, in the process depressing internal funds for investment (Stockhammer 2005–6; Dallery 2009). Ultimately, however, it reaffirms the profit imperative of the firm (Sawyer 2022).

Excess capacity and stagnation are related themes that run through the monopoly capital literature. In macroeconomic terms, pricing and investment decisions determine the level of economic activity. Since these are taken by firms in pursuit of profits, there is no reason they should result in full employment or full capacity utilisation. The real wage is set in product markets rather than labour markets, although Kalecki (1971b) sees trade unions as modifying the degree of monopoly and so affecting the real wage. Excess capacity may be both planned or unplanned, but planned excess capacity arises from economies of scale and growth (Steindl 1952); it is held as a deterrent to entry (Cowling 1982 following Spence 1977); and it is explained as a reserve held in anticipation of future events, such as uncertainty about the future pattern of demand (Steindl 1952). The tendency towards the equalisation of the profit rate does not occur given substantial barriers to entry, with the average profit rate influenced by the interaction of the degree of monopoly and of capital intensity (Sawyer 1988).

In line with Steindl's argument about the existence of small firms, Lambert (2019) finds a decline in entrepreneurship associated with the workings of a monopoly capital system. Lambert (2020 citing Steindl 1952; Kalecki 1954; Baran and Sweezy 1966; Foster 2014) reiterates the view that increased innovation raises profit margins, but the simultaneous increase in productivity is offset by rising excess capacity to avoid a glut in new products and services, which would lead to disruptive price competition and lower profits. In short, there are no factors causing a reversion in oligopoly once it obtains.

3. A Brief Overview of Micro-Distribution Theory

The present article extends the final version of Kalecki's microanalysis (Kalecki 1943; 1954; 1971a; 1971b), which is understood as micro-distribution theory (cf. Feiwel 1975; Cowling 1982; Sawyer 1985; Kriesler 1987; Chiloso 1989).² In standard theory, distribution is one aspect of the determination of relative prices. In contrast, Kalecki's

² Three versions of Kalecki's micro-distribution theory are identified (Kriesler 1987), although Osiatyński (1992) argues that there are four.

micro-distribution theory relates to the determination of profit and wage shares of national income, which in turn explains macroeconomic variables. There are essentially two theories (Feiwel 1975). First, the short-run theory of distribution is related to the degree of monopoly. Second, there is the old adage that “labour spends its earnings and firms earn what they spend.” From the second arises that the profit rate on capital is given by the investment rate and the propensity for firms to use profits to save.

There must be some form of imperfect competition for excess capacity to exist, even in the long run (Kalecki 1971a). Kaleckians begin the analysis of the firm from the observation that oligopoly – not perfect competition – is widespread in the economy (Kalecki 1954; Sawyer 1985). There is a tendency for industrial concentration to arise in the long run (Steindl 1952; Cowling 1982; Sawyer 1994). Consequently, there is a long-run tendency towards stagnation (Kalecki 1954; Steindl 1952).

The analysis of industry begins from the necessary premise of imperfect competition and oligopoly, particularly in markets for reproducible goods. This means that excess capacity is typical, and so the actual supply can readily respond to an increase in demand. In turn, average prime, variable, or marginal costs are constant and independent of the degree of capacity utilisation. The markup of price over costs is determined by the degree of monopoly. The degree of monopoly is a “shorthand expression for a variety of oligopolistic and monopolistic factors (such as collusion and sales promotion)” (Sawyer 1985, 20). It is related to the firm’s behaviour and its pricing policy as well as price-setting at industry level.

The firm sets price as a mark-up, a gross margin, on average prime costs to cover overheads and achieve given profit, taking into consideration the prices of rival firms. “The crucial proposition is that the mark-up depends on the process of industrial concentration, on the vigour and weakness in competition, on market imperfections, on the industrial setting, on the morphology of markets, on the degree of freedom and constraints in price-setting, and on income distribution,” notes Feiwel (1975, 96). The various elements that affect market concentration create a pattern of predictable firm behaviour.

Reynolds (1983) suggests that Kalecki’s theory of costs and prices (1943; 1954; 1971a) contains the behavioural hypothesis that pricing theory is based on. It is that the firm takes its average prime costs and the price of rival firms into account when determining its own price. Reynolds describes mark-up pricing as a “simplistic behavioural relationship” (1994, 307) rooted in a behaviourist perspective that takes into account the availability of information and the cost of its acquisition and processing.

The degree of monopoly is, in turn, instrumental to the determination of profit and wage shares of national income, which also has a bearing on the tendency for productive resources to be underutilised as firms’ relative share of income increases. The degree of monopoly shows profits as arising from monopoly power, with higher profits accruing to the firms with more monopoly power. It affects both the distribution of income between profits and wages, but also the distribution of income amongst firms, with profits shifting to larger firms at the expense of smaller ones (cf. Sawyer 1985; Dixon and Toporowski 2013).

