FACTOR SHARES, BUSINESS CYCLES AND THE DISTRIBUTIVE LOOP

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Abstract

This paper looks at how factor shares vary over the business cycle and how their movements fit into Kaleckian analysis. Heterodox accounts of factor-share movements include both profit-squeeze arguments (procyclical wage share) and underconsumption arguments (counter-cyclical wage share). Empirical evidence gives no decisive support for either account: factor shares may be procyclical and counter-cyclical at different stages of the business cycle. If factor shares vary in such a complex way, then Kaleckian models cannot have a stable distributive curve. The economy instead follows a distributive loop, with different adjustment paths during an upswing and downswing.

Keywords: factor shares, business cycles, profit squeeze, underconsumption, Kaleckian macroeconomics

1. Introduction

Factor shares in national income are often omitted from macroeconomics on the grounds that they vary little in either short run or long run; macroeconomic modelling can then go ahead without worrying about them. Empirically, however, we know that they vary cyclically and that cumulative short-run variations may create long-run trends. A thorough treatment of macroeconomics should incorporate factor-share movements over a typical business cycle. Heterodox economists have been prepared to discuss factor shares and ask how they affect macroeconomic adjustments, but agreement on their significance has not yielded a consensus on how they vary over the business cycle. The pattern of movement has never been entirely clear, and theorists have portrayed the wage share as being constant, procyclical or counter-cyclical.

The rule among Kaleckians has been to assume constant factor shares, in line with Kalecki's belief that the factor income distribution stays almost immobile in the short run (Kalecki, 1971, Chapter 6). Apparent fixity of factor shares (Bowley's Law), also a standard assumption in orthodox macroeconomics, implies that theorists can safely ignore the income distribution. When factor shares do vary in macroeconomic modelling, a common approach is to have a uniform positive or negative relation between wage/profit share and national income, usually termed a 'distributive curve' (Blecker, 2002; Taylor, 2004, Chapter 4; Barbosa-Filho and Taylor, 2006; Taylor, Barbosa-Filho and Rada, 2006). While this is mathematically convenient and acknowledges factor-share movements, it may be oversimplified as an account of cyclical factor shares. Another approach has been to relate employment and economic activity to *changes* in factor shares, rather than factor shares themselves, and insert the relationship into business-cycle models (Goodwin, 1967; Skott, 1989a, 1989b; Flaschel, Franke and Semmler, 1997, Chapter 4; Flaschel and Skott, 2006). Such a method generates more intricate factor-share movements out of phase with movements in employment or income: factor shares are procyclical and counter-cyclical at different stages of the business cycle, precluding a stable distributive curve.

The current paper adopts a Kaleckian model that can accommodate the three possible cases of fixed factor shares, a distributive curve and a 'distributive loop' in which factor

shares and national income follow a circular path. Of the three cases, the distributive loop comes closest to actual factor-share movements: even though factor shares may not change dramatically in the short run, their near-constancy derives from the mingling of procyclical and counter-cyclical shifts. As a causal explanation for the distributive loop, one can appeal to a hybrid of profit-squeeze and underconsumption arguments. Since the distributive loop can be identified without specifying a complete business-cycle model, it remains compatible with treating investment as exogenous and removes the need for a full investment theory. The next two sections summarise empirical evidence on factor-share movements and examine the theoretical interpretations; later sections build these into a Kaleckian model and advocate the distributive loop in preference to fixed factor shares or a distributive curve.

2. Constant or variable factor shares?

Ideas about constant factor shares do not go back to the origins of modern economics. The classical political economy of Ricardo (and its Marxian descendants) had no maxim about wage or profit shares being fixed; such assumptions emerged only during the later, neoclassical period (Krämer, 2006). Formal empirical proof seemed to come from work on British national income data carried out by Arthur Bowley in the early twentieth century, which discovered a striking constancy in wage and profit shares (Bowley and Stamp, 1927). The findings inspired Bowley's Law of stable factor shares in national income. Similar results for the US obtained by Paul Douglas seemed to sanction the fixed factor shares embodied in the Cobb-Douglas production function (Douglas, 1934). Stable wage and profit shares became a stylised fact of economic growth, though the stability assumptions have faced critical scrutiny ever since they were mooted.

Contrary to Bowley's Law, research on long-run factor shares has revealed secular movements over many decades. Experience after the Second World War splits into two main periods. The period of post-war reconstruction and growth, from the 1940s to the 1970s, saw a slow but sustained rise in the wage share of national income in most

developed countries, along with a fall in the profit share and profit rate (Weisskopf, 1979; Duménil and Lévy, 2002; Kristal, 2010). From the 1980s onwards, the trend went into reverse as the wage share began to fall and the profit share to rise (Wolff, 2003; Mohun, 2006; Carter, 2007). The causality behind the new trend is debatable but seems to stem from the change of political climate towards neoliberalism, deflationary macroeconomic policy, higher unemployment and declining unionisation (Wolff, 2003; Glyn, 2006; Fichtenbaum, 2009). 'Financialisation' of developed economies since the 1980s has empowered the financial sector, boosted rentier receipts and swelled property incomes as a whole (Epstein and Jayadev, 2005; Palley, 2008). Long-run trends in factor shares remind us that income distribution is pliable and responds to political and institutional pressures.

