Semi-autonomous household expenditures as the *causa causans* of postwar US business cycles: the stability and instability of Luxemburg-type external markets

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Similar patterns can be observed in post-WWII US business cycles. The initial upswings tend to be led by household investment and debt-financed personal consumption expenditures, which then wane in relative importance, and lead downswings. As those expenditures are financed in significant part by money creation, they function as an external market—driving accumulation by enabling monetary profit realisation—in a way analogous to Rosa Luxemburg’s treatment of the public and foreign sectors. Empirical studies on wage-led/profit-led demand regimes typically exclude household investment or include it in with business investment. This paper argues that it is vital to distinguish an independent role for ‘semi-autonomous’ household expenditures as a driver of effective demand and cyclical dynamics. The failure to do so in empirical studies sustains misleading conclusions such as the perceived relevance of Goodwin-type profit squeeze cycles.

*Key words:* Autonomous household expenditures, External market, Induced firm investment, Business cycles, Goodwin cycle

*JEL classifications:* E20, E32, E51

1. Introduction

Gross fixed investment by the household sector is usually quite significant in the United States, averaging around one-half of that undertaken by the corporate sector, and in most years a multiple of the government deficit (which in the USA is nearly always in deficit). Household investment is non-capacity generating and financed significantly by recourse to borrowing. Its implications for the firm sector are thus similar to that of debt-financed consumption: an external source of profits. A lesson of the sluggish recovery amidst ultra-easy monetary policies is that firm investment is mainly induced. This paper adds to existing literature by underlining that a different understanding

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Gross fixed investment by the household sector is composed of a residential component by households proper and a non-residential component by non-profit institutions serving households.

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of demand regimes emerges when ‘semi-autonomous’ expenditures by the household sector, especially by workers, are recognised as an external and contemporaneous source of profits.

The analysis proceeds as follows. Section 2 argues that the demand-side of US post-WWII business cycles is not well approximated by firm-centric macro dynamics. Neo-Marxians interpret clockwise patterns in profit share/utilisation space as evidence of profit squeeze cycles. What is often overlooked in US data is that the output share of corporate fixed investment tends to be out of sync with the profit share (contra the classical saving assumptions). Section 3 presents data for the output share of ‘semi-autonomous’ household expenditures—household fixed investment and debt-financed consumption—with similar orientations to the profit share. Section 4 further examines US data, using the profit rate to demarcate phases of the cycle, as per Weisskopf (1979). The finding that pseudo-Goodwin cycles can be generated by household-centred financial dynamics brings into question of the conclusions of the profit squeeze theory, as argued in Section 5.

2. Growth theory: a passive or active role for workers?

Bhaduri and Marglin’s (1990) dichotomy of wage-led (stagnationist) or profit-led (exhilarationist) demand regimes has motivated a large number of econometric studies. The findings are contested, as well as inclusive, partly as a result of different techniques (Blecker, 2015). Neo-Marxians typically frame their analyses around some version of the ‘profit squeeze’ theory of the business cycle à la Goodwin (1967). It is doubtful Kalecki would accept that ‘in the wage-led case, the real wage would move pro-cyclically’ (Bhaduri and Marglin, 1990, p. 379, fn. 1). Kalecki (1971, pp. 50–57) recognised the role of overhead costs in squeezing profits. Expansions in demand during cyclical upswings will increase profit margins and the profit share, even with constant unit direct costs up to full capacity, if unit overhead labour costs move counter-cyclically (and decrease with higher rates of utilisation). Overhead labour is undoubtedly important. In the three decades before the ‘subprime’ crisis the shift from wages to profits was less marked in the USA than that from ordinary labour to ‘working-rich’ managers. Lavoie (2009) and Palley (2016) underline that the standard assessment of a demand regime may be misleading if the salaries of managers are included in the wage share.

Another concern is how well data can be explained by the theoretical construct of what Skott and Zipperer (2011, p. 26; 2012, p. 278) call a ‘pure’ capitalist economy; where firms undertake all investment and saving, and there is no public or foreign sector. How distributive dynamics interact with debt dynamics is less considered. The role of household debt was often downplayed before the ‘subprime’ crisis: ‘the typical financing relation for consumer and housing debt can amplify but it cannot initiate a downturn in income and employment’ (Minsky, 1982, p. 30). Worker debt dynamics emerged in the US economy on a significant scale in the roaring 1920s (Wisman, 2014). A shift in financial practices to granting workers credit qualifies as a major structural change. Debt-financed expenditures could transform the role played by workers in the monetary realisation of profits.

2 In Dutt’s (2006) consumer debt model, worker borrowing depends on the wage bill, and amplifies impetus in the firm sector. The alternative view of this paper is that debt-financed household expenditures can impart an external impetus on firm accumulation (and independently of prior financial saving via endogenous money).
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Not all post-Keynesians have followed Keynes (1937) in designating business investment as the *causa causans* of the economic system. For Kaldor (1983) and McCombie and Thirlwall (1994), it is autonomous exports that drive output growth, whereas for Godley and Cripps (1983) it is exports and government expenditures. The line of argument developed in this paper has some affinities with those approaches, as well as with the Sraffian authors who, building on the Hicks-Kaldor concept of ‘the super-multiplier’, emphasise the role in accumulation of the autonomous components of effective demand that do not generate productive capacity.³ A key part of the rationale is that debt-financed expenditures, by sectors other than firms, may be an important source of profits and a driver of accumulation (and the latter by inducing firms to invest to adjust capacity to demand).