The propensity of the degree of monopoly to increase is due to these underlying factors, opposed by countervailing pressure from organised labour. There is a strong tendency towards rising industrial concentration as the absolute and relative size of firms, reinforced by mergers and acquisitions, increases (Meagher 2020; Sawyer 2022). It is accompanied by an increasing propensity for firms to collude (Sawyer 1985), leading to higher market power and higher profit margins for firms. Ultimately, monopoly capitalism is associated with secular stagnation as the rising degree of monopoly resulting in higher gross profits and a rising share of profit in national income depresses the propensities for investment and innovation (Kalecki 1954; Steindl 1952; Sawyer 2022). For example, Lambert (2020) finds that research and development simply strengthens monopolisation, and Lambert (2019) argues that monopoly capitalism strangles entrepreneurship (cf. Catalano 2022).

While developed for the manufacturing sector, the analysis is equally relevant to services, including, most recently, information technology, where “technoscientific rents” perform the same function and reinforce capital concentration driven by concentration in intangible assets (cf. Rikap 2021; Bianchi and Labory 2022). Information rents are created by scale economies and network externalities in the production of intangible assets (Durand and Milberg 2020). Durand and Gueuder (2018) report more recent effects of monopolisation on firms’ investment due, in part, to a decrease in the funds available to fund investment as non-financial corporations increase financial payments; and when competition decreases firms are less motivated to make new investments.

The corporation is the initial unit of analysis but at the industry and macroeconomic levels, the interactions between firms and the relationship with income distribution are emphasised. At the level of the firm, however, the degree of monopoly approach suggests indeterminacy in the mark-up, which the extensions to pricing theory discussed below address. Indeterminacy in any theory of price formation under imperfect competition arises from price-makers’ ability to influence the relationship between prices and costs in the process of determining prices, which has implications for profit shares and real wages (Arestis 1992). Further, Feiwel (1975) explains the limitations in Kalecki’s approach to distribution as lacking a comprehensive theory of market behaviour, as it does not satisfactorily deal with the firm’s investment decision, both of which are the subject of the following extensions.

4. The Degree of Monopoly, Pricing, Profits, and Investment

Kalecki’s degree of monopoly approach is one of many theories of the firm, ranging from monopoly, oligopoly, managerial and behavioural theories. In effect, all theories bar perfect competition in which firms determine prices relative to costs in pursuit of their objectives (Sawyer 1985). It is a theory of price determination (and of the distribution of income) within theories that view the firm as a price maker (Sawyer 1985) and a quantity taker (Hein 2023). Scarcity and time constraints are pre-requisites for marginalist prices; these are absent from post-Keynesian analysis in general (Lavoie 1992), with the Kaleckian approach constituting a surplus approach (Halevi and Kriesler 1991).

Kaleckians reject the notion that prices contain the requisite information for situational determinism or single exit outcomes. Prices do not clear markets, nor is that the intention (Lavoie 1992). Prices are administered by the firm to the market (Lee 1998; 2018); they are, thus, determined by the firm, not by the market (Lavoie 2014). Prices are long-term strategic prices (Shapiro and Sawyer 2003). A key characteristic is that firms operate in at least one market of the oligopolistic type (Lavoie 2014; 2016). The process through which firms determine prices reflects their strategic objectives (Dunn 2008), and the allocative function of prices is only a residual by-product of the other roles prices play (Dunn 2008).

Kalecki (1954; 1971a) distinguishes between two pricing mechanisms. First, demand-determined prices operate in markets characterised by inelastic supply, where increases in demand drives up prices – a phenomenon often accompanied by additional speculative buying. Second, cost-determined prices apply to all other industries, where production costs primarily drive pricing decisions. Cost-determined prices are inflexible in the face of short-run fluctuations in demand, since firms may have no reason to change prices when demand changes. Prices only change when costs or the degree of monopoly change (Kalecki 1954; 1971a; Coutts and Norman 2013), which is a statement about industrial structure and cost conditions. The distribution of income may change when import prices change as profits are earned in the mark-up of price over costs, including imported inputs. Through the “paradox of costs,” higher real wages lead to higher profit rates (Lavoie 2022; Hein 2017). Firms set prices in pursuit of their own objectives. These objectives are profit (in the Kaleckian tradition) or growth (in the post-Keynesian tradition).

Profitability and expansion are inseparable (Lavoie 2014), as the real and the financial cannot be dichotomised (Lavoie 2022). Profit based pricing refers to “loose” or “imprecise” profit maximisation (Kalecki 1954) where firms set profits and generate retained earnings to fund investment plans (Sawyer 1995a). Investment-based pricing refers to growth maximisation (Eichner 1973; 1976) where firms set a growth rate and then a target rate of return price to converge on the desired growth rate. These are sometimes treated as compatible and only constituting a difference in emphasis (cf. Shapiro and Sawyer 2003; Shapiro 2011; 2012; Lavoie 2014). There are, however, substantive differences (Sawyer 1992).