Superimposed on long-run trends are short-run movements in factor shares linked with the business cycle. Although some empirical studies have observed counter-cyclical real wages and wage shares, the general findings have been equivocal (Brandolini, 1995). Historical research suggests that counter-cyclical real wages were commoner in the nineteenth century than in the twentieth (Michie, 1987; Majewski, 1998; Nell, 1998, Chapter 2). Several studies have observed procyclical real wages, a trend that may have strengthened with economic development (Schor, 1985; Rayack, 1987; Hanes, 1996). This challenges orthodox arguments about counter-cyclical real wages but does not vindicate an alternative dictum about procyclicity. Empirical work on wage and profit shares demonstrates frequent short-run changes at odds with Bowley's Law (Nolan, 1987; Sherman, 1990; Buchele and Christiansen, 1993; Jefferson and Pryor, 2010). Far from being rigid, factor shares vary over time and place in both short run and long run. Bowley's Law could conceivably be rescued through the averaging out of localised and short-run factor-share variations – it may be an 'optical illusion' in the sense that factor shares only appear to be constant by virtue of counteracting and offsetting tendencies (Solow, 1958). Outcomes resembling fixed factor shares may be due to substantial but compensating factor-share changes in the short run.

3. Profit squeeze and/or underconsumption?

Short-run factor-share movements are vital to heterodox theories of the business cycle (Hahnel and Sherman, 1982a; Skott, 2003; Evans, 2004). Factor shares have close ties with cyclical economic behaviour as they affect profits, which in turn affect investment. By the Keynesian multiplier any change in investment brings a magnified change in national income, output and employment, increasing the likelihood of instability and cycles. At the same time as raising the capacity to invest, a high profit share suppresses consumption through classical saving behaviour: the net impact on aggregate demand is blurred and allows for either wage-led or profit-led growth (Rowthorn, 1981; Dutt, 1984; Bhaduri and Marglin, 1990; Taylor, 2004). Profit share and profit realisation are often opposed, and we cannot generalise about profit trends and their causal effects.

Profit-squeeze theories see volatile investment as the motor behind business cycles, with the upper turning point caused by rising wage and other costs that damage profitability and deter investment. The profit share moves counter-cyclically with the bargaining strength of employers: as the economy expands during a boom, low unemployment increases the power of workers to improve their real wages (Glyn and Sutcliffe, 1972; Boddy and Crotty, 1975; Goldstein, 1985). At the upper turning point, profits are squeezed sufficiently to choke off new investment and curtail aggregate demand; lower spending, reinforced by the Keynesian multiplier, stops the boom and pushes the economy into recession. The downswing brings rising unemployment, which weakens labour, revives the profit share and stimulates renewed investment and a hope of recovery.

Underconsumption theories put the accent on consumer demand when explaining business cycles and assume a procyclical profit share (Sweezy, 1968; Bleaney, 1976; Shaikh, 1978; Evans, 2004). During an upswing, money wages do not rise immediately and lag behind other income adjustments: higher incomes flow mainly into profits, raising the profit share. Under classical saving behaviour, the average propensity to save increases and slows down the pace of expansion; eventually these deflationary effects may discourage investment, reverse the expansion and tip the economy back into recession. During a downswing, labour seeks to preserve money wages; income losses

are deducted from profits, so the profit share falls and the wage share rises. A higher propensity to consume buttresses consumer demand, restores business confidence and sets the scene for recovery.

Related to underconsumption theories is the overhead labour thesis concerning the relative stability of managerial and professional employment (Hahnel and Sherman, 1982a). In the early stages of a recession, firms reduce output and lay off production-line workers but retain their overhead labour such as managers, clerical staff and professionals. The fixed element in labour costs means that the wage share rises and becomes counter-cyclical. Economic expansion reverses the trend as there is no immediate need for new overhead labour and recruitment is limited to production-line workers: rising incomes go disproportionately into profits, raising the profit share and reducing the wage share. The factor-share patterns mirror those put forward by underconsumption theories, though the causality is distinct.

Varied cyclical influences on factor shares were noted in Kalecki's writings on the subject: he assumed roughly constant factor shares in the short run, but his views rested on offsetting causal effects (Kalecki, 1971, Chapter 6). He picked out the degree of monopoly, the ratio of materials prices to wages, and the industrial composition of output as influences on profit and wage shares. During a recession, employers look after their profits by raising the mark-up of price over cost: the profit share rises, the wage share falls. A recession also reduces the cost of raw materials compared with labour, for they are in nearly fixed supply and have flexible, demand-determined prices. Rising relative wage costs increase the wage share, while the profit share falls. Changes in the industrial composition of output may be a further reason for factor-share movements: if the industries hit by recession have a large wage share (as Kalecki predicted), then the aggregate wage share becomes procyclical. Taken together, these influences tend to negate each other and decrease cyclical shifts in factor shares.