For Luxemburg ([1913] 1951), the processes of accumulation stagnate without rising demand from the public and foreign sectors. Kalecki ([1967] 1991) identified Luxemburg’s *external markets* as playing an important contemporary role in enabling expanded reproduction. The key aspect of an *external market* is that the expenditures are financed by a source *external to* the firm sector’s current outlays. Worker investment in new dwellings and debt-financed consumption possess the characteristics of an *external market*. The reason is because the finance for those expenditures is largely external to current wage income and, when financed by banks, also independent of any prior income. A home purchase will usually exceed the annual wage of non-supervisory workers. Cesaratto (2015) makes similar connections linking the capacity of household expenditures to function as an *external market* to the endogenous money creation of *ex nihilo* purchasing power.

This paper seeks to examine the role in the business cycle of what I will label shorthand as ‘semi-autonomous’ household expenditures. Figure 1 provides some intuition to the arguments. The graphic shows the ratio of gross fixed investment by the US household sector (H-GFI) to that by the corporate sector (C-GFI). A second series adds the change in consumer credit to H-GFI to give a measure of ‘semi-autonomous’

![Fig. 1. US household and corporate gross fixed investment (in percent), 1952(I)–2016(II). Source: St. Louis Federal Reserve, FRED. Freddie Mac, Cash-Out Refinance Report.](image-url)

household expenditures (H-SAE). The US Federal Reserve’s consumer credit data includes home equity loans. Another H-SAE series adds in lending data for ‘cash-out’ mortgage refinancings (H-SAE`). Household fixed investment and consumer credit usage are characteristically stronger (weaker) during the initial (later) phases of cycles than corporate fixed investment. Presumably this is due in part to the incentive for prospective homeowners to obtain mortgage finance at low interest rates, whereas corporate fixed investment is much less responsive to counter-cyclical interest rate policy, as it is mainly induced by the level of demand. The construction and furnishing of housing, and attending multiplier-type effects, help push up rates of utilisation, thereby eventually inducing firms to expand fixed investment.

3. Demand regimes: income led or expenditure driven?

This section will give some flavour to existing empirical studies and to the theoretical arguments. Bivariate pattern data is presented and the results discussed. Starting with neo-Marxian studies, Barbosa-Filho and Taylor’s (2006, p. 408) claim that US data shows ‘real wage and labor productivity dynamics over the cycle are the main driving force behind the distributive profit squeeze’ is based on the estimation of a negative relation between the wage share and utilisation (calculated as deviations of real output smoothed by a Hodrick-Prescott filtered trend) at a two-quarter lag. Counterclockwise cycles in wage share/utilisation space and wage share/employment space are widely seen as indicating Goodwinian predator-prey mechanisms and a profit-led demand regime.

A claim of the Goodwin-inspired literature is that the conditions for recovery are established via unemployment and lower real wages. Goodwin (1967) has the wage share as the predator and the rate of employment as the prey. High values for the wage share are theorised to crowd out capacity investment by squeezing profits. Barbosa-Filho and Taylor (2006) use the rate of utilisation as a proxy for labours’ bargaining power over nominal wage rates. The structuralist story takes as a starting point ‘real wage inflation and the resulting profit squeeze’ (von Arnim and Barrales, 2015, p. 370). Skott and Zipperer (2012) tell a story without a Phillips curve wage-price spiral; instead, output prices and the profit share adjust ‘instantaneously’ to demand pressures in the goods market. High values for the rate of employment put a damper on accumulation, and implicitly squeeze profit margins, albeit without affecting nominal wage rates (which are held constant along with labour productivity).

What matters here is that these Goodwinian models posit the classical saving assumptions, where workers do not save and firms retain all profits. Firm fixed investment is assumed to be equal to profits and the leading component of demand that drives upswings and downswings at the macro level. Further, as the models have no financial stocks, the net lending balance of each individual sector (that is, the financial component of a sectors’ saving) is assumed to be always exactly equal to zero. None of those postulations are a good fit with US data, as we will see.

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Turning to post-Kaleckian empirical studies, the focus is to determine the lagged effect of changes in the wage share on private demand. If the sign for the ‘private domestic excess demand’ is positive, the demand regime is labelled as wage led, and it implies within the framework that the positive effect of a higher wage share on consumption exceeds the negative effect of a lower profit share on investment. There is also the possibility of said ‘perverse effects’, if consumption reacts positively to a higher profit share, or if investment reacts positively to a higher wage share. Stockhammer and Stehrer (2011) report that of the OECD countries with a profit-led demand regime, over at least some of the accessed lag lengths, that the result is due to perverse consumption and/or perverse investment effects: ‘the profit-led economies are not profit-led for the reasons implied in Goodwin’s theory of the business cycle’ (ibid., pp. 519–20).