The key similarity between the growth-maximising and profit-maximising strains of Kaleckian pricing consists of the emphasis on financing investment. In this sense, they are different ways of expressing the long run objectives of the firm. Firms prefer internal sources of funding for investment because these are cheaper than borrowing, and they do not risk all capital assets such as borrowing would. Investment is a key determinant of profit, with low investment corresponding to low profit. Firms operate with excess capacity, even in the long run (where output and capacity both grow, but not necessarily at a comparable rate).

Firms deliberately hold planned excess capacity and so operate at constant short run costs for several theoretical, practical, strategic and technical reasons (Lavoie 1992). These rationales include the indivisibilities of large-scale production; the need to accommodate unforeseen demand fluctuations and uncertainty regarding future demand growth and composition (Steindl 1952; Lavoie 1992); the strategic value of deterring

potential market entrants (Cowling 1982; Sawyer 1985; Lavoie 1992); the documented positive relationship between excess capacity and profit rates (Skott 1989 cited in Sawyer 1995b); and various technological imperatives related to the structure of costs and production processes (Lavoie 1992; Toporowski 2005).

Critically, firms operate with excess capacity including in the long run in response to an inherently uncertain future (Steindl 1952). Technologically, non-convexities arising from economies of scale are an important feature of the scale at which firms operate in the Kalecki-Steindl approach. Steindl (1945) goes further and argues that firms hold reserve economies of scale. Further, there is a tendency for capital intensity to increase over time (Steindl 1952; Kalecki 1941, 1954). Shareable overheads are also important. Shared overheads between different plants, stages of production and production lines brings technical efficiency since those separable activities need to be coordinated at the point of interface. Excess capacity functions as “anti-bottlenecks” at the common points of contact (cf. Leijonhufvud 1986 cited in Langlois 2002; Lee 2018). From this arises overt predation in competition since firms can redeploy excess capacity to gain market share (Reynolds 1987).

Excess capacity, however, is a double-edged sword since it can also be unplanned (Steindl 1952; 1990). Imperfect competition confers monopoly profits, but excess capacity depresses investment (Baran and Sweezy 1966; Steindl 1952; Cowling 1995), both by reducing the incentive to invest given that the decision to invest is governed by current profits, as well as the willingness to use retained profits for investment (Toporowski 2003). Unplanned excess capacity is unavoidable and is consistent with the limits of the predictability of the market, but it confers firms with the ability to operate for protracted periods without maximising profits. Firms operate with discretion over it and the limit imposed by the reaction of other firms.

4.1 Growth Maximising

Growth-maximising and profit-maximising share the common feature that firms’ pricing power is necessary for their long term survival, since it allows firms to extract the profits required to fund investment (Shapiro and Sawyer 2003). Firms set prices with the aim of recouping their long-term costs (Shapiro and Sawyer 2003), and they do not merely aim to survive but they intend to dominate other firms and their environment. Price-setting and the management of sales are necessary means to those ends (Harcourt 2006). Profitability and expansion are closely related, making it difficult in practice to separate long-run profit maximisation from long-run growth maximisation (Lavoie 2014). Analytically, however, it is not simply the objective function of the firm that requires specification; it is also necessary to specify the rules by which the firm fulfils its aims. At this point, the two pricing strains diverge.

The causal relationship between savings (notably represented by a firm’s propensity to retain profits for reinvestment) and investment decisions is reversed when comparing these two theoretical accounts (cf. Sawyer 1994). In any given time horizon, reflecting underlying differences in the behaviour of the firm, the price that maximises growth will differ from that which maximises profits (cf. Lavoie 1992; 2014). Price-setting is based on different measures of costs, different costing and pricing proce-

dures, and a different role of excess capacity (cf. Lee 2013a). Growth maximisation (Eichner 1973, 1976; Harcourt and Kenyon 1976; Wood 1975) rejects the validity of profit maximisation and considers its retention a “drawback” (Reynolds 1994, 307), which is addressed by providing an analytical framework in which firms’ pricing and investment decisions are determined simultaneously. Greater emphasis is placed on the role of the firm and financing in determining the mark-up, which establishes a relationship between investment, pricing and mark-up (Lee 1998). It introduces a long-run element to pricing focused on profit maximisation.

The conditions that satisfy long-run growth are identical to those that satisfy long-run profits, since pricing and investment decisions are necessarily set to accommodate each other. The pricing decision links the price level to the industry’s investment programme by altering the profit margin (the corporate levy) to alter inter-temporal revenue flows.³ The firm can alter the savings ratio by changing prices. Firms’ discretion over prices is restrained by long run factors, namely a substitution effect, an entry factor, and state intervention (which effectively determines an upper limit on the industry price in the same way that the entry factor does). Together, these determine the firm’s supply curve for internally generated funds. The supply curve for external funds is simply a function of the permanent interest rate (the lowest levels of the interest rate over successive business cycles).

The demand for additional funds depends on the marginal efficiency of investment (as distinct from that of capital). The savings ratio of the firm may be constrained by that of the industry, but there are no limits for the investment rate to converge on the industry average. A change in industry price is simply the difference between the (total) supply cost and demand for additional investment funds, reflecting a change in the marginal efficiency of investment for all firms, the implicit interest rate charge on internal funds, or the permanent cost of external funds (Eichner 1976).