Profit-squeeze and underconsumption theories may seem incompatible, since they make opposite assumptions about cyclical factor-share movements. Yet causality is complex, and business cycles are marked by an intricate sequence of shifts in factor shares (Hahnel and Sherman, 1982b; Sherman, 1987). The profit share tends to be

procyclical for much of the business cycle, as underconsumption theories would predict, but becomes counter-cyclical near the upper and lower turning points, as profit-squeeze theories would predict (Weisskopf, 1979; Buchele and Christiansen, 1993; Van Lear, 1999; Sherman, 2003). A crisis may reflect troubles with both profit share and profit realisation, a two-sided restriction sometimes described as the 'nutcracker' (Sherman, 1999). There is space for a hybrid account of business cycles that pulls together the profit-squeeze and underconsumption theories. The rest of the paper explores these possibilities within a Kaleckian model adapted to include factor-share movements.

4. A Kaleckian model with variable factor shares

If factor shares do change in the short run, then they are an alternative to employment and income variation as a means of attaining a steady state. How they vary remains unclear, and a single, well-behaved distributive curve should not be taken for granted. A steady state could be reached by several means, so the modelling becomes more elaborate with many potential adjustment paths. To proceed further, we need to set up a Kaleckian model that lets factor shares vary alongside employment and income.

National income is divided between wages and profit, with profits defined broadly to encompass all property incomes. For a closed economy, expenditures comprise the consumption spending of profit recipients, wage earners and the unemployed, plus investment and government spending. The model can be expressed formally as below:

$$Y = W + P = VE \tag{1}$$

$$\alpha = W/Y \tag{2}$$

$$\beta = P/Y \qquad (\alpha + \beta = 1) \tag{3}$$

$$\begin{aligned} X &= C + I + G \\ &= (1-t_w)\alpha VE + c_p(1-t_p)\beta VE + B(L-E) + I + G \\ &= BL + ((1-t_w)\alpha + c_p(1-t_p)\beta - B/V)VE + I + G \end{aligned} \tag{4}$$

where Y is total income, X is total expenditure, E is employment, L is the labour force, V is average value added per employee per period, W is wage income, P is profit income, B is average unemployment benefit, C is consumption, I is investment, G is government spending, α is the wage share in total income, β is the profit share in total income, c_p is the propensity to consume from profits, t_w is the average tax rate on wages, and t_p is the average tax rate on profits.

Under classical saving behaviour, savings come from profits rather than wage incomes; the present model assumes that workers and benefit recipients do not save, thereby avoiding any issues surrounding the workers' share of profits (as discussed by Pasinetti (1962) when deriving the Cambridge equation). This assumption eases the analysis but is not crucial to the results. B, L, c_p, t_w and t_p remain constant during the period considered. α and β, normally assumed constant too, are endogenous variables here. V is an exogenous variable: it cannot vary through technical change in the short run, but it can still vary through changes in how production is organised. I and G are also exogenous variables: the model does not make investment endogenous by tying it to the profit share.

Total spending rests partly on expenditures by workers and the unemployed, who are a 'null-income' group (Weintraub, 1985). With zero earned incomes and few savings, the unemployed would have negligible expenditures were it not for welfare measures: the policies selected are pivotal to how national income adjusts (Jackson, 1999; Nell, 2003). In the present model the government pays a benefit B to the unemployed, such that B is less than the average wage αV and the replacement rate is less than one. B has its familiar function as an automatic stabiliser, dampening the effects of volatile investment expenditures on national income.

In a steady state, total income must be equated with total expenditure. Setting Y=X in equations (1) and (4) and solving for Y yields:

$$Y = \frac{BL + I + G}{1 - (1-t_w)\alpha - c_p(1-t_p)\beta + B/V}$$

$$= \frac{BL + I + G}{1 - c_p(1-t_p) + B/V - (1-t_w-c_p(1-t_p))\alpha} \quad (5)$$

This has the features of a Keynesian model in so far that Y is related positively to increases in autonomous expenditures and negatively to increases in saving. Classical saving behaviour means that $1-t_w > c_p(1-t_p)$ should hold true, and a higher wage share α will be expansionary. Total wages W, defined by equations (2) and (5), are positively related to α in all cases. Total profits P, defined by equations (3) and (5), may or may not be positively related to β because the model has the Kaleckian property of a tension between profit share and profit realisation: a rise in β raises profit share but deflates the economy and makes it harder to realise profits, so that the net change in P depends on which effect predominates.