Blecker (2015) segregates wage-led/profit-led studies depending on if the demand equation is estimated as a reduced-form solution or if the individual components of demand are estimated via separate equations. The former ‘aggregative’ studies tend to find profit-led results. The latter ‘structural’ studies tend to find wage-led results. According to Blecker, the aggregative studies may be subject to an omitted variable bias due to the lack of control variables, whereas the structural studies could miss short-run dynamic interactions that lean in a profit-led direction:

On the positive side, the aggregative approach may capture interaction effects that the estimation of individual structural equations could miss. For example, if a rise in profitability stimulates investment and this in turn boosts consumption via the multiplier, this will be captured by an aggregative model but might not be captured by separate estimates of consumption and investment functions … Similarly, if a rise in the wage share boosts consumer demand and this in turn stimulates investment via accelerator effects, this would be incorporated in an aggregative model but might not be reflected in separate estimates of an investment function. (ibid., p. 10)

Seemingly, then, ‘perverse effects’ may not contradict the attribution of demand regime as profit led. It is not clear, however, what value can be attached to the label of profit led when the causal chains of the theoretical model are not those driving the results of the econometric model. Stockhammer and Michell (2016) take issue with the claim that a pro-cyclical profit share implies the empirical relevance of Goodwinian predator-prey mechanisms. They present a formal model where counter-clockwise cyclical patterns in wage share/output space are generated by financial fragility in the firm sector. The concerns with ‘perverse effects’ and ‘pseudo-Goodwin cycles’ suggest that the causal chains of the wage-led/profit-led framework may be missing important macro linkages. By design the studies typically overlook the contemporaneous effects of debt-financed expenditures on distribution. It may be more informative when qualifying a demand regime to identify the expenditure type and agent(s) undertaking them. After all, the expenditures that drive demand are not financed exclusively by current income, but also by the in- currence of liabilities including debt. Nor are expenditures originating within the firm sector (e.g. as payments for firm fixed investment, wages and dividends) the only source of firm revenues (i.e. there is external markets).

Before delving further into the issues, it is appropriate to underline what is at stake with the wage-led/profit-led dichotomy in terms of the policymaking implications. If modern economies are profit led, then neo-classical economists, while askew in their reasoning, are essentially right as to the appropriate agenda. This is because ‘wage increases as advocated by people on the Left cannot restore aggregate demand if it in fact is profit-led’ (Taylor, 2004, p. 305). Accordingly, higher growth will be obtained in
a profit-led economy by increasing labour market flexibility, eroding minimum wage conditions, weakening trade unions and lowering corporate income taxes. Additionally, judging by Taylor’s elucidation of the structuralist position, there is little constructive role for expansionary fiscal policy in an economy with a profit-led demand regime:

[A] ‘permanent’ outward shift in the Effective demand schedule because of expansionary [fiscal] policy will not have strong effects on employment and can even reduce medium-term growth. In the short run, economic stimulus looks good, as output jumps … investment rises … Over a longer stretch of time, however, unit labor costs [and] \( \psi \) [wage share] increase … Private investment could well decline in reaction to the high employment profit squeeze … At least in terms of stimulating output and growth, expansionary [fiscal] policy is now clearly counterproductive … The wage share does increase, but output and productivity growth could be substantially reduced. There are potential feedback effects that could worsen these problems. (ibid., p. 243) [emphasis in original]

3.1 Bivariate cyclical patterns 1954(II)–2009(II)

My approach to bivariate pattern data has similarities to Skott and Zipperer (2011). They present data for the US corporate sector and the following variables: employment rate \( e \), profit share \( \pi \), utilisation rate \( u \), ‘accumulation’ \( K^\wedge \) and output growth \( Y^\wedge \). Their main results are stated as:

• there is strong evidence of clockwise short-term cycles in three bivariate spaces: \((e, \pi), (e, u)\) and \((u, \pi)\).
• clockwise short-run cycles exist for \((e,Y^\wedge), (\pi,Y^\wedge)\) and \((u,Y^\wedge)\), too, while the orientations of the cycles in the \((e,K^\wedge), (\pi,K^\wedge)\) and \((u,K^\wedge)\) spaces are less consistent. (ibid., p. 56)

Clockwise cycles in the bivariate spaces \( e, \pi \) and \( u, \pi \) might seem to lend some support to Goodwinian predator-prey mechanisms. The less consistent patterns for \( K^\wedge \) (which the authors calculate from the US Federal Reserve’s industrial capacity index values) receive no clarification. That oversight is unusual given that divergent movements in the output shares of profits and firm fixed investment present a conundrum to models with the classical saving assumptions. To obtain insight into a flow of profits, it is more intuitive to use flow data for investment. Investment data is taken from the US Bureau of Economic Analysis’s (BEA) Integrated Macroeconomic Accounts (IMA). One complication is that noncorporate financial businesses are included in the IMA classification of financial businesses. However, as gross fixed investment by noncorporate financial businesses is likely to be relatively diminutive, its inclusion should be of negligible consequence.\(^7\)

Flow variables are considered here in gross terms in that a ‘more or less arbitrary estimate of capital stock depreciation is not subtracted from them’ (Barbosa-Filho et al., 2008, p. 625, fn. 2). Skott and Zipperer’s (2011) profit measure is net operating

\(^6\) Marglin (1988, p. 26) identifies a positive role in accumulation for ‘saving’ held in pension funds. Lower taxes on wealthy individuals, who have a high propensity to save in net financial terms, can also be considered as part of the policy agenda perceived appropriate for an economy with a profit-led demand regime.