The firm produces using a single best practice in which a plant is only in operation if it is producing at full efficiency. Given then that the price leader is the most technically efficient in the class and acts on behalf of the industry, the cost curves of the lowest cost producer represent industry supply. Price differentials stabilise relative market shares provided that no single firm can unilaterally change the price level or the differential between its own price and the prices of other firms. The necessary (*ex ante*) corporate levy does not change when output changes, since it is calculated for a standard operating ratio at a given engineer-rated capacity utilisation rate. Any discrepancy with the realised (*ex post*) corporate levy will be resolved by adjusting prices in the next planning period. As such, the pricing decision is “a collective act” and “an industry-wide consensus” (Eichner 1976, 41, 42). It allows firms to pursue joint profit maximisation by deliberately suppressing price competition.

There is equivalence between the different variants of growth maximisation (Lavoie 2014). Wood (1975) characterises firms as aiming to maximise growth (of sales revenue) subject to growth in the demand for its output, growth in its capacity, and the availability of finance. These constraints are captured in a finance frontier and an op-

³ The returns from prior investment are reflected in the firm’s demand curve for additional investment funds, and the decline in sales over time from increasing price is reflected in the supply curve for the same additional investment funds.

portunity frontier. Each opportunity set of a firm consists in a combination of pricing, investment and sales policies which give rise to a unique bundle comprising an average profit margin, a given growth rate of sales revenue, and a specific level of planned investment expenditure. Investment expenditure is the determinant of growth, since it increases capacity and lowers costs as the additions to capital stock incorporate the best-practice techniques that become available (Harcourt 2006). The crucial parameter in the finance constraint is the retention ratio, which depends on the interest rate and is not within the control of the firm. Lavoie (1992) suggests that this is unsatisfactory, since it does not meaningfully explain the profit rate.

In fact, he (*ibid.*) modifies the finance frontier to reflect the relationship that the maximum that a firm can borrow is a multiple of its retained earnings (Kalecki 1937), and that firms effectively borrow from both share issues and bonds or loans (citing Sylos Labini 1971; Marris 1964). The downward-sloping and concave opportunity frontier is reformulated to depend on managerial capacity (Penrose 1959; Marris 1964). The resultant expansion frontier explains the maximum possible growth rate, at a point along which the relationship between the profit rate and the growth rate is negative, as being at the intersection of the finance frontier and the expansion curve. This is greater than the growth rate consistent with profit maximisation, found at the maximum point of the U-shaped expansion frontier. Profit-maximising firms avoid low return investments, consequently operating below their maximum potential growth rate despite possessing access to substantial internal reserves and diverse external financing alternatives.

Harcourt and Kenyon (1976) replace the marginal efficiency of investment schedule in Eichner's analysis. The size of additional capacity, the type of investment that needs to be undertaken and how to finance investment are included in the determination of the mark-up, thereby endogenising the demand for investment so that the resultant mark-up reflects the characteristics of the investment decisions that firms make. Firms set prices so as to extract as much net profit as they require to finance planned investment, given the chosen retention ratio and gearing ratio.

Growth maximisation suggests a determinism that does not exist. It maintains that there is a clear mechanism by which equilibrium between savings and investment holds at the level of the firm (cf. Harcourt 2006). The objectivity of pricing that arises from the simultaneous determination of prices and investment is "illusory" (Sawyer 1995a, 152), since pricing decisions are based on a diversity of expectations relating to quantities, prices, and growth prospects. The existence of equilibrium at the level of the firm implies that at least short-run expectations of price and output, and even the target capacity utilisation rate, are fulfilled (Sawyer 1995b). An emphasis on investment and growth, which are long-run in nature, places radical uncertainty at the heart of these accounts. However, reading radical uncertainty exclusively as a property of long-run decisions and the long run is not without analytical problems. There is limited empirical evidence that firms routinely avoid external financing sources. Therefore, the theory that firms adjust their profit margins primarily to generate sufficient internal capital for planned investment activities lacks substantial empirical validation. Managerialism and its related view of the firm are not a widespread phenomenon (Hodgson 2015).

The price system expressed in the theory of income distribution is related to a specific way of thinking about the firm. Kaleckians, as with other post-Keynesians, emphasise the understanding of firms in the context of their role and general significance for the economy and society (Sawyer 1989). Significantly, the firm is embedded in a fundamentally stable environment. Ubiquitous stability in the midst of systemic instability requires explanation. Firms restrict price competition to stabilise the environment (cf. Lee 2018). Power is deployed towards that end (cf. Lavoie 1992; 2014; Dunn 2011). Stability can be obtained by firms establishing reciprocal relationships. Firms then can influence the demand for their products, their cost structure and their interaction with other firms; and more directly control the magnitude of the profit mark-up. However, the conceptual problem is that such an expansive view of power implies that power is not circumscribed.