Equation (5) shows the steady states that may occur at different values of Y and α; diagrammatically, it gives the upward sloping hyperbola of the steady-state (SS) curve in Figure 1. If α is variable, closure of the model relies on how α changes with economic activity. The usual theoretical device is to have a distributive curve that traces factor-share changes over a typical business cycle (Blecker, 2002; Taylor, 2004, Chapter 4). For reasons of algebraic tractability, suppose that the distributive curve takes the form below (other shapes might occur in practice):

$$\alpha = \delta(\alpha_h - \theta/Y) + (1-\delta)(\alpha_l + \theta/Y) \qquad (0<\alpha_l<\alpha_h<1;\ 0<\delta<1;\ \theta>0)$$
$$= \tilde{\alpha} + (1-2\delta)\theta/Y \quad (6)$$

where $\tilde{\alpha} = \delta\alpha_h + (1-\delta)\alpha_l$. The curve is a weighted average of an upward sloping hyperbola and a downward sloping one, with upper and lower limits on the wage share of α_h and α_l respectively. Varying the weight δ changes the slope of the distributive curve: the wage share increases with national income when $1>\delta>½$, stays constant when $\delta=½$, and decreases with national income when $½>\delta>0$. Substituting from equation (6) into equation (5) yields the following expression for Y:

$$Y = \frac{BL + I + G + (1-t_w-c_p(1-t_p))(1-2\delta)\theta}{1 - c_p(1-t_p) + B/V - (1-t_w-c_p(1-t_p))\tilde{\alpha}} \quad (7)$$

Equation (7) is similar to equation (5), differing only in the extra term in the numerator and the presence of $\tilde{\alpha}$ in the denominator.

Fixed factor shares throughout the business cycle (δ=½) would give a vertical distributive curve, as in the factor-share (FS) curve of Figure 1. When the economy expands, investment (I) will increase and average productivity (V) may also rise. Since investment is the prime mover of economic activity, a rise in I lies at the heart of any upswing. Average productivity will not in general be constant during a cycle and may vary if employers change the intensity of work or distribution of employment (Jackson, 1991-92). From equation (5) we can see how the SS curve depends on I and V: a rise in I shifts it upwards, a rise in V shifts it upwards and increases its slope. Economic expansion unambiguously brings a rise in I, but the change in V is less certain: it is often assumed that average productivity varies procyclically, if employers raise work intensity during a boom and lower it during a recession, yet this cannot be guaranteed and productivity may in some cases move counter-cyclically. An expansion is sure to shift the SS curve upwards, with an effect on its slope that could vary between different cases. Figure 1 shows the resulting movement along the vertical FS curve with a constant α.

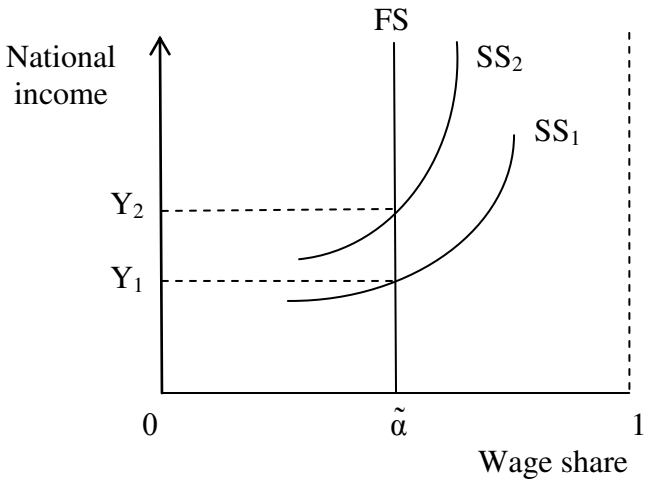


Figure 1. Economic expansion: fixed factor shares.

Once α is allowed to vary, it becomes integral to economic adjustments, as in Kaldor's macroeconomic theory of distribution (Kaldor, 1955). Kaldor argued that employment changes may not always be straightforward, especially when the economy is close to full employment, and that factor shares may vary instead. Under classical saving behaviour, the factor income distribution is an alternative to national income/employment as a means of satisfying the steady-state condition. A fixed national income restrained by an upper employment ceiling (Y_f) would engender the horizontal FS curve of Figure 2. The economy expands not through greater national income and employment but through a shift towards profit incomes that generate higher saving. The fixed-factor-shares and Kaldorian cases represent the extremes of a vertical and horizontal FS curve. Other cases are possible between the extremes, if both national income and factor shares are endogenous variables.

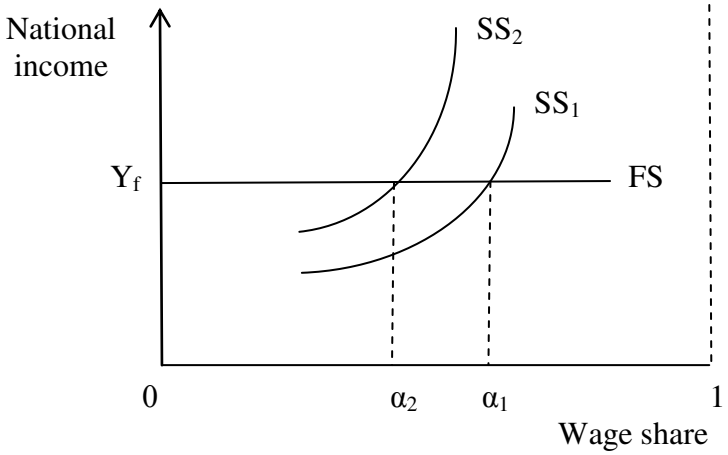


Figure 2. Economic expansion: Kaldorian case.