\(^7\) Consumption of fixed capital by noncorporate financial businesses can be calculated by comparing data in BEA Table 1.14 to IMA data. Over 1954(II)–2009(II) the sector’s share in the consumption of fixed capital by non-financial corporations and financial businesses was on average 0.7% (with a standard deviation of 0.09); hence, the investment share of noncorporate financial businesses must be similarly modest.
surplus plus production taxes. My working definition of profits (C-Π) is gross operating surplus minus net interest payments. Similar patterns emerge regardless of what exact items are included in the profit measure. Skott and Zipperer present data as deviations from a Hodrick–Prescott filtered long-run trend. The bivariate patterns presented below report quarterly observations as deviations of the short-run trend from the long-run trend. The panels in Figure 2 show the shares of C-Π, H-GFI, H-SAE and C-GFI in corporate gross output (¥) on the vertical axis vis-à-vis the rate of civilian employment (e) on the horizontal axis.

Interpreting H-GFI is straightforward, as it is a flow component of demand. The H-SAE series requires a few qualifications. It is safe to assume consumer credit is spent mainly on consumption, generating revenues for domestic firms, and with some leakage abroad via imports. There are many reasons why the change in consumer credit will not be associated with expenditures on output in any one-for-one sense. There are limitations to using consumer credit data, which I acknowledge but still consider justifiable in order to give insight into a key driver of cyclical dynamics. In the panels for H-SAE a series for H-GFI is shown so that its independent role can also be distinguished. The sample covers 1954(II)–2009(II) and includes nine NBER-dated cycles from trough to trough. Note that data for the short cycle 1980(III)–1982(IV) is shown with a dashed line in the panels for the cycle 1982(IV)–1991(I). The panels maintain an eight-percentage-point range on the vertical axis to assist comparability over the cycles and between the flow variables. The horizontal axis maintains a consistent six-percentage-point range for e. Figure 3 repeats the process replacing e with u.10

The results support a ‘pseudo-Goodwin cycle’ interpretation of a pro-cyclical profit share in US data. There is strong evidence of consistent short-run clockwise cycles in the bivariate spaces: C-Π/¥_{t}, C-Π/¥_{st}, H-GFI/¥_{e}, H-GFI/¥_{st}, H-SAE/¥_{e} and H-SAE/¥_{st}. A notable exception to the general patterns is the cycle 1991(I)–2001(IV). That cycle ends with C-Π/¥ at its usual low value while H-GFI/¥ and H-SAE/¥ remain at elevated levels. Here it is necessary to take into account that the recent US housing market bubble was multi-cyclical, starting in the mid-1990s, and deflating from mid-2006. The ‘mild’ 2001 recession occurred with H-GFI/¥ and H-SAE/¥ at above trend levels whereas the ‘severe’ 2009 recession occurred with those variables at record lows. In the wake of the ‘subprime’ crisis, dwelling investment remained subdued, amidst talk of secular stagnation.

Focusing on C-GFI/¥, it is characteristically flat or falling in the initial phase of expansion when e and u are increasing rapidly, and only begins to rise in the mid- to later phases. There is little reason for firms to expand productive capacity until u has risen from the lows of the trough. The output shares of profits and firm fixed investment

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8 Profit data is taken from BEA Table 1.14. An analogous rationale for excluding net interest can be given for excluding production taxes: both are costs to the corporate sector. Possibly, taxes on corporate income should also be excluded, although the downward trend in corporate tax rates complicates comparability over time.

9 The short-run and long-run trends use a Hodrick–Prescott filter with respective smoothing parameters of 1 and 129,600. Trends are calculated over 1952(I)–2015(II). The starting point of 1952(I) is determined by the availability of IMA investment data. Because the constructed trends are sensitive to endpoints, I only report data spanning from 1954(II) to 2009(II), and which also correspond to the NBER-dated cyclical troughs.

10 Utilisation data are for the manufacturing sector, due to the shorter availability of the total industry series.
are out of sync, especially around troughs, contra the classical saving assumptions. Divergent movements in the output share of profits and firm fixed investment require an explanation in terms of shifts in other sources of demand.
3.2. ‘semi-autonomous' household expenditure led demand regime?

The finding that household-centred financial dynamics can generate pseudo-Goodwin cycles may not surprise some structuralists, for instance, Barbosa-Filho et al. (2008,
Fig. 3. Bivariate patterns for $C-II/Y$, $H-GFI/Y$, $H-SAE/Y$ and $C-GFI/Y$ (V-Axis) vis-à-vis $u$ (H-Axis).