4.2 Profit Maximisation

Monopoly capitalism refers to the profit-maximising strain of Kaleckian pricing. The profit maximisation framework rejects that savings and investment are equalised at firm-level. Instead, it formulates a two-way relationship between profits and investment (Steindl 1952; Sawyer 1995a). On the one hand, a macroeconomic relationship is derived from the equality between savings and investment in a closed economy with no government sector, in which savings depend on profits. On the other hand, a microeconomic relationship exists at firm-level where actual and expected profitability partly determine investment decisions. At industry level, profit margins are determined by the degree of monopoly, which is in turn determined by industrial concentration, barriers to entry, etc. At the level of the firm, profit margins are determined by the profit mark-up (Sawyer 2022). Firms gain as much profit as possible and then allocate these to investment based on investment decisions that are governed by actual and prospective profits and capacity utilisation. At the level of the firm, then, actual profits are only a single determinant of investment decisions. As such, there is no process by which savings and investment automatically equalise at the level of the firm.

Within monopoly capitalism theory, firms are conceptualised as profit-seeking entities operating under conditions of radical uncertainty. This fundamental uncertainty renders precise optimisation practically unattainable (Hein 2023), compelling theorists to adopt various modified frameworks of profit maximisation rather than strict neoclassical formulations (cf. Sawyer 2022). For example, Baran and Sweezy (1966) and Cowling (1982) refer to surplus as being maximised. Profit maximisation is imprecise. Given “the uncertainties faced in the process of price fixing it will not be assumed that the firm attempts to maximise its profits in any precise sort of manner” (Kalecki 1954, 210). Firms cannot achieve perfect profit maximisation for two reasons. First, marginal costs cannot be precisely known because they represent the difference between output levels, only one of which can be verified at any time (Sawyer 1995a). Second, radical uncertainty makes the precise calculations required for standard profit maximisation theory impossible (Kalecki 1971a). Instead, firms follow different practical rules to pursue profits given these inherent limitations.

Firms set price as a mark-up over costs where the profit mark-up is set so as to maximise short-run profits (the short-run objective). The meaning of the short- and long-run requires qualification and has important consequences. The long run is not independent of the short runs that comprise it (Kalecki 1971a). Long-run does not connote any state to which the system tends and is determined by whatever short-run conditions prevail. Sawyer (1995b) views the long run as the end of a process, meaning that decisions made in the short run or decisions about the short run have implications which extend into the long run.

The analytical distinction in Kalecki's approach between pricing and investment decisions results in pricing decisions only having an indirect effect on investment in that the profits and (changes in) output that result from pricing strongly influence investment (Sawyer 1995b). Equivalently, investment decisions are primarily based on the volume of internal accumulation of retained earnings from profits (Steindl 1952), maintaining the *a priori* importance of (high volumes of) profit, which is not automatic (Baran and Sweezy 1966; Cowling 1982; Asimakopulos 1975).

The weaker the price competition is, the more freedom firms have to set prices in excess of costs (Robinson 1977). It shifts the emphasis to the formation of profit margins meaning understanding the firm's motivation and behaviour from the perspective of *ex ante* decisions as opposed to *ex post* results. Firm behaviour, including pricing, is both evolutionary and ecological (Fontana and Sawyer 2013; 2016; Sawyer 2020). Firms agree to safeguard profits, and so they only change prices in response to changes in prime costs (Kalecki 1971a), which Sawyer (1995b) interprets as the relationships between firms only changing if they result in (collectively) higher price-cost margins. The size of profit margins is, however, limited on the one hand by the assumption of demand facing the individual firm as relatively elastic; and on the other hand by attracting entry, both of which suggest that the firm's short-run objectives would compromise their long-run objectives (Sawyer 1995b).

There are, in effect, two separate objections to retaining short-period profit maximisation, towards the short period approach and towards profit maximisation itself. It has been criticised for not incorporating radical uncertainty. It is spurious, since uncertainty is applied to the holding of excess capacity (Steindl 1952; Dixon 1986; Lavoie 1992; Sawyer 1995a; 1995b). The evolutionary nature of pricing casts doubt over such a claim. Any single period of time is a "selection from explicit history" (Courtts and Norman 2013, 449). This perspective of the short period is at a minimum consistent with a moving equilibrium (Toporowski 2013), although none is likely to exist (Kalecki 1934 cited in Toporowski 2013). The long run, in turn, is rather a series of constantly changing variables, constituting a "cumulative Wicksellian process" (Kalecki 1936 cited in Toporowski 2013, 148).

Lee (1998) sees loose profit maximisation as lacking an explanation of the process by which firms arrive at the mark-up used in price-setting, since the determinants of the mark-up remain located outside the firm in its environment and institutional arrangements. As such, profit maximisation is theoretically unnecessary and irrelevant to understand firms (Lee 2013a). It also lacks empirical validation (Lee 2003; 2013b). Shapiro and Sawyer (2003) suggest that the mark-up is neither given with the properties of the product nor is it determined by the conventions of the market. Rather, the

mark-up changes with the requirements and opportunities of the firm, and so the level of the mark-up reflects the firm's proximate objectives (Shapiro and Sawyer 2003). Excess capacity then means that firms have a degree of flexibility in how they meet their objectives, immediate or otherwise.

