

An Economic Story: Analysis of Howard J. Sherman's Nutcracker Theory of Profit Squeeze and Its Ties to Post-Keynesian Economics

Summary:

Book ended by two short prose pieces, this paper analyzes the nutcracker theory of profit squeeze. This theory, developed by Howard J. Sherman, combines demand and supply-side factors in its description of business cycles. It will be argued that the story Sherman tells is consistent with Post-Keynesian economics. There is an examination of the basic relationships and assumptions of the theory, and then there is a presentation of the mechanism employed by Sherman. Next, using a simple Post-Keynesian model, it will be demonstrated that Sherman's story is commensurable with standard Post-Keynesian economics. Finally, there will be an evaluation of the nutcracker theory, a comparison with other Marxian profit squeeze theories, and an analysis of the variables omitted.

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In recent weeks, the sun had begun rising earlier and the afternoon temperatures had started climbing into the twenties. Summer was coming and pushing spring into oblivion. In a quaint house, on the corner of a quiet street, the bright morning sun broke through the uncovered portion of the bedroom window, and it warmed the weary face of the neoclassical economist. It woke him. He looked at his clock and it read 6:59 am. His alarm normally rang at 7:00, so he could be at the University by 8:30. One minute after he woke, as per usual at 7:00, the neoclassical economist's radio started playing the CBC morning news. It was time to get up.

While sitting up, in his soft queen-sized bed, the neoclassical economist listened to the newscast. A female voice, with a British accent, recited the lead story. The neoclassical economist had heard the tragic story the night before, though. Yesterday, the British lady told, was the single worst day for modern workers. More employees had received pink slips, on April 27, 2009, than on any previous day. Business leaders said the lay-offs were due to rising costs and the need to increase productivity. Most of the workers said it was devastating and they had no idea what to do now.

The neoclassical economist sighed. He knew that later that morning, in class, he was going to explain that it was an external shock, which led to these lay offs and to the future ones. It was an external shock that jolted the economy from its normal growth path. These lay-offs, these measures, were unfortunate, but necessary. The economy had been in a prolonged slump, after the boom of 2005 - 2006. He would have to explain that shocks like the large snow storm in February and the sudden rise in international oil prices had forced the economy downward. The economy does not fluctuate endogenously and it was due to external shocks, only. Right? He knew that he would have to explain this to that one annoying student. That student, who always sat on the back left, seldom believed the neoclassical economist's explanations and the neoclassical economist was beginning, just lately, to question these explanations and theories himself.

On the other side of town, the heterodox economist was running up a steep hill. He ran every Monday, Wednesday, and Friday, to stay in shape and, occasionally, he ran in road races. It was almost warm enough to run without a jacket. Summer was coming.

He was listening to his walkman, as he ran, and he was listening to the 7:00 am CBC newscast. Their top story was the previous day's job losses. The heterodox economist slowed his speed a touch, but he did not stop running. He sighed, too. He knew this downturn was inevitable. After the boom, of a few years earlier, the heterodox economists knew that an endogenous downturn would follow and he knew that the government's championing of self-regulated markets and introduction of neoclassical policies would only exacerbate the problems. He knew this, yet no one listened to him. The heterodox economist increased his pace again, until he was running faster than before, and he kept running.

Howard J. Sherman is a storyteller. His story has characters and a plot and his story tells the path of the economy and the squeezing and the growth of profits, through its recessions and booms; its lulls and climaxes. In the course of his tale, Sherman presents his characters and gives each a history and a psychosis. These characters are economic relationships, based on previous theories and previous empirical evidence. They include supply-side relationships and theories, such as the reserve army of labour and increasing raw material costs. However, they also include demand-side characters and elements, from a new fusion of Marxian underconsumption theories and the Post-Keynesian's lack of effective demand, or profit realization, problems, with capacity utilization considerations thrown in for good measure (Lavoie and Seccareccia 2001). Sherman, then, gives these characters a plot and events, an economic mechanism. As these characters, these relationships, live through these events, the story of the economy produces an inevitable outcome. The climax is predictable. This inevitability is that the economy is endogenously cyclical. There will be booms, followed by slumps, and, then, there will be booms again.

However, as with every story, even the great ones, there is one vital requirement that separates its acceptance, from the tales of pulp and science fiction. Moreover, this requirement is more important if the story is situated in reality and not in the contrived realm of fantasy. This requirement is the suspension of disbelief. Is the story plausible? Can we accept a few basic assumptions? Or is it just an interesting tale of spaceships and dragons? Sherman tells a story. He asks us to believe his characters; he asks us to

believe his plot; he asks us to suspend our disbelief. But is his story credible? Can we suspend our disbelief?

Introduction

Cyclical crisis models of the economy or, alternatively, profit-squeeze analysis have been, almost entirely, dominated by Marxian writers. These authors have a very large interest - some might say obsession - in describing and modelling business cycles and the large real swings of the economy, while their brethren in other heterodox schools have had relatively little interest in these discussions. These Marxian writers believe cycles are inevitable and endogenous to capitalist economies and this endogeneity is a result of unavoidable class conflicts, between workers and capitalists. “To make profit, the capitalist must first exploit the worker, holding cost to a minimum, then sell the product to realize the profit embodied in it” (Sherman 2002: p. 179). Further, regular and systematic fluctuations in the profit rate and expected profitability lie at the heart of all these models (Goldstein 1999). This is completely contrary to the neo-classical business cycle theories, which see the only deviations from the smooth growth path as a result of various shocks to the economy, or to the monetarist’s beliefs, who take their business cycle explanations to its *reductio ad absurdum* (Sherman 1987). However, the ties that bind in the heterodox schools are much tighter and a Post-Keynesian framework does not have the pitfalls of the neoclassical explanation. Post-Keynesian equations can easily be adapted to explain the cycles in the economy. Also, even though almost every theory places some aspect of profits and, therein, investment at the center of their discussions, there is a debate, or conflict, between several explanations for profit squeeze and the business cycle.