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pp. 627–29, 641), who observe on the US household net borrowing (i.e. the inverse of the sector’s net lending):

Turning to cycles, it appears that, especially prior to 1980, household borrowing led the business cycle. Increasingly negative net borrowing (higher net lending) occurred during or just after recessions with borrowing going up (lending dropping off) ahead of the cyclical peak … The implication is that the covariance of the household net borrowing share and capacity utilization … is strongly positive … Residential investment is a key contributor to procyclical household net borrowing … The two series [profit share and household net borrowing share] do not overlap, but their general cyclical similarity is visually striking. [emphasis in original]

The authors recognise that such observations may conflict with other aspects of their analysis: ‘The last section discusses how this result [of a profit-led demand regime] may (or may not) square with our observation that demand is “household net borrowing led”’ (ibid., p. 630). That pledge was, however, left largely as a matter for future research. The observation of a ‘household net borrowing led’ demand regime does undermine the claim that models with no financial variables can explain stylised facts. Tavani et al. (2011) and Nikiforos and Foley (2012) focus on a non-linear ‘distributive curve’ as an explanation for the sluggish recovery from the ‘subprime’ crisis amidst a high profit share. Neither set of authors recognise that financial constraints and the collapse of household fixed investment may be factors. A more plausible story on the crisis can be told about the demand side. Large budget deficits restored the profit share while output growth was subdued because the ‘household net borrowing led’ motor was undermined by a balance sheet recession.

Figure 4 presents H-GFI, H-SAE, H-SAE’ and the US household net lending balance (H-ΔNFA) as shares of nominal output. If H-GFI was financed out of current income, there would not be an inverse relation between H-GFI and H-ΔNFA. But households can borrow, including from banks, which create purchasing power (such that lending to households requires no abstinence on the part of any other agents). H-GFI can have similar effects to debt-financed consumption insofar as it may entail a lower

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11 The correlation coefficient during 1954(II)–2009(II) for H-ΔNFA/Y vis-à-vis H-GFI/Y, H-SAE/Y and H-SAE’/Y is, respectively, −0.75, −0.62 and −0.76. Note that net lending data are that reported on the capital account.
Semi-autonomous household expenditures as the H-ΔNFA and higher sales for firms. The empirical importance of cyclical shifts in net lending balances presents an uncomfortable fact to models without financial variables. It can also be discerned in Figure 4 that the components of the H-SAE measure tend to rise and fall with some synchronicity. The causality is bi-directional, though many reasons can be proffered as to why it may run primarily from household investment to consumer credit. New housing requires furnishing and large expenditures of this type may be expected, especially by young homeowners, as well as by households moving from smaller rentals (or smaller owner-occupied homes) into larger owner-occupied residences. The use of accumulated financial resources to pay the down payment will also stretch the finances of mortgagees. Mortgage servicing will also generally place a drain on income greater than rent or board (and so too for homeowners upgrading their housing choices). Homeownership may therefore generate, in and of itself, an additional need for credit in order to meet expenses and to maintain consumption levels at socially desired ‘norms’. A positive effect of residential investment on housing prices is also likely to induce ‘wealth effect’ debt-financed consumption expenditures by existing homeowners (who borrow collateralised or uncollateralised).

Barbosa-Filho and Taylor (2006, p. 407) remark on US data that ‘Investment $i$, also varied pro-cyclically’. It is difficult to interpret the findings of econometric models that include household investment and inventories in ‘investment’ when those variables are neither explicitly represented, nor have an implicit role, in the logic of the theoretical model. What is lost when owner-occupied housing and non-profit institutions are included in the business sector is the insight that household investment has a contemporaneous positive effect on corporate profits (and induces C-GFI). Table 1 reports the correlation coefficient for the real growth rates of selected flow variables vis-à-vis that of profits (with $^\wedge$ denoting the growth rate of variables in inflation-adjusted terms).

Table 1. Correlation coefficient of selected variables, 1953(I)–2009(II)

<table>
<thead>
<tr>
<th>Real Growth Rate vis-à-vis C-Π$^\wedge$</th>
<th>Output Share vis-à-vis Y$^\wedge$</th>
</tr>
</thead>
<tbody>
<tr>
<td>2  1  0  -1  -2</td>
<td>2  1  0  -1  -2</td>
</tr>
<tr>
<td>C-Π</td>
<td>0.54 0.56 0.46 0.19 -0.09</td>
</tr>
<tr>
<td>C-GFI</td>
<td>-0.10 0.13 0.39 0.58 0.66</td>
</tr>
<tr>
<td>H-GFI</td>
<td>0.62 0.61 0.49 0.26 0.02</td>
</tr>
<tr>
<td>H-SAE</td>
<td>0.60 0.69 0.62 0.38 0.09</td>
</tr>
<tr>
<td>PCE</td>
<td>-0.24 -0.48 -0.65 -0.55 -0.35</td>
</tr>
<tr>
<td>PCE—ACC</td>
<td>-0.44 -0.68 -0.77 -0.58 -0.29</td>
</tr>
</tbody>
</table>

$^\wedge$ Annualised quarter over previous year quarter growth rates in real terms. Source: St. Louis Federal Reserve, FRED. US BEA, NIPA, Tables 1.1.5, 1.1.6 and 1.14.