An implication of Sawyer's (1995b) short-run model is that the capacity utilisation rate is endogenous based on how profitability is conceptualised and measured. The firm's growth is governed by several interconnected determinants. First, growth is predominantly driven by the firm's investment intensity. This propensity to invest is systematically influenced by four critical factors: accumulated retained earnings, prevailing profit rates, existing debt obligations, and current capacity utilisation levels. Additionally, capacity utilisation itself depends on the relationship between profit margins and investment levels. This establishes a feedback mechanism wherein firm-specific profit margins become fundamental, with adjustments manifesting predominantly through changes in capacity utilisation relative to investment decisions. Firms adjust the capacity utilisation rate, among other variables, in order to balance prices with the requirements of the system, specifically financing requisites. An endogenous capacity utilisation rate allows firms to maintain flexibility.

The degree of monopoly encompasses technical factors (for example increasing returns to scale), market factors (market imperfection and oligopoly) and financial factors (borrowing costs) in explaining the performance of the firm. So, minimum efficient scale (the optimal long run scale of production in standard analysis) is not just technologically determined. There is also a minimum capital threshold to clear for firms to access increasing returns to scale (cf. Kalecki 1937; Steindl 1952). So unlike standard theory, minimum efficient scale is reached in the firm becoming oligopolistic within an oligopolistic market structure (cf. Steindl 1952).

It is necessary to understand the determination of profit, that is, the source of profit, and the process of competition that augments those profits or destroys them in order to understand prices in the profit-maximising strain. Mark-up pricing stabilises profit margins when firms are imperfectly competitive. The mark-up is for profit in the profit-maximising strain. It is not the mark-up and, consequently, pricing that explains profit margins. Causality runs in the opposite direction. It means that firms use prices to allocate and regulate their income.

Profit maximisation inevitably retains the equality of marginal cost and marginal revenue in its formal expression suggesting that the process of price formation is in a sense subjective, which sits uneasily with the post-Keynesian approach in general (cf. Sawyer 1995b). Firms use pricing to regulate income. Beyond the determination of the profit share in income, pricing, in turn, performs several distributive functions relating to income. Pricing distributes income amongst firms (Kalecki 1954; Cowling 1982; Dixon and Toporowski 2013). Pricing plays a role in the distribution of borrowing between firms (Kalecki, 1937). The conversion of income from past and present expenditure depends on pricing (Steindl 1952; Baran and Sweezy 1966; Cowling 1982). Pricing distributes firms' income streams in time (Kalecki 1937; Steindl 1952). Pricing then plays a key stabilising role within the firm as well as in its environment.

In contrast to the stability assumed in growth maximisation pricing theories, firms actually operate in an environment pervaded by instability and uncertainty. The distributional role that prices play is a reflection of the behaviour when firms operate under conditions of radical uncertainty (cf. Dunn 2008). Large firms do not passively accept uncertainty; they act to mitigate it (Dunn 2011). It reflects that firms operate within a fundamentally unstable environment (Toporowski 2013; Lavoie 2022) and devise means to stabilise that environment (Lee 2018). As Shackle notes: “Stability is a valuable, an *invaluable*, source of efficiency” (1972, 227, emphasis in original).

An implication of Kalecki (1954) is that firms deliberately construct stable ecosystems. An ecology is stable by design. Firms intervene in their environment to bring about the conditions that they need (Sawyer 1988; 1989), but their behaviour is not indiscriminate. It explains the tendency towards oligopoly and collusion as well as the tendency for concentration to increase. The account omits a consideration of factors internal to the firm, that would explain the tendency towards oligopoly and why perfect competition is not a feature of the domain within which firms operate. It is argued below that oligopolistic market structures generate unique benefits unavailable in other market arrangements. These advantages drive the emergence of oligopolies in previously competitive industries and reinforce oligopolistic structures once established. There are also costs, which make oligopoly self-limiting. It is suggested that these costs are related to the collective nature of oligopolistic behaviour that results in the stabilisation of the market environment.

5. Inside the Firm

The usual argument is that industrial concentration is a key determinant of firm conduct (cf. Conyon *et al.* 2022). The contribution made by this article is to demonstrate that forces at the level of the firm explain the efficiency and, ultimately, persistence of oligopoly as a characteristic of the markets in which firms operate. Oligopoly is actively sought by firms and exists because it resolves a specific problem for the firm. Internally to the firm, the behaviour expresses itself as costs that are analogous to fixed costs. The accumulation of these costs, in part, explains the persistence of oligopoly and the tendency towards concentration and polarisation.