Profit-squeeze theories assume a procyclical wage share driven by the greater bargaining strength of workers during a boom: within the present model, δ is higher

than for the fixed-factor-shares case ($1>\delta>½$) and the FS curve slopes upwards as in Figure 3. An expansion from SS_1 to SS_2 raises the wage share and lowers the profit share, inducing a profit squeeze. Under classical saving behaviour workers spend proportionately more than profit recipients, and the rising wage share augments the expansion. From equation (7) we know that:

$$\partial Y/\partial I = \frac{1}{1 - c_p(1-t_p) + B/V - (1-t_w-c_p(1-t_p))\tilde{\alpha}} \qquad (8)$$

Compared with the fixed-factor-shares case, a larger δ raises $\tilde{\alpha}$ and $\partial Y/\partial I$, which increases the expansionary effect of a given expenditure rise and renders the economy less stable. The surge towards the peak of the cycle will be cumulative, until the crisis forces a retrenchment in investment spending and a downward shift in the SS curve. When the SS curve starts falling the cumulative effects go into reverse and a downward spiral ensues. The bottom of the recession sees a shrunken wage share and docile workers whose bargaining power is weakened by high unemployment. Capitalists now resume their investment as they can finance it more easily from profits and meet little resistance in making major changes to technology and the organisation of production.

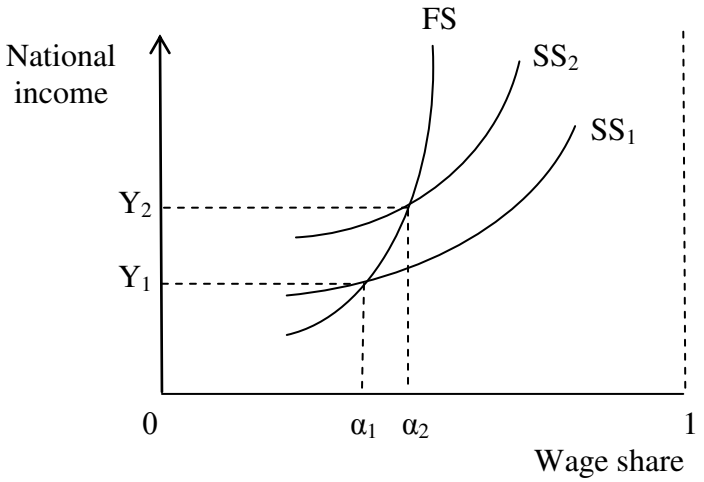


Figure 3. Economic expansion: profit-squeeze case.

Underconsumption theories have a counter-cyclical wage share, on the premises that money wages change only slowly and that short-run increases in national income go mostly into profits: within the present model, δ is lower than for the fixed-factor-shares case ($½>\delta>0$) and the FS curve slopes downwards as in Figure 4. An expansion from SS_1 to SS_2 lowers the wage share and raises the profit share. Classical saving behaviour means that the channelling of income towards profit increases the average propensity to save, which impedes the growth of national income. A smaller δ reduces $\tilde{\alpha}$ and $\partial Y/\partial I$, as can be seen from equation (8), so the effect of a given expenditure change on Y is repressed and the economy more stable. Problems in sustaining consumption will stifle long-term growth and soften any cumulative effects; if they deter investment the upshot will be a crisis and the onset of a downswing. When the economy contracts, the rising wage share preserves demand and prevents a slide into cumulative decline. The resilience in aggregate consumption eases profit realisation and bolsters business confidence; renewed investment spending ends the recession and brings a new expansion.

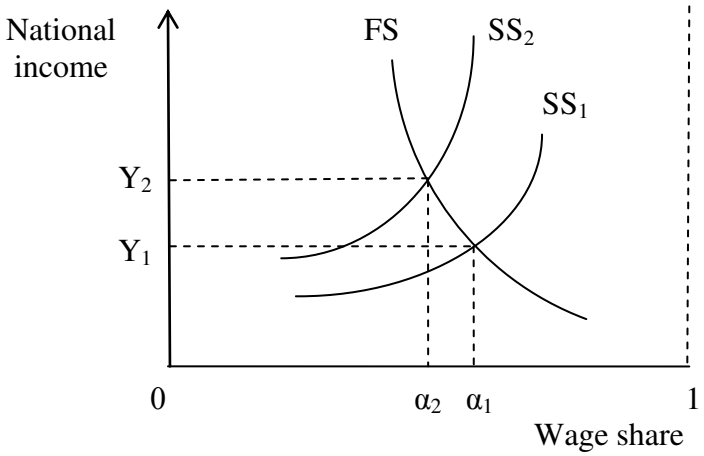


Figure 4. Economic expansion: underconsumption case.