On the one hand, there are the steadfast Marxians and, on the other, there is a demand-side and supply-side synthesis. There are various other explanations and theories, but currently these are the two main branches. In the former, lie mainly stalwarts of supply-side factors, such as the rising strength of labour (RSL). Their argument is that during a boom the unemployment rate decreases, or, instead, the reserve army of labour diminishes. Therefore, labour gains power and, due to the necessary conflict between labour and capitalists, they put upward pressure on wages thus

squeezing profits from the cost side only. There are several versions of this argument, for example Laibman (1992) and Goldstein (1996, 1999), but the general argument is basically the same. In the latter, or the so-called synthesis, there is a blending of Marxian ideas and those from the Post-Keynesians. From this amalgamation, a theory of a dual sided profit squeeze emerges. There is a cost side squeeze not from labour factors, but from rising raw material costs, and there is a realization, or lack of effective demand, squeeze, too. This double sided squeeze, incorporating both revenues and costs, has been examined by several economists, notably Weisskopf (1979)¹ and Van Lear (1999). However, the main player, in the double sided profit squeeze theory, is Howard J. Sherman and he has denoted his version of the profit squeeze theory: the nutcracker theory of profit squeeze. This original name is given, apparently, to avoid the “disputed rhetoric” surrounding the standard use of the phrase “profit squeeze” (Sherman 1997). It is the nutcracker theory of profit squeeze that will be examined in this paper and, it is argued, that this theory is easily shown within a Post-Keynesian model, too.

Sherman (1991) notes three possible scenarios leading to a dual sided profit squeeze: first, revenues remain constant while costs rise; second, costs remain constant or rise or fall, however revenues fall faster than costs; and, third, revenues rise but costs rise more quickly. “The hypothesis is that profits are limited both in the production of profits (through the purchase and use of inputs in the production process) and in the realization of profits (through the sale of the outputs)” (Sherman 1991: p. 248). The way this hypothesis or these scenarios arise, with the economic relationships and the mechanism or lag structure, in Sherman’s nutcracker theory of profit squeeze, is going to be analysed below. In the first part of the paper, the economic relationships and assumptions used in this theory will be presented and examined. It will become evident that there is a large convergence between Marxian and Post-Keynesian assumptions in this section. Next, the mechanism, which forces the profit squeeze, and the downturn in the economy, will be presented. Third, it will be shown that a simple Post-Keynesian framework, including effective demand and a simple supply-side determination of profits, will produce the

¹ Weisskopf (1979) actually found that much more evidence supports the RSL theory, however he states this was due to the difficulties in separating and finding demand, or realization, data. Also, he thoroughly acknowledges the role that demand must play in a profit squeeze, even though he had empirical problems establishing it. Therefore, I have included him with the double sided profit squeeze group.

same outcome as Sherman's nutcracker theory. Fourth, there will be an evaluation of this model, a comparison with other mainly Marxian theories, and a consideration of some of the important variables the model omits. In the conclusion, the theory will be accepted as a plausible yet abstracted story, for the cycles of capitalist production, but there are several conditions. The model is still young and it is necessary to incorporate some of the omitted variables, even at a descriptive level. When this is complete, the theory can provide a viable option for policy recommendations, concerning government's role in the economy. Further, it is from a starting point such as this that Marxians and Post-Keynesians could attempt to come together and present more comprehensive models of cycles, distribution, and growth.

Economic Relationships and a Story's Characters

Since the theory incorporates both demand-side and supply-side factors, it starts at equilibrium and uses the Keynesian national accounting identities. The aggregate demand identity is:

$$Y_t = C_t + I_t$$

where Y is national income, C is consumption demand, and I is investment demand. This can also be written:

$$Y_t = W_t + P_t$$

where W is labour costs in national income and P is property income or profits in national income. The first identity will be used below to determine the effective demand equation and the second identity will be used more by Sherman. It should be pointed out, also, that any equilibrium is only a momentary phenomenon, because of the ability for aggregate demand to adjust very rapidly, in contrast to aggregate supply, which adjusts slowly due to a lag in physical production. It is assumed that supply and demand equate over a short, but not explicit, time frame (Sherman 1991). In addition, supply normally lags behind demand. In other words, the economy is demand-led. This is a somewhat contentious point between Marxians, but it is natural to the Post-Keynesians and it is essential for the dynamics of the model. Further, distribution of income plays a vital role in Sherman's model, so W/Y is the labour share of income and P/Y is the profit share of income.

Consumption Function

The consumption function used in this model highlights the tight link between Post-Keynesians and Marxians. While it is explicitly stated that it is “developed in the underconsumptionist context” (Sherman 1991: p. 253), these views are very similar to those of effective demand. In fact, the functional form employed by Sherman is a Kaleckian style consumption function and, in general, “the writings of Kalecki are common ground for both traditions” (Lavoie and Seccareccia 2001: p. 1). Moreover, for Sherman, consumer demand is not solely influenced by national income, but by the labour share of national income, too. Therefore, as labour share increases, so, too, do the average and marginal propensities to consume. In the specific functional form, it is assumed, for simplicity, that all wage income is consumed and a portion of profit income is consumed. This specific consumption function will be assumed in the effective demand equation below. The relationships and functions are, generally:

$$\begin{aligned} C &= f(Y, W/Y) ; \\ dC/dY &> 0, dC/d(W/Y) > 0 \end{aligned}$$

Specifically:

$$C = \alpha P_{t-1} + W_{t-1} ; 0 < \alpha < 1$$

These functions have been frequently used by both Post-Keynesians and Underconsumptionist Marxians.