It has been maintained that firms exist in a fundamentally unstable environment and carry excess capacity to flexibly deal with unforeseen and unforeseeable circumstances. Firms face product market instability (oligopoly); factor market instability (technology) and credit market instability (moral hazard and collateralisation). Product market competition breaks out. Entry occurs. The turnover of firms is higher the more competitive the environment. Ongoing technological change threatens the obsolescence of current technology and forces adoption if widespread. Economic conditions (fluctuating aggregate demand) are cyclical and crisis-prone. Returns on investment are not guaranteed so collateralised borrowing threatens firms’ existing assets. Given oligopolistic interdependence, firms are prone to contagion. Yet the firm exists as a relatively stable, reproducing structure subject to a degree of external stability. It begs the question why such stability holds. Ultimately, firms maximise profits subject to a stability imperative.

Instability and path dependency characterise the tendency for industrial concentration and for the degree of monopoly to increase due to the principle of increasing risk and economies of scale (cf. Sawyer 1994). Given the various sources of instability in the environment, why it is that stability obtains in the domain in which firms operate becomes a topical question (Toporowski 2016; Rochon 2023). Instability is either externalised (transferred) or internalised (absorbed) by the firm. The contribution made by this article is to demonstrate how firms absorb the instability in their environment to bring about the conditions that they require. Competition destroys profits, suggesting that profit-seeking firms will find means to reduce its intensity. Externally, oligopolistic firms disperse instability to more competitive firms, which are characterised by a high mortality rate (cf. Kalecki 1932). These firms forgo destabilising price competition for quantity and other forms of non-price competition. As a result, prices and profit margins fluctuate less in concentrated industries. If, however, greater profits do not lead to greater investment, output will also fluctuate in concentrated industries and cause instability. Smaller firms also have a limited option set since all the options available to them are also available to their larger counterparts, but not vice versa. Should they survive, they still need to survive predation, irrespective of their technological advancement.

Further, oligopolistic firms stabilise their own environments by erecting barriers to entry amongst other things. The preference for internal finance of investment is a means to escape credit market instability. Dominance, collusion, formal networks (*e.g.* joint ventures) and informal networks (*e.g.* trade associations), and so on are a means to escape product and factor market instability. A research and development function within the firm is a means to escape factor market instability by controlling the pace of innovation and its effect on existing technology. The question becomes what makes it possible.

Firms internalise instability in order to sequester it. Given interdependence, the system is intertwined and interrelated, necessitating that the firm finds ways of severing these interlinkages in order to contain systemic contagion and maintain stability. The divisibility or compartmentalisation within the firm – the modularity of plants and the decentralisation of organisation – differentiates it from the market in isolating uncertainty. Internalising instability brings sustainability to the fore. Although profits arise during exchange when competition is absent, profit maximisation is only an approximation.

Firms can go for protracted periods without making profits; maintaining their capability to generate profits comes at a cost, manifested as excess capacity. In the absence of price competition, firms incur the costs of distribution that would normally occur in the process of exchange. A changing degree of monopoly changes the relationships between firms and labour, suppliers, other firms operating in the same markets, creditors, investment, and aggregate demand, etc. and vice versa. Since the degree of monopoly changes, there is constant redistribution, amongst others, of profits between firms. The Kaleckian system can evolve even in the absence of technological change because it is capable of autonomous distribution. These distribution effects are both a source and a result of systemic instability.

Investments, funded by profits, are at the heart of the mechanism by which firms construct ecosystems and stabilise their environments. Large-scale investment and disinvestment not only determine the pace of growth but, crucially, the direction of growth into different markets. Since firms cannot realise profits unless they actually invest, sustainability requires at least financial self-sufficiency and product market dominance. As a result, the emergence of an ecosystem, which gives rise to surplus profits, begins with the ability of firms to finance reproduction and accumulation largely from retained earnings. Product market domination and pricing allow firms to smooth the steady flow of those profits. These are, in turn, used to grow the firm in different directions and into different industries reinforcing its dominance.

A large diversified firm is not merely multi-industry, etc. but it is also multi-environmental. It exists in varying environments both as a means to achieve stability and as a means to limit the impact of instability in any one environment. The firm maximises and stabilises profits and as a result grows to dominate particular industries and grows out of these to others in intentional search of stabilisation opportunities at the least possible cost. Least possible cost refers both to a hurdle level of costs and ongoing costs incurred. Economies of scale are a critical threshold. Firms also have to commit resources to maintaining stability, and these are overhead costs that only arise for oligopolistic firms that choose cooperation.

The oligopoly price is set on a take-it-or-leave-it basis balancing several influences. First, the firm has to maximise profits without undermining the demand for its own products. Second, the firm has to maximise profits in order to limit the extent of external finance required for its own expansion, given its retention ratio and accumulated retained earnings. Third, the firm has to maximise profits subject to a price limit that induces retaliation. Fourth, the firm has to maximise profits subject to a price limit that induces entry. These are not self-reconciling for any given firm or even between firms. Fifth, potential instability transmits inherently unknowable and so unquantifiable costs to firms so excess capacity is a necessary part of production. Firms can adjust excess capacity amongst others to meet their pricing requisites with the profit mark-up allowing dominant firms to cooperate on prices.