12 To the extent that workers finance dwelling investment (and at least the down payment), by drawing on financial resources amassed in prior periods by saving (in net financial terms) out of wages, those injections will have similar macro effects to debt-financed expenditures (i.e. the payment for dwellings will reduce the net lending balance of worker households by the extent to which revenues for firms are generated).

13 Including the household sector in the business sector is justifiable only if: (1) household investment is minor; (2) there are no systematic differences in household and business investment over the business cycle; and (3) the investment decisions of households and businesses are similarly motivated. On all points the answer is no.

14 Nominal flow variables are adjusted for inflation through calculating a deflator from the US Bureau of Economic Analysis’s Table 1.1.5 for nominal output and Table 1.1.6 for real output.
It is noteworthy that a significant contemporaneous relation exists between C-Π and H-GFI (without consumer credit data). That the significance of personal consumption expenditures (PCE) with C-Π is much lower when the flow of consumer credit (ΔCC) is subtracted points to the importance of debt-financed consumption to corporate profits. Looking at the correlation coefficient for the output shares of the variables to growth rate of real output $Y^\gamma$, the data indicate that C-Π, H-GFI and H-SAE lead output growth, whereas C-GFI lags output growth (and is instead induced by the level of demand).

4. Cyclical turning points: profit squeeze or realisation failure?

Weisskopf (1979), in his study into five US business cycles from 1949(IV) to 1975(I), sought to test three variants of Marxian theory: rising organic composition of capital, rising strength of labour and realisation failure. He segmented the cycle into three phases. Phase A is the early expansion from the end of the trough to the peak in the profit rate. Phase B is the late expansion after the peak in the profit rate to the peak level of real output. Phase C is the contraction. Weisskopf found that rises (falls) in the profit rate during Phase A (Phase C) were due to increases (decreases) in $\pi$ and $u$. The fall in the profit rate during Phase B was attributable mainly to decreases in $\pi$.

The most critical task of Marxian crisis theory in a cyclical context is clearly to explain the decline in the rate of profit during the late expansion phase B, which precedes the actual downturn of the economy in the contraction phase C … In each of the postwar business cycles, most—if not all—of the phase B decline in $p$ [profit rate] can be accounted for by a decline in $\sigma_u$ [profit share]. (ibid., p. 353)

Weisskopf then calculates a ‘true’ wage share to account for the effects on overhead labour. With the adjusted wage share measure, it turns out that changes in the profit rate during Phase A are driven primarily by movements in $u$, and not by a relative decrease in the bargaining strength of labour. Blecker (2015, p. 14, fn. 35) offers these remarks on Weisskopf’s study:

Weisskopf showed that, in all five US business cycles between 1949 and 1975, the profit rate always peaked prior to the peak of output, and that during this phase of each cycle (i.e., between the peak of profits and the peak of output) the reduction in the profit rate was driven mainly by reductions in the profit share ... This evidence supported the ‘profit squeeze’ theories of cyclical crises that were popular in the 1970s, and which are supported by the more recent empirical findings of Barbosa-Filho and Taylor (2006). However, the most recent business cycle which peaked in 2007 and crashed in the Great Recession of 2008–9 may have been an exceptional case in which debt accumulation and asset prices dominated (see Stockhammer and Wildauer 2015). [emphasis in original]

A contention of this paper is that household-centred financial dynamics/semi-autonomous household expenditures have played an important driving role in US business cycles throughout the post-WWII era. Panel A in Figure 5 presents movements in the profit rate ($r$) decomposed into three phases,¹⁵ as per Weisskopf (1979),¹⁶ and the real

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¹⁵ The profit rate is computed using the output share of corporate profits and $u$. The calculation omits the capital to capacity ratio (which many authors assume is equal to one). Weisskopf (1979) showed that the organic composition of capital did not play a large role in postwar US cycles. Note also that the peak in $r$ coincides with that for C-Π/Y in all cycles except 1982(IV)–1991(I).

¹⁶ Phase A is the period after the trough to the peak in $r$. Phase B is the period after that to the NBER-dated cyclical peak. Phase C is the period after that to the NBER-dated cyclical trough. Note that there is no Phase B in the short cycle 1980(III)–1982(IV) because the peak in $r$ coincides with the NBER-dated cyclical peak.
growth rate of corporate profits. Panel B shows the real growth rates of C-GFI, H-GFI and H-SAE. As a general observation, cycles in H-GFI^ and H-SAE^ are of greater amplitude, and precede cycles in C-GFI^.

Of interest is that C-Π^, H-GFI^ and H-SAE^ all collapse in Phase B, relative to Phase A, whereas C-GFI^ is stronger in Phase B than Phase A. The impression that is conveyed by the averages in Table 2 is for the most part representative of the individual cycles. Starting with the percentage-point change in $u$ over a phase, it is uniformly positive in Phase A, usually negative in Phase B and uniformly negative in Phase C. Real output growth is higher in Phase A than Phase B, except the cycles IV and VIII, on average by 0.8 percentage points. There are systematic patterns in respect to C-Π^. It is uniformly higher in Phase A than Phase B. In fact, the real growth rate of corporate profits collapses in Phase B, on average by –9.3 percentage points relative to Phase A, when looking at the average for the mean in each of the cycles with a Phase B. Alternatively, if the average is weighted by the number of quarters in each of the cycles with a Phase B, then by –7.9 percentage points. Importantly, whereas C-Π^ is uniformly higher in Phase A than Phase B, it is the opposite for C-GFI^.