Investment Function

The investment function is the weakest link in Sherman’s chain. Sherman states that “the theory assumes that new investment is a function of the change in the rate of profit” (Sherman 1991: p. 253). Further, Sherman acknowledges that the change in profits, not merely profit rate, probably has an influence too, but that the effects are hard to separate. While this is likely true, the change in the rate of profit, or even in profits themselves, definitely is not the only influence on investment. The investment function is the place where Post-Keynesian influence would be most beneficial. However, Lavoie (1992: p. 231) states “investment in the short run is based on past historical considerations as well as on ‘animal spirits’, neither of which can easily be modelled in a simple short-period model of effective demand.”

Unfortunately, both Sherman and the Post-Keynesian model presented below are weakened significantly, in an attempt at simplicity. They fail to successfully model the role of expectations, Keynes' animal spirits, the price of investment, or the marginal efficiency of capital. Largely, the theory completely ignores the financial system, which unarguably has a massive influence on all aspects of the economy, including real production. A more comprehensive investment function could greatly enhance the explanatory value of the nutcracker theory, especially because it is the heart of the model. For example, incorporating Minsky's (1975) financial instability hypothesis, or even a substantial discussion on various investment functions, could offer an explanation of the flight of investment. It must be recognized that financial factors, outside a real production, can contribute to a profit squeeze. In other words, investment operates with some independence, in that it is not entirely dependent on profitability. A discussion on the investment function is beyond the scope of this paper, however, so a very simple version will be assumed below. It, nevertheless, plays an important role and cannot be ignored.

This being said, it is likely the case that investment demand is higher, when profit rates are rising and this element is essential to the model. However, various cases of the model could be developed using various other functions. The functions used by Sherman are, generally:

$$\begin{aligned} I &= f(\Pi) ; \\ dI/d\Pi &> 0 \end{aligned}$$

Specifically:

$$I_t = \gamma(\Pi_{t-1} - \Pi_{t-2})$$

where $\Pi = P/K$, or the profit rate on capital and γ is some parameter.

Profit function

In the nutcracker theory, the profit function needs to reflect both the cost and the revenue variables, or both supply and demand sides. There will be two separate profit functions developed here. The first one is a general relationship used by Sherman, the second is the standard supply-side determination of profits that will be useful in the Post-Keynesian model. It will be shown that, in the end, both versions are based on the same

assumptions and, therefore, produce the same results. Sherman presents a profit function very similar to the Weisskopf (1979) decomposition:

$$\Pi = f(u, W/Y, p_m/p) ;$$
$$d\Pi/du > 0, d\Pi/d(W/Y) < 0, d\Pi/d(p_m/p) < 0$$

where u is capacity utilization and p_m/p is the price ratio of raw materials to finished goods.

For Sherman and the Post-Keynesian function below, there is a vertical summation of the economy, with the exclusion of the primary sector. The ratio of raw material prices to finished good prices play an important role, in Sherman's story, and follows from the common assumption made by Kalecki that the primary sector does not behave the same way as the industrial sector, i.e. in pricing and excess capacity (Lavoie and Seccareccia 2001). This behavior and the relationship to profits will be discussed further below.

In the nutcracker theory, revenues and aggregate demand are reflected in the capacity utilization variable. This variable is assumed to be positively related to the rate of profit and profit share. Post-Keynesians often make this assumption, too. Profits increase with the increase in capacity utilization and productivity. To include microeconomic foundations, Post-Keynesian constant marginal cost curves and mark-up, or cost-plus, pricing, and a distinction between fixed and variable labour is easily incorporated into this element of the theory. Suffice to say, until full capacity is reached, decreases in excess capacity, with constant marginal costs, translate into an increase in revenues. This also implies that, as capacity increases, the average productivity of labour also increases. This explanation of the demand side is consistent with underconsumptionist Marxian theories.

However, while increasing labour inputs increases aggregate demand, there is another side to these labour inputs, the supply-side. Increasing labour means increasing costs. Due to this consequence, there is a negative relationship between labour share and profit rates and this reflects and is consistent with the reserve army of labour theories.

These two relationships highlight the dual role of labour in profit determination. On the one hand, if labour receives higher wages, they are able to consume more. On the other side, higher wages means higher costs. "It is clear that a change in wages has two

separate and opposed effects on aggregate profits: the demand effect versus the cost effect” (Sherman 1991: p. 254).

The ratio of raw material prices to finished good prices is negatively related to the profit rate, too. If raw material prices rise faster than finished good prices, then profits will be squeezed. Conversely, if finished goods prices start rising more quickly than raw materials, in an expansion, the profit rate will increase. This relationship is complicated by inflationary considerations, specifically surrounding the lags and timing of price increases. There is a tendency for inflation, at the top of a peak, to be constrained by neo-classical monetary policies and these policies can adversely affect profit rates, because of the order of decisions and lags, i.e. raw materials are purchased before the production period. Therefore, inflation suppressing policies can adversely affect finished good prices and can initiate or exacerbate a downturn and the neo-classical belief that low inflation rates are beneficial to business and the economy is inaccurate.

Supply-Side Profit Function for the Post-Keynesian Model

For a vertical summation of the economy, with the exclusion of the primary sector, profits will be determined as such:

$$p\Pi = q - C$$

$$\text{where: } q = pyL, \text{ and } C = wL + p_m M$$

$$\text{rewriting: } \Pi = yL - (w/p)L - (p_m/p)M \quad (1)$$

$$y = f(u) ; dy/du > 0, d^2y/du^2 < 0$$

$$L = L_f + L_v$$

where y is the productivity of labour, w is wages, M is raw materials, and L is labour decomposed into fixed and variable components.

These assumptions come from Kaleckian roots and are standard fare for Post-Keynesians. They are developed in Lavoie (1992) and elsewhere. The productivity function is increasing with capacity utilization reflecting the increase in variable labour. Below, however, in the effective demand equation, for simplicity, this assumption is going to be taken as given and labour is going to be considered homogeneous. One could easily incorporate a more realistic effective demand equation, but, with this assumption in place, it is not necessary. These relationships exhibit constant marginal costs and the microeconomic foundations described above.