There is a firm-level counterpart to these outcomes. It follows, ultimately, that dominance supports profitability. Dominance results in stability because it imposes the actions of some firms on other firms and restrains the actions of other firms. Dominance, though, has to be acquired and maintained in the face of potential instability, thereby making it costly. These overhead costs influence price formation in two offsetting ways. First, if overheads rise relative to output, any increase in price relative to prime costs is not automatic and is only possible if the degree of monopoly increases to compensate for the rising proportion of overheads. The price-cost margin would only remain unchanged if firms continue to accept prevailing profit rates. It suggests that there is a limit to which such overheads can be acquired. Second, while price-cost margins reflect profit-maximising behaviour, a broad set of historical and industrial factors are included in determining the extent and form of tacit agreements between firms (cf. Sawyer 1985). To the extent that firms cooperate, then the degree of monopoly tends to increase along with profit margins. The first effect has to be smaller than the second in order for dominance to be profitable.

It stands to reason that neither a least cost producer nor a monopoly would incur such costs. The former would not carry these costs since they introduce variability in the structure of costs. The latter would not carry them because they would be unnecessary and solely borne, negating the benefit of being a monopoly. This inability to absorb uncertainty and instability makes perfectly competitive and monopolistic firms and environments inherently less stable. Dominant firms can engineer stability by cooperating amongst themselves, and so they can share those costs and rationalise them through interdependence, specifically by distributing them via the mark-up for profit. It explains why oligopoly obtains. In essence, then, firms interlock and co-evolve.

The behaviour of firms that have achieved dominance explains the irreversibility of oligopoly. The costs of dominance necessarily increase over time, least of which because of the emergence of competitors. So over time these fixed costs drift upwards as a proportion of overall costs. It suggests, in part, that while firms may carry an increasing proportion of excess capacity, the actual available excess capacity may be limited because firms deliberately reserve some of this capacity to maintain market dominance. This becomes a non-discretionary component of excess capacity introducing rigidity into how the dominant firm can respond to changed circumstances. As the firm is more susceptible to changes in its environment, it triggers the application of more resources to maintaining dominance, reigniting the cycle. At the limit, new dominant firms emerge to replace old dominant firms. As these are replaced by oligopolies, which repeat the same behaviour for the same reasons, markets remain oligopolistic.

The resultant behaviour of non-dominant firms explains why the system is predisposed to increasing concentration. The ecology of an oligopolistic firm – particularly one that cooperates – is relatively stable. That of any other firm is not. Non-oligopolistic firms are vulnerable to potential instability and are subject to arbitrary elimination as a consequence. These firms also seek ways to stabilise their environment. The difference is that dominant firms can do so of their own volition, whereas non-dominant ones cannot. In this way, non-dominant firms seek ways to cooperate with dominant ones and access the stability created by the dominant. A catch-all expression for this behaviour is tethering. Non-dominant firms will tether to dominant firms, which creates a nexus between both types of firms that makes up a stabilising mechanism. In this way, non-dominant firms gain some autonomy within their environment that derives from such an association.

It explains why small firms exist in concentrated environments but also brings to the fore that small firms may play an invaluable role for large firms. Given the large-scale investments that oligopolistic firms make, any action on their part has repercussions for the industry as a whole. Given that both imply that the behaviour of an oligopolistic firm is potentially destabilising, small firms exist in these environments because on the whole they create footpaths through trial and error for large firms to follow (cf. Baran and Sweezy 1966).

Some firms' behaviour cascades into that of others, transmitting the conditions required for stability in the environment. This is asymmetric since it is conditional on dominance and cooperation. In the absence of both, the environment is unstable and destabilising. In the presence of both, the environment is stable with a tendency

towards stagnation. Solving for stability, which is necessary for profitability, leads to the adverse consequence that the firms that are the most efficient at doing so increasingly become less technologically efficient. This trade-off results in these firms being replaced by competitors. The tendency for clusters or cohorts of firms to emerge, in short, polarisation, is intimately related to the stability imperative. Alternatively, predation explains firm-level behaviour. Such an evolutionary perspective points to stability as a product of variety rather than as eliminating it.

Firms can achieve optimal stability in an oligopolistic market structure. The degree of monopoly allows firms to control several key conditions. In product markets, firms can establish the desired market share given autonomous demand. Firms can secure the necessary resources by retaining profits. Firms can access credit in accordance with the principle of increasing risk and strategically navigate credit markets, which are ultimately dependent upon conditions in the product market. Firms can also influence income distribution subject to labour militancy. In principle the firm controls everything except the exogenous component of each type of market (“market imperfection”) meaning then that oligopoly, market power, the degree of monopoly, etc. are self-limiting (Mbeki 2023).

6. Conclusion

Monopoly capitalism maintains that once oligopoly obtains, it remains. There is a tendency for excess capacity to increase and exist in the long run, and that there is a tendency for industrial concentration to increase. Therefore, there is a tendency towards stagnation. These effects are articulated at the level of industry. This article suggests a firm-level explanation for the same effects.

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