Like C-Π^, H-GFI^ and H-SAE^ are significantly higher in Phase A than in Phase B, with the only exception cycle VIII. That H-GFI^ and H-SAE^ collapse in Phase B relative to Phase A, and then even more so in Phase C, provides support to the external

\[ u \]

*Data smoothed by a Hodrick–Prescott filter with a parameter of 1.

Source: St. Louis Federal Reserve, FRED. US BEA, NIPA, Tables 1.1.5, 1.1.6 and 1.14.
Table 2. Profit rate phases of US postwar business cycles

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†Excludes cycle VI with no Phase B. * Data are private non-residential fixed investment for C-GFI and private residential fixed investment for H-GFI.

Source: St. Louis Federal Reserve, FRED. US BEA, NIPA, Tables 1.1.5, 1.1.6 and 1.14.
Semi-autonomous household expenditures as the markets/realisation failure explanation of US post-WWII business cycles vis-à-vis the Goodwinian profit squeeze theory.

Table 2 also reports data for the cycle 1949(IV)–1954(II). Quarterly IMA data begin in 1952(I). Consequently, the data reported are private non-residential fixed investment (instead of C-GFI) and private residential fixed investment (instead of H-GFI). In this cycle the average annualised real growth rate of the H-SAE measure (which in this cycle is private residential fixed investment plus the change in consumer credit) is 42.1% in Phase A (4 quarters), 1.7% in Phase B (10 quarters) and −16.9% in Phase C (4 quarters). The cycle 1949(IV)–1954(II) also supports the hypothesis that household-centred financed dynamics have always mattered to US post-WWII business cycles.

5. Pseudo-Goodwin cycles

It is apt to recall the key mechanisms of the profit squeeze models. The canonical Goodwin cycle arises out of the interaction between a reserve army function and a profit squeeze/profit-led demand function. The reserve army function has a causal chain: increase in $e$ → increase in the real wage rate → higher wage share. The profit-led demand function has a causal chain: lower $\pi$ → lower capacity investment → lower output. Accordingly, C-GFI should lead, instead of lag output. The alternative hypothesis developed in this paper is that it is deficient demand—through the impetus of downward shifts in H-GFI and H-SAE—which depresses profitability and triggers firms to curb production and $u$ (along with $e$) and then fixed capital accumulation with a lag.19

In Skott and Zipperer’s (2012) model, the turning point in the limit cycle pivots on a non-linear negative relation between $e$ and accumulation (through a so-called ‘output expansion function’): ‘we assume that high employment rates (associated with strong workers and a poor business climate) put a damper on accumulation’ (ibid, p. 286). To support that assumption, the authors report a strong negative effect from high values of $e$ on US output growth: ‘using the mean of $E$ [deviation of a non-linear indicator of labour market conditions from its long-term Hodrick–Prescott filtered trend] in the 1953–2001 sample, this effects translates into a 6 percentage point output growth loss when ... $e$ increases from 94.5 percent to 96.4 percent’ (ibid., p. 297). It would be surprising if matters were the other way round; obviously, the high values of $e$ obtained during cyclical peaks are followed by low values of $e$ and a collapse in output growth during recessions.

The phase diagram of the Goodwin model has the output level ($e$ or $u$) peaking before the wage share. Panel A in Figure 6 presents filtered deviations in the short-run to long-run trend for the output share of C-GFI and real output growth. In instances the patterns resemble those of the Goodwin model phase diagram except that it is speculative buyers, who are crowded in by housing price appreciation during booms, and wait for a bottom during busts. Note also that the macro effects of existing homes purchases are similar to margin lending (i.e. leveraged acquisitions that inflate the value of the quasi-financial asset traded while contributing little to output growth).

19 A few remarks are required on inventories. The output share of non-financial corporate inventories tends to be decreasing down to the trough (especially from four quarters out). Inventory accumulation usually turns negative at around one to two quarters before troughs. Concurrent falls in inventory accumulation and $u$ indicate that firms are seeking to curb the costs that would otherwise be incurred through higher stocks of undesired inventories, but in a self-defeating way, by giving impetus to the downswing via lower wages and $e$.
now C-GFI/Y which appears to be crowding out Y^\alpha. What typically happens in the build-up to recessions is that C-GFI remains comparatively robust until late in the proceedings.\textsuperscript{20} Firms seem to view the high values for \( e \) (as well as for \( u \)) as an incentive to expand productive capacity given optimism for future sales growth. Repeating the

\textsuperscript{20} Since 1949(IV) the NBER-dated cyclical peaks have occurred on average at four quarters before the trough (with a maximum of six quarters for the cycle 2001(IV)–2009(II)). At a horizon of six to three quarters before the trough, C-\Pi^\alpha tends to be weak, whereas C-GFI^\alpha is relatively robust, growing above C-\Pi^\alpha and Y^\alpha.
Semi-autonomous household expenditures as the process for \( C-\Pi/Y \) and \( H-SAE/Y \) \( \text{vis-à-vis} Y^\wedge \), in Panel B and Panel C in Figure 6, we find a more synchronous positive relation with output growth. Panel D substitutes \( e \) for \( Y^\wedge \). The Goodwinian phase diagram patterns appear because the axis for \( H-SAE/Y \) is inverted. An interpretation would be that the relative diminishment of Luxemburg-type external markets acts as a predator on \( e \).