Distribution Function

The distribution function, integral to Sherman's story, is represented by the labour share of national income. It, too, reflects both supply and demand side factors. Labour share is negatively related to capacity utilization, because as excess capacity decreases labour productivity rises faster than wages. This is fundamental assumption of the nutcracker theory. Also, labour share is negatively related to unemployment, from the reserve army of labour theory.

$$W/Y = f(u, U) ;$$

$$d(W/Y)/du < 0 , d(W/Y)/dU < 0$$

where U is unemployment.

Effective Demand Function

The effective demand function is just the simple Post-Keynesian function derived from equating aggregate supply to aggregate demand.

$$L^{eff} = a/(y - (w/p)) \quad (2)$$

or this can also be written

$$(w/p) = (L - a)/y \quad (3)$$

$$\text{Further, under equilibrium conditions } a = \Pi \quad (4)$$

where a is autonomous expenditure. "Equation [(4)] is a standard result in models of this type, producing the famous dictum that 'capitalists earn what they spend, and workers spend what they earn'" (Dalziel and Lavoie 2002: p. 6).

Unemployment Function

In accordance with the reserve army of labour theory, the unemployment function is negatively related to output.

$$U = f(Y) ;$$

$$dU/dY < 0$$

Capacity Utilization Function

The capacity utilization function is a positive function of output and it related to labour share of national income above.

$$u = f(Y) ;$$

$$du/dY > 0$$

Capital Cost Function

Since World War II, inflation has persisted in developed countries and, therefore, these considerations need to be taken into account for this relationship. However, empirical investigations (Sherman 1975, Weisskopf 1979) have found:

In the period since World War II, there have been two changes: (1) The price of plant and equipment has moved roughly parallel to that of consumer goods, but raw material prices still move differently; and (2) there has been inflation even during recessions. What is still the case, however, in the cycles of the 1970s and 1980s is that the ratio of raw material prices to consumer prices has always risen in expansion and fallen in contractions. (Sherman 1991: p.256)

This is the Kaleckian assumption from above and it seems reasonable, as it is more difficult to expand capacity in the primary sector than it is in others. This is due to seasonal considerations and financial outlays required to discover and produce new sources of raw materials. Thus, the ratio of raw material to finished goods prices is affected by increased demand, due to an increase in income. The function takes the form:

$$\mathbf{p_m/p = f(Y) ;}$$
$$\mathbf{d(p_m/p)/dY > 0}$$

These are the assumptions, relationships and functions needed for the nutcracker theory, both the Marxian and the Post-Keynesian versions. These are Howard J. Sherman's characters. Now let us examine the plot of the story; let us see how these functions and this theory actually work.

The Mechanisms for a Business Cycle and the Plot of the Story

To see how the different elements of the nutcracker theory work together, to produce an endogenous business cycle, the analysis will be divided into four phases: the recovery phase, the prosperity phase, the downturn, and the depression phase. In this section, there will be a general tendency given for each phase and three aspects, of the economy, within each phase will be examined. These aspects are demand, supply, and profits. The Post-Keynesian analysis uses the same general mechanism, the same lag structure, but highlights different parts of the theory. The Post-Keynesian model will be analyzed separately, in the section below. Also, for Sherman's analysis there is a clear

demarcation between the separate phases, however, in reality, the variables may either move smoothly and non-linearly from one phase to the next or there might be abrupt discontinuities, with some variables. Furthermore, even though the individual troughs and peaks, of each demand, cost and profit, fall within a general range, depending on the parameters of the relationships, there is some freedom to move and still produce similar results. This means the exact structure of the lags is not rigid and the peak of the cost cycle need not precisely correlate to the trough of the demand cycle².

Recovery Phase

The general tendency of the, of the recovery phase, is that aggregate demand is increasing quicker than costs.

Demand:

Aggregate demand increases very quickly, in this phase. Both consumer demand, reflected in a large labour share of income, and investment demand, reflecting strong profit expectations, rise fast. They are aided and compounded via multiplier effects.

Cost:

Real labour costs are rising in this phase, but they are not rising as quickly as productivity. Also, although unemployment is being reduced, there is a lag between the obtaining of power, by labour, and the using of that power, due to a few circumstances. First, new employees largely come from the reserve army of unemployed labour. Second, it takes time for the computing and the reporting of economic variables and, subsequently, labour may be unaware of the fall in unemployment or increase in capitalist profits, hence the lag required to capitalize on increased power. Throughout this phase, productivity is growing very quickly and these increases go directly into profit share. Unused capacity and large inventories, from the depression phase, enable and accelerate

² This comes from the idea that both cost and demand are cyclical, too. Profits are derived by subtracting costs from revenues (profits = revenue – cost) and that a smooth growth path produces the result that profits are equal to zero. As a result, deviations of revenue and cost from this path would take on positive or negative values, with the standard smooth growth level being the referent. These deviations work together to produce a profit squeeze and the business cycle, however minor variations in the lag structure can work together to produce similar results.

this rapid increase. As a result, the labour share of national income (W/P) is falling, while the profit share is increasing (P/Y).

Profits:

The raw material to finished good price ratio lags behind productivity. Also, aggregate demand, both consumer and investment demand, is rising very quickly. So, P/Y and profit rate (Π) rise very quickly. This, in turn, raises profit expectations for the future. Therefore, investment demand continues its rapid increases. "Of course, new investment leads, via the multiplier, to more income and more consumption. The greater demand again raises profits, leading to more investment, more employment, more income, and so forth" (Sherman 1991: p. 257).

Prosperity Phase

In the prosperity phase, aggregate demand is rising, however costs are increasing much faster, as a general tendency.