Among the various cases, the two basic alternatives are profit squeeze (upward-sloping FS curve) and underconsumption (downward-sloping FS curve). The fixed-factor-shares case may hold true in some circumstances but is unduly strict in requiring no variation at all in factor shares; the Kaldorian case errs in the other direction by having implausibly rapid factor-share changes. Profit-squeeze and underconsumption arguments are credible enough within their own terms, whatever their supposed incompatibility. Each may be valid at particular times and places – their relative significance for cyclical fluctuations has been a topic of empirical debate. Some writers have doubted the worth of profit-squeeze theories, which seem undermined by the secular decline in the wage share and labour's bargaining power since the 1970s and the prevalence of a procyclical profit share within observed business cycles (Michl, 1988; Sherman, 1990, 1997; Weisskopf, 1992). On the other hand, a more effective decomposition of trend and cycle may restore the case for profit-squeeze theories, even if cyclical pressures on the profit share have dwindled in recent times (Goldstein, 1996, 1999b). Empirical evidence suggests that profit-squeeze and underconsumption arguments may apply in different stages of the business cycle, but their interaction remains complex and open to alternative interpretations (Goldstein 1999b; Sherman, 1999, 2002). If profit and wage shares display both procyclicity and counter-cyclicity within any given business cycle, then the models considered in the present section are inadequate and a more elaborate account will be needed.

5. Factor-share movements and the business cycle

Over a typical business cycle, factor shares follow the pattern of Figure 5, which summarises the empirical findings discussed in Section 3. Rising profit share characterises the lower turning point (recovery) and upswing, falling profit share the upper turning point (crisis) and downswing. The switch from rising to falling profit share happens before the upper turning point, the reverse switch before the lower turning point. This creates the four stages in Figure 5. Stage I spans most of the upswing and couples rising income with a rising profit share; Stage II covers the last part of the upswing until the crisis and couples decelerating income growth with a now

falling profit share; Stage III starts at the crisis and lasts through most of the downswing, coupling a decline in income with a falling profit share; Stage IV marks the last part of the downswing until the recovery, with a slower rate of income decline and a profit share now rising again. The stages are likely to be unequal in length; Stages I and III, stretched out over the upswing and downswing of the cycle, should normally be longer than Stages II and IV.

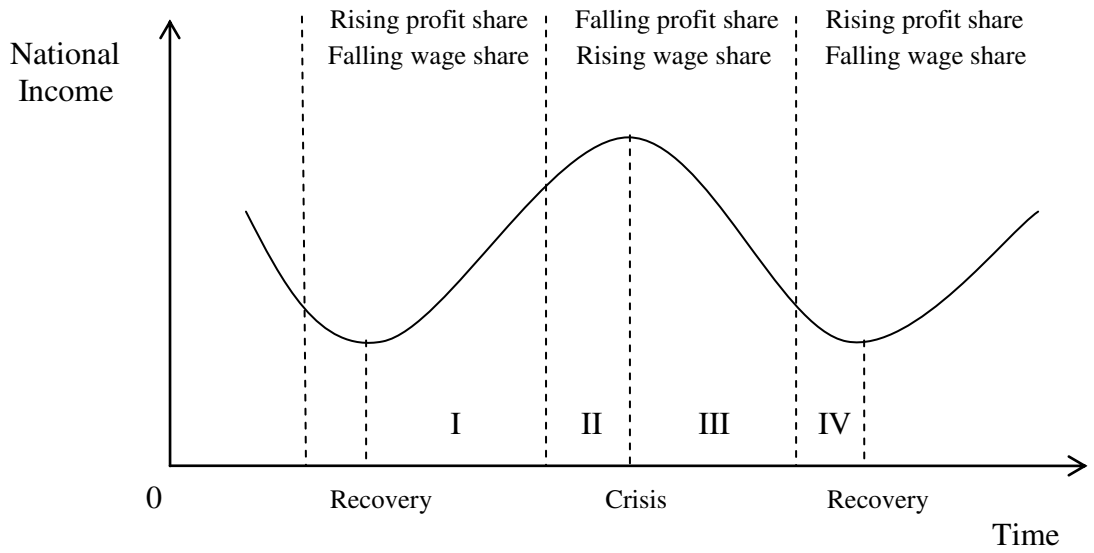
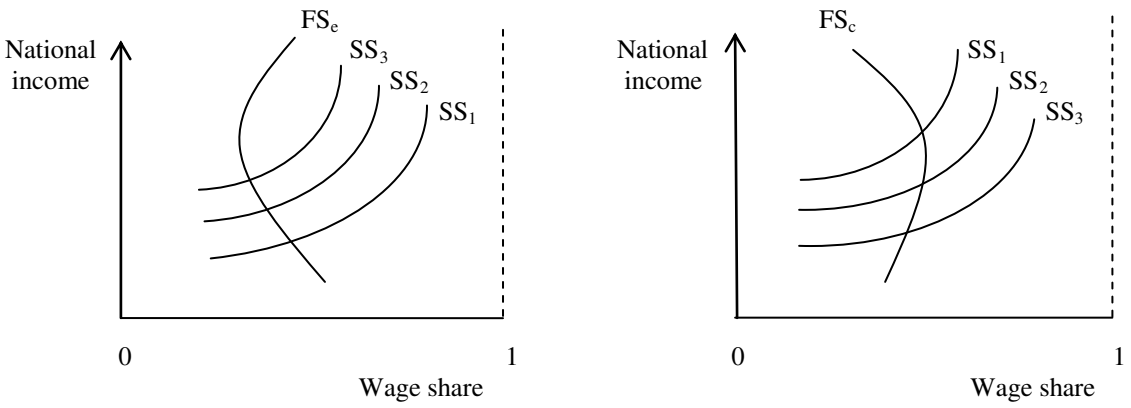