The findings of this paper lend support to Stockhammer and Michell’s (2016) intuition on the possibility of pseudo-Goodwin cycles. Von Arnim and Barrales (2015, p. 363, fn. 14) offer that the term ‘profit-led’ ‘implies only the ceteris paribus statement that “a higher profit share leads to expansion of economic activity in the goods market”’. Yet, in their Goodwinian model (and many others), it is firm fixed investment that leads and turns the business cycle.\(^{21}\) If a pro-cyclical profit share is not driven primarily by firm fixed investment, then it is surely misleading to report evidence in data of ‘Goodwin-type profit squeeze cycles’ and the inferred negative suppositions on wages.

A pro-cyclical profit share is commonly interpreted as providing evidence of a ‘profit-led’ demand regime and that, in turn, as supporting the Marxian conclusion that higher output growth requires abstinence by workers (via lower real wages). The flipside to the ‘profit squeeze’ theory is that a ‘wage squeeze’ is good for growth. Clearly, however, it is not safe to assume that all the relevant macro dynamics occur in a vacuum devoid of financial dynamics. When cyclical shifts in net lending balances are recognised, including the role of counter-cyclical fiscal policy in sustaining demand and profits, the US economy is much more Keynesian than it is Marxian. But it is in a context of abstracting from the financial sphere that many of the profit squeeze models are cast.

A focus on household-centred financial dynamics leads to questions about debt sustainability. Some remarks are needed here to clarify the secular and cyclical dimensions of ‘semi-autonomous’ household expenditures. In respect to the former, the durability of post-WWII US business cycles up until the crisis was tied up with increasing rates of homeownership, and an expansion in credit access to workers. The dynamics responsible for the secular stability of growth processes are also unstable in cyclical dimensions. It is that contrast to which sense can be attached to the notion of the [secular] stability and [cyclical] instability of Luxemburg-type external markets. That statement is also conditional because the dynamics generating the secular stability of accumulation processes are not independent from the financial structure or beyond relative exhaustion.\(^{22}\)

6. Conclusion

Semi-autonomous household expenditures, by the worker class in particular, have functioned as an important growth motor of post-WWII US business cycles. A lesson of the recent crisis is that worker debt can mask underlying structural problems but not without limit.\(^{23}\) Rebuilding institutions conducive to wage growth in line with productivity

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\(^{22}\) There is a limit to rising homeownership rates. The negative effects on demand from rising income and wealth inequalities after 1980 were masked by workers taking on more debt and by the cycle-over-cycle downward trend in monetary policy. Lower nominal interest rates as growth motor reached its limit in 2008.

\(^{23}\) In the Eurozone the crisis also exposed structural flaws in the design of the currency union (Lavoie, 2015).
growth, and a broader distribution of income, may be prerequisites for enlarged repro-
duction. Matters are simpler in the Goodwinian storyline: depress wages and a robust
firm-centred investment-led recovery will come. Apparently, if an economy has a profit-
led demand regime, then expansionary fiscal policy may hinder instead of promote
output growth and accumulation. The main contentions of this paper have been 3-fold.

First, it has been argued that empirical studies into demand regimes usually emphasise
the lagged effects of changes in distribution on demand, at a neglect of the contemporane-
ous effects of demand on distribution. Such contemporaneous ‘demand effects’ aris-
ing from fluctuations in household expenditures financed by debt (and, more broadly,
by dis-saving in net financial terms) fall outside the dichotomy of wage-led/profit-led
demand regimes. Second, the paper has sought to establish a leading role for house-
hold-centred financial dynamics as a generalised feature of US business cycles in the
post-WWII era, rather than an exceptional case limited to the decade before the Great
Recession. Third, the paper has criticised modelling approaches which claim consist-
ency with stylised cyclical patterns, but ignore crucial aspects of the macroeconomy. The
finding that household-centred financial dynamics can generate pseudo-Goodwin cycles
provides reason to query the simple logic that an economy with a pro-cyclical profit
share will grow faster by adopting regressive labour and fiscal policies. Short-term observ-
ations on the effects of lagged changes in functional distribution on the level of effective
demand cannot give insight into how secular trends in debt and distribution (including
managerial compensation as quasi-profits) may affect the sustainability of growth pro-
cesses. Wage repression may merely give impetus to the development of unsustainable
worker debt dynamics which resolve eventually in crisis and exacerbate stagnation.

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