Demand:

Consumer demand slows and precipitates a downturn, from lack of effective demand. Due to a falling W/Y and, therein, a falling propensity to consume, an inflection point has been reached on the demand side, so aggregate demand grows slowly in this phase. In addition, this often corresponds with a higher savings proportion by the capitalists, therefore increasing the slow down. The result is a slowing of the growth of Y and aggregate demand.

Cost:

In this phase as more labour is hired, the reserve army of labour is dwindling. As a result, real wages start to creep upwards. This corresponds with a slowing of productivity growth, as full capacity is approached, or as more overhead workers are required. As workers gain strength, W/Y slows its decline. At the same time, primary sectors are reaching full capacity and raw material prices start rising. This is due to the high demand and the long lag needed to increase supply, in the primary sector.

Profits:

Several factors are coming together to squeeze profits, in this phase. First, on the demand side, aggregate demand, especially consumer demand, is slowing. This hastens a realization problem for the economy. Second, on the supply side, full capacity is being approached and labour costs and, more importantly, raw materials costs are increasing. This reflects an increase in demand for both labour inputs and for raw materials. So, profit is starting to be squeezed from both sides. As a result, profit growth stops and Π starts to decline.

It is important to point out that investment is a function of profitability, in Sherman's theory, and it adjusts rapidly. Therefore, as profits are being squeezed, after a lag, there are lower profit expectations and investment drops off. A fall in investment starts the downturn and causes a fall in Y and employment.

Downturn

As a general tendency in the downturn, aggregate demand is falling faster than costs.

Demand:

After the turning point, there is a fall in real consumer demand, because income and employment are falling. This is accompanied by a rapid fall in investment demand, due to the decline in profit expectations. However, W/P and the propensity to consume start to rise.

Cost:

Productivity starts to fall. The fall in output is, however, not accompanied by a simultaneous fall in employment. In addition, the raw material to finished goods price ratio remains high, at the beginning of the downturn, and experiences a lag before it falls. This keeps unit costs high. However, when raw material prices start to fall they fall very rapidly.

Profits:

Aggregate demand falls quickly thus leading to a realization crisis. The fall in profits lead to less production and less investment, which, in turn, lead to less employment, less consumer demand and less income, via the multiplier process. Further, costs stay high at the start of this phase and fall rapidly near the end.

Depression/Recession Phase

There is a tendency, in the depression phase, for costs to fall faster than aggregate demand.

Demand:

The average propensity to consume starts to rise, due to the increasing labour share of income. Consumer demand slows its fall and comes to stop. Because of the increasing propensity to consume, consumer demand, then, starts a slow increase. Investment demand either remains stagnant or starts increasing, too. There are lower profit expectations in a recession and internal funds are running out, so there are favourable conditions for investment and, at the end of this phase, profit expectations are starting to increase. In sum, aggregate demand stops its fall and starts increasing.

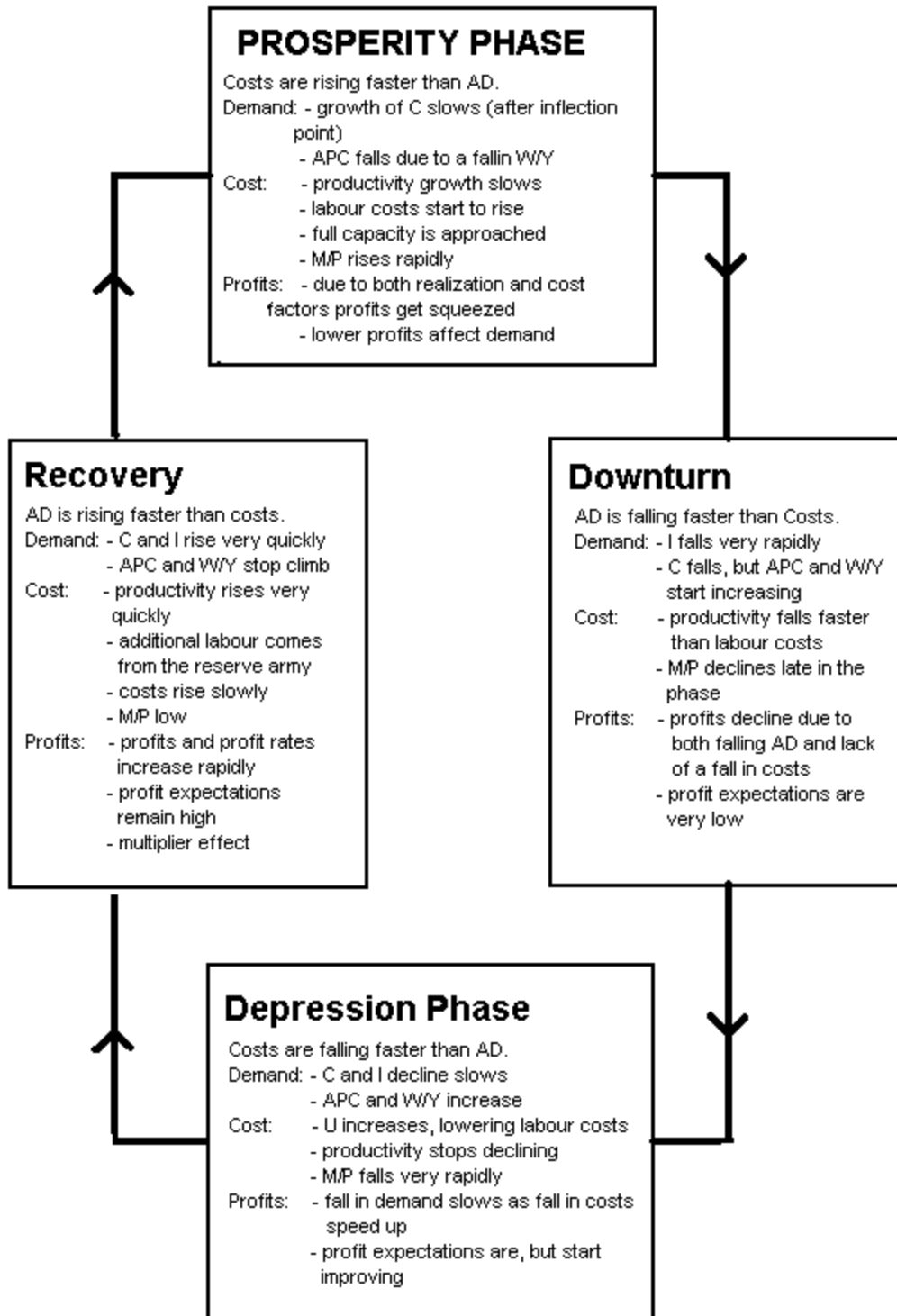
Cost:

Productivity stops its fall and, again, starts to rise. Most variable and, likely, even some overhead workers have been purged. “[C]apitalist firms [have] now fired every possible worker, even some very skilled and overhead workers” (Sherman 1991: p. 261). Also, raw material prices are very low, too, and W/P has stopped climbing. Costs are low.

Profits:

Profit rates start improving, because there is a relaxation on both the demand and supply side of profits. Aggregate demand is increasing and costs are very low. In sum, profit rates and profit expectations start rising. From this, investment gets a kick-start and a recovery is underway.

Fig. 1: Summary of the of demand, cost, and profit in the business cycle



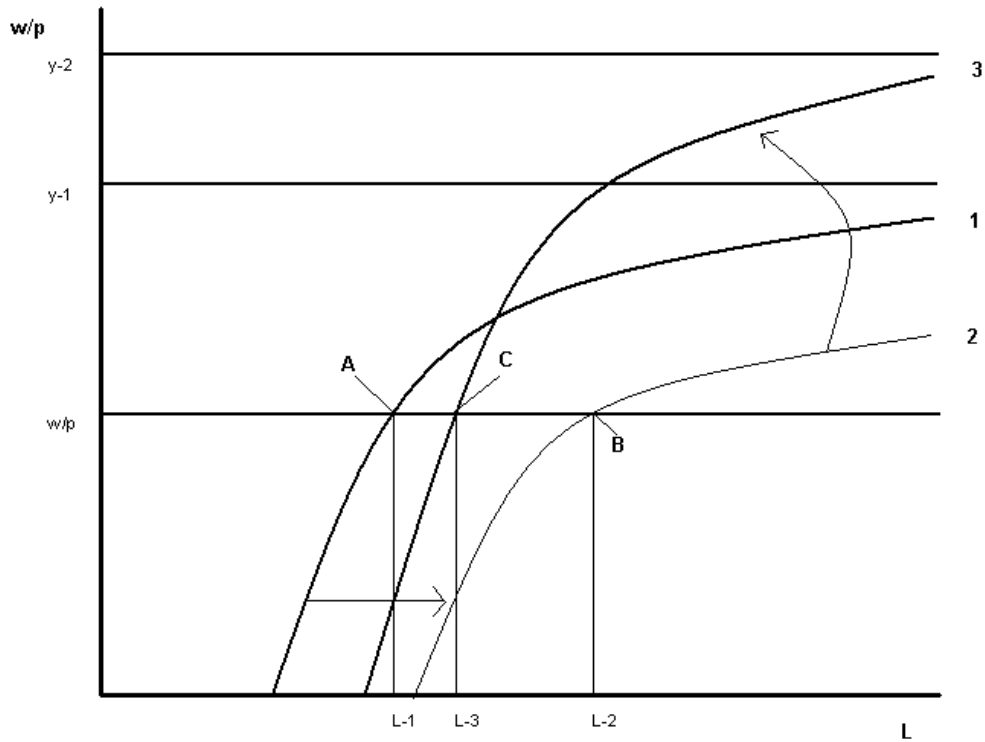
The Same Story in a Post-Keynesian World

When looking at the nutcracker profit squeeze theory, from a Post-Keynesian point of view, it is useful to remember the fundamental assumptions of Sherman's story. First, productivity per worker increases with capacity utilization immediately, while wages need a significant lag to adjust. Second, investment, or autonomous expenditure, is determined by the change in profits and profit expectations and it, also, moves very quickly. Third, prices in the primary sector work differently than those in the industrial sector. Prices in the primary sector move fairly quickly, in response to changes in demand. Prices in the industrial sector do not adjust immediately and, often, they are explicitly affected by inflation policies.

We will start the analysis on the demand-side, in figure 2, at equilibrium point A, with L_1 labour employed, shown on curve 1. In the recovery phase, investment increases, so autonomous expenditure increases. From equation (3), we see the effective demand curve shifts from 1 to 2 and from point A to point B, as a increases. At point B there is L_2 of labour hired. Yet, as more labour is being hired, excess capacity is decreasing and productivity is increasing. Productivity shifts from y_1 to y_2 , and the effective demand curve rotates from curve 2 to curve 3, and the equilibrium moves from point B to point C. At point C, to be in equilibrium, only L_3 workers are needed, however L_2 workers have been hired. Therefore, there is disequilibrium and aggregate supply is greater than aggregate demand. Further, because real wage increases lag behind productivity, w/p can be assumed constant. From this, one can easily see that there will be a realization crisis, on the demand-side and profits will be squeezed. Also, due to the equilibrium condition, equation (4), and the investment function specified above, autonomous expenditure will fall, because of this fall, or squeeze, in profits.

On the supply-side, because there was higher demand for primary sector goods, the ratio of raw materials prices to finished goods prices increases. From equation (1), *cet. par.*, one can easily see that if (p_m/p) increases profits will be squeezed. Hence, the nut, profits, has both jaws close on it. Further, because profits determine investment, there is an immediate drop in investment following this squeeze.