Figure 5. Factor shares in a typical business cycle.

If factor shares follow the four-stage sequence from I to IV, then the FS curve no longer has a uniform slope and must be bent or kinked. Figure 6 shows how factor shares move during an expansion and contraction. As the economy expands it goes up the downward sloping section of the FS_e curve (falling wage share) for most of the upswing in the business cycle (Stage I). Near the peak of the cycle the bargaining power of labour flourishes, real wages are defended and the profit share is curtailed, so that the FS_e curve becomes upward sloping for a shorter time until the upper turning point (Stage II). The crisis discourages investment and ends the expansion: the SS curve begins to move downwards again. Labour's bargaining power is still solid, wages and employment are slow to adjust, and the profit share continues to fall during most of

the downturn – the economy does not go back down the FS_e curve but moves along the downward sloping section of the FS_c curve (Stage III). As the recession proceeds and unemployment rises, labour's strength withers and the profit share recovers: the economy enters the upward sloping section of the FS_c curve (Stage IV). Revived profitability and renewed business confidence prompt higher investment spending that ends the contraction and yields the lower turning point, where the cycle starts again. The factor-share changes in Figure 5 mean that the economy does not adjust along a single FS curve but along FS_e in the expansion and FS_c in the contraction. The FS curve of Figures 1 to 4 is no longer adequate; we need the paired curves FS_e and FS_c, neither of which has constant slope.



(a) Expansion *(b) Contraction*

Figure 6. Economic expansion and contraction: hybrid case.

Empirical evidence finds that factor shares undergo small but regular variations during the cycle on the pattern outlined above (Sherman, 1990; Goldstein, 1999a; Harvie, 2000; Mohun and Veneziani, 2008; Zipperer and Skott, 2010). Both the FS_e and FS_c curves will be steep and nothing like the horizontal Kaldorian case of Figure 2. They counterbalance each other to leave factor shares that vary little but are not fixed. On average the vertical FS curve of Figure 1 may be reasonably accurate, though it masks the factor-share movements within the business cycle. When joined together, the FS_e and FS_c curves give the distributive loop in Figure 7. The upswing (Stages I and II

in Figures 5 and 7) corresponds to the movement up the FS_e curve from trough to peak; the downswing (Stages III and IV in Figures 5 and 7) corresponds to the movement down the FS_c curve from peak to trough. During this adjustment the wage share may hold to a stable average of α_m while varying cyclically between a lower limit of α_l in the upswing and an upper limit of α_h in the downswing. A vertical FS curve at α_m could be a tolerable approximation, yet it would overlook how the economy adjusts. Asymmetries between expansion and contraction have to be depicted by the cyclical path in Figure 7 as opposed to an FS curve. The economy never settles into equilibrium but experiences continuous circular motion.

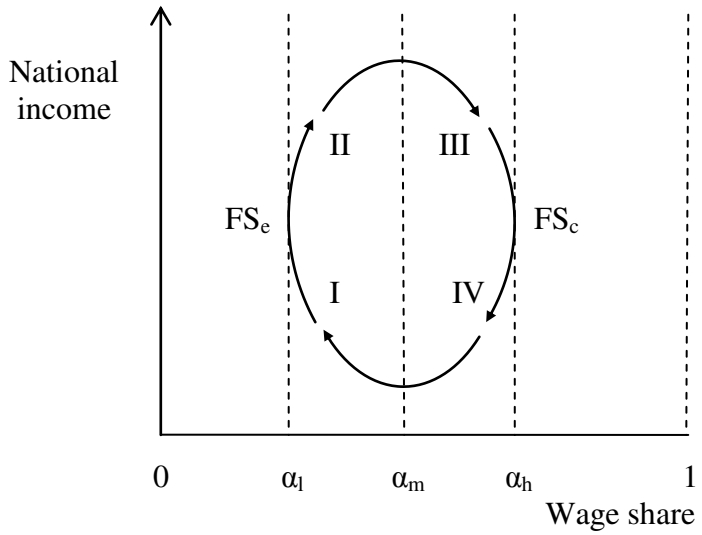


Figure 7. The distributive loop.