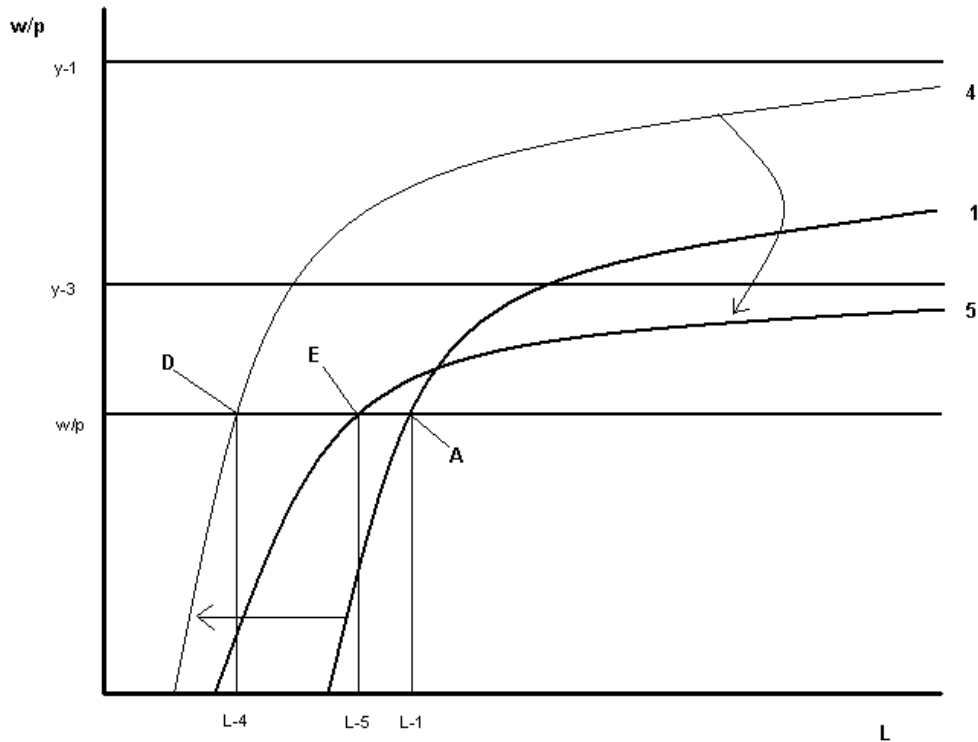
Figure 2: Effective Demand in the Recovery



In figure 3, we start from equilibrium again. This time, however, autonomous expenditure has been reduced due to the fall in profits. As a result, from equation (3), there is a shift in effective demand, from curve 1 to curve 4, and labour is reduced from L_1 to L_4 . These positions are associated with points A and D, respectively. However, the mechanism described above works in the opposite direction, consequently productivity per worker falls and wages, still, respond slowly. Productivity drops from y_1 to y_3 . As a result, the effective demand curve rotates and is shown by curve 5. The equilibrium is point E, with L_5 workers needed, yet only L_4 are employed. This is a situation where aggregate demand is greater than the aggregate supply. This causes an increase in profits and, following from equation (4), an increase in investment and autonomous expenditure. This starts the cycle over again.

In accordance, on the supply-side, primary sector prices still do not behave like finished good prices. Therefore, with the fall in demand, raw material prices fall very rapidly. From equation (1), a fall in (p_m/p) increases profits. Accordingly, the jaws of the nutcracker open and profits begin to grow again.

Figure 3: Effective Demand in the Downturn



This very simple, and common, Post-Keynesian model shows that the nutcracker theory of profit squeeze can easily be adapted to tell Sherman's story. In addition, most of the assumptions offered by Sherman are accepted by Post-Keynesians.

Evaluation of the Model and Suspension of Disbelief

The major feature of the nutcracker theory of profit squeeze is, also, its largest success. The theory incorporates both demand-side and supply-side factors into a single and comprehensive framework. However, not everyone agrees that this success is valid, notably Goldstein. While he admits "it is a laudable goal to move beyond monolithic theories of crisis to explore complex interactions of crisis mechanisms (Goldstein 1999: p. 74)," he does not accept the Sherman's presentation on empirical grounds. The main debate is between the raising strength of labour school and Sherman's nutcracker model. There is another issue with the nutcracker model, though. Sherman omitted several very important factors from the model, which also require some discussion. These include: governmental and international influences, monopoly power, and credit.

Goldstein (1999: p. 87) states “that the two components of the nutcracker theory – a cyclical underconsumptionist crisis plus a non-labour cost-induced decline in profits – have little relevance for explaining postwar US business cycles,” and “that the two theories [supply-sided and demand-sided] can coexist, but only under a very specific set of lagged causal relations” (Goldstein 1999: p. 75). Instead, Goldstein relies on the older Marxian explanation that only supply-side factors, specifically rising labour costs, cause a decline in profits. He claims this argument has empirical support and does not support the nutcracker theory and that only a peculiar lag structure could actually sustain the nutcracker theory. However, his own and Van Lear’s (1999) evidence disproves this (Sherman 2002, Van Lear 1999, 2002). Both Goldstein (1999) and Van Lear (1999, 2002) do not show rising labour costs until after profits have already started to decline. Even with this evidence, Sherman (1986, 1990) recognizes the influence of either side, demand or cost, may vary in different cycles, yet, in every cycle, he states both still exist. Moreover, even if a peculiar lag structure were needed, this is insufficient cause to discard the nutcracker theory as a valid explanation. As Goldstein (1999) points out, it is only peculiar based upon conventional wisdom. To which Sherman (2002: p. 181) responds, “I have spent my life attacking the ‘conventional wisdom’ of neoclassical economics, this does not particularly impress me; the question is only whether it is right or wrong.”

This being said, the main question should be and is whether Sherman’s description of events is, or is not, plausible. Can one suspend their disbelief and accept the basic assumptions, and, in the end, accept the nutcracker’s theory of the business cycle? I would say yes. While there are weaknesses, which will be addressed below, but the fundamentals of the story are sound and should be accepted as a plausible preliminary foundation. The basic assumptions are frequently accepted by most Marxians and Post-Keynesians and, from this, garner significant credibility. Belief has, therefore, been suspended in regards to Sherman’s foundation. However, this theory has room to mature and to take into account several very important influences.

Sherman’s theory neglects the roles of government and international trade, credit and finance, monopoly power and, while there has not been a great deal of discussion on

these issues, it is on these points that further development of the model needs to take place.

Sherman sees the government as being party to the cycle, because it is slow reacting and works with the interests of business in mind. The role of government's fiscal or monetary policy largely depends on the administration in power, though. Assuming government surpluses accrue in the boom phases, a great deal could change depending on the expediency of the distribution of this money. The policies enacted by the government could lengthen and smooth out the cycles, if they mandated wage increases proportional to productivity increases (a policy they have abandoned), spent the surpluses, and kept the price of borrowing low. Big governments can more evenly redistribute income and, as a result, not have wild shifts in income proportions that cause cycles in a free and self-regulated market. Further, if needed, big governments can stabilize the system in a downturn, by acting as an investor, or lender, of last resort. On the flip side, a small government, or a government that uses anti-inflation and tax cutting policies, is not able to influence and stabilize the economy with equal efficacy. In fact, they might accelerate or exacerbate the cycles, by holding on to any surpluses, or by adversely and suddenly fighting inflation and raising the costs to invest, or by cutting the taxes of the capitalists and, therefore, artificially increasing the profit share of income.

Also, in the realm of international trade, governments simultaneously play a major role and are constrained by international events. Government policy cannot forget about the international markets, however their influence, again, largely depends on the policy route taken by a particular government. In sum, it is very difficult to incorporate government action and international trade into a model, even though each can have a tremendous impact.

According to Sherman (1991: p. 291), there are several "controversial issues concerning finance and credit in the business cycle," but he relegates the role of credit and finance to an auxiliary position. However, in the late twentieth century credit plays an enormous role in the day to day functioning of the economy, especially in sustaining aggregate demand. This is a point where Post-Keynesian ideas could easily improve Sherman's theory. Nonetheless, for Sherman, credit is seen as increasing the frequency and amplitudes of the cycles. Credit is a complicated issue, and, in various

circumstances, it could work to increase the likelihood of cycles, or it could smooth out the fluctuations.

Sherman connects the issues of post-World War II inflation and monopoly power. He states that each has a significant effect on business cycles:

The phenomenon of inflation appears in recessions now because of the vast increase in concentrated monopoly power . . . In several recessions of the 1950s and 1960s, though competitive prices dropped in each contraction, monopoly prices rose. In the depressions of 1975 and 1980, general inflation increased competitive prices a little, whereas monopoly prices soared. As a result of the monopolist's control over prices . . . the monopoly profit rates are relatively stable, declining relatively little in recession or depression. The small competitive firms, however, bear the full burden of the profit decline in depression . . . Hence, increasing monopoly has caused greater declines of production and employment, while raising prices through that very restriction of supply.

The existence of monopoly, therefore, increases cyclical unemployment to a higher level than it would be if there were no monopoly. (Sherman 1991: p. 315).

So, monopoly power has a strong effect on profit behaviour and income distribution.

Monopoly power would, however, be very difficult to include in the model, yet it has very profound and potent effects.

Conclusion: Anti-climatic or Thrilling Tale?

“In our own time interest has shifted away from finding explanations for these ‘cycles’ of prosperity and depression towards a search for explanations concerning the uneven pace of the long-term momentum of growth” (Heilbroner 1992: p. 44). Yet, one can not discount the social effects of business cycles. It is difficult for someone who is repeatedly getting hired and fired to have faith in smooth economic growth. Business cycles still exist and economics requires a theory to explain these cycles. If a satisfactory theory can be established, policy recommendations can flow from there. Governments can enact policies that are of benefit to both the workers and the entrepreneurs.

Howard J. Sherman tells a story. He has characters and he has a plot. Sherman describes a profit squeeze theory, where the squeeze comes from both sides:

An object cannot be squeezed from one side; profit must be squeezed between revenue and costs. A logically complete theory of profits and the business cycle must show how BOTH demand and supply operate so as to squeeze profits in late expansions, while BOTH help profits to recover at the end of contraction (of course, it is possible for one to move, while the other remains constant). (Sherman 1988: p. 94)

Further, it was shown that this theory is commensurable with standard Post-Keynesian assumptions. It was argued that these mechanics were reasonable, with some tweaking needed, to suspend our disbelief. As a result, the nutcracker theory of profit squeeze is accepted as plausible and it is a solid foundation from which to determine policy and, moreover, it is another solid starting point for cooperation between Marxians and Post-Keynesians.

November 12, 2011

The heterodox economist walked down the steps, of the economics department and he started home. He had recently received a permanent position and the school was a good one. It was quite small, but of high quality. Evening and darkness had fallen over the university and it was beginning to snow. The flakes brilliantly reflected the light of the street lamps, as they fell. The snow wasn't sticking, though. It was melted on contact with the concrete.

The heterodox economist walked slowly down the sidewalk. He pondered the story he had just heard on the radio. The top story was the booming economy. Everybody was making huge profits and no one see could see an end in sight. Further, the business leaders interviewed cited the government's business friendly policies, as the reason for the boom and they said, that now that the government had freed the markets there was no reason for the economy to slump again. The heterodox economist sighed and continued walking down the sidewalk. He knew what was coming.

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