A distributive loop exists because factor-share movements have similar periodicity to the business cycle but are out of phase with it – the turning point in the factor-shares cycle occurs before the equivalent turning point in the business cycle, as in Figure 5. If the two cycles were precisely in phase, then the distributive loop would collapse into a single distributive curve with either a procyclical or counter-cyclical wage share. Absence of Stages II and IV from Figure 7 would merge Stages I and III into a single, downward sloping FS curve; the wage share would move counter-cyclically in phase

with the business cycle. Conversely, absence of Stages I and III would merge Stages II and IV into a single, upward sloping FS curve; the wage share would move procyclically in phase with the business cycle. A unified distributive curve requires the implicit assumption that factor-share movements are perfectly synchronised with the business cycle and never out of phase: in this respect it is a special case. More generally, the factor-shares cycle can be out of phase with the business cycle, and a distributive loop replaces the distributive curve.

Figure 7 resembles the phase diagrams that plot movements of employment and the wage share in Goodwin's growth cycle and related theories (Goodwin, 1967; Skott, 1989a). Goodwin makes a profit-squeeze argument defined in terms of rates of change: the change in the profit share is what varies counter-cyclically. This amounts to a weaker version of profit squeeze, inasmuch as the profit share moves procyclically as well as counter-cyclically and may be no higher on average during a recession than during a boom. If the profit squeeze refers to levels rather than rates of change, as in the present model, then a distributive loop can be generated only if the economy switches between profit squeeze and underconsumption at different stages of the business cycle. We therefore have two alternative ways of explaining a distributive loop, either by applying profit-squeeze arguments to changes in factor shares (Goodwin's growth cycle) or by combining profit-squeeze arguments defined in terms of levels with underconsumption arguments (Sherman's nutcracker theory). Both alternatives tone down the 'pure' profit-squeeze analysis.

How does the Kaleckian approach adopted here compare with Goodwin's growth cycle and its offshoots? Goodwin-style models can generate the cyclical factor-share movements of Figure 5 in a mathematically elegant fashion and provide a complete account of business cycles that endogenises investment and other key variables. Their elegance and completeness can be seen as a boon, but it may be a drawback if it gives too narrow and mechanical a picture of business cycles. Bearing in mind the complexity of actual economic fluctuations, the current paper has discussed cyclical factor shares without seeking a complete causal theory. The distributive loop has empirical origins in the correlation between aggregate variables; it indicates a loose adjustment path swayed by many causal forces, as against a tight adjustment

mechanism. While profit-squeeze and bargaining strength arguments may contribute to explaining the distributive loop, they coexist with other influences such as the overhead labour thesis, lagged wage movements, raw material prices and the industrial composition of output. A theoretical stance that can embrace varied causal interpretations is consistent with Kalecki's views about the multiple determinants of cyclical factor shares (Kalecki, 1971, Chapter 6). Every business cycle will have unique historical features that may impinge on the shape of the distributive loop and the causality behind it.

Investment decisions have always been volatile, prone to the spontaneous, impulsive urges described by Keynes as 'animal spirits' (Keynes, 1936, Chapter 12). This makes investment notoriously difficult to model, so the best option may be to leave it as an exogenous variable. The theory then has gaps, of course, but leaves room for diverse causal influences. Business-cycle theories go farther by linking factor-share movements to investment: the causal links might have practical relevance, yet it would be unwise to regard them as fully explaining investment. Other influences beside factor shares will pertain. Finance and monetary conditions, for example, are critical for business confidence and investment plans – financial instability played an obvious role in the recent global recession. A comprehensive causal treatment of business cycles would have to deal with the financial and monetary setting.

6. Conclusion

Cyclical factor-share movements, when added to a Kaleckian model, rule out a single path along which the economy adjusts. Because the factor-shares cycle is out of phase with the business cycle, changes in factor shares are misaligned with changes in economic activity. Expansion occurs along a different path from contraction, and no distributive curve can delineate the economy's trajectory. In place of a distributive curve, we have a distributive loop that tracks the economy over a four-stage sequence (early upswing, late upswing, early downswing, late downswing) that recurs cyclically but never complies with a template or timetable. Relative lengths of each stage depend

on the time lag by which factor-share movements and income/employment movements are out of phase: a shorter time lag diminishes the length of the late upswing and late downswing stages compared with the others. Owing to the myriad influences on investment, any particular business cycle has aspects that differentiate it from the adjacent cycles and may lead to uneven periodicity.

Factor shares are cyclical but do not change dramatically or suddenly. The Kaldorian case, where the factor income distribution provides the sole mode of economic adjustment, remains hypothetical and is unlikely to be witnessed. Actual distributive loops should be narrow and steep-sided, such that the wage share varies around an average value. The approximate constancy of the average seems to chime with Bowley's Law, but a fixed-factor-shares assumption would distort our understanding of the business cycle. Apparent fixity comes from numerous causal forces partially offsetting each other. The precarious balance between procyclical and counter-cyclical forces does not guarantee fixed long-run factor shares: if the profit expansion in the upswing outweighs the contraction in the downswing, then the net effect will be secular growth of the profit share, as observed over the last few decades. Asymmetries in the business cycle bring slow but steady shifts in long-run factor shares.

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