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Conflict inflation: Keynesian path dependency or Marxian cumulation?

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Abstract

Notions of conflict inflation have been central to neo-Marxian and post-Keynesian economics. There are tensions, however, within the Marxian/post-Keynesian camp. Post-Keynesians emphasize weak feedback effects between price and wage inflation, thereby preserving the importance of aggregate demand in the determination of output and employment in the medium and long run. Like Kalecki (1943), Marxists typically suggest, on the contrary, that if unemployment is kept low, cumulative increases in workers' power and militancy imply severe limitations of aggregate demand policy in the long run. The paper discusses these rival perspectives and their implications, suggesting that (i) valid Marxian concerns are likely to derail ambitious reform programs that rely on fiscal expansion, (ii) Kalecki's analysis failed to recognize the centrality of inflation for aggregate demand policy and the multidimensional character of class conflict, and (iii) rather than focus on the wage struggle, labor movements may benefit from prioritizing political and institutional change.

JEL codes: E31, E71

Key words: wage aspirations, fairness norms, worker militancy, hysteresis, welfare state, de-commodification

1 Introduction

Conflict inflation has been a mainstay of several heterodox traditions in macroeconomics, including a vast neo-Marxian and post-Keynesian literature, with Rowthorn (1977) as an influential contribution. The Latin American structuralist tradition has also emphasized distributional issues (Ros 2013 provides a survey), while 'wage-price spirals' were a standard feature of mainstream macroeconomics in the post-Second-World-War period until the 1980s.

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Using a simple model with monopolistic competition and staggered price and wage setting, Blanchard (1986) attempted to rehabilitate the conflict approach, showing that "price level dynamics are indeed the result of attempts by workers to maintain (or increase or decrease as the case may be) their real wage and by firms to maintain (or increase or decrease) their markups" (p. 544). More recently, Lorenzoni and Werning (2023, p. 2) have argued that "the most proximate and general cause of inflation is conflict" and that "inflation results from incompatible goals over relative prices, with conflicting agents each having only partial or intermittent control over."¹

Conflict is ubiquitous. Even a sterile Walrasian world can be seen as deeply conflictual: all agents would like to increase their consumption, and Pareto optimality implies that if one agent gains, another agent must lose. Recognizing this inherent conflict associated with scarce resources and Pareto optimality may help bridge the gap between mainstream and heterodox traditions, thereby facilitating potentially fruitful interactions. The danger is a blurring of important differences. The nature of the conflict and its implications in Walrasian general equilibrium and contemporary mainstream macroeconomics are quite different from the conflict between social groups and classes and its implications in Marxian and post-Keynesian theories.^{2 3} Putting it differently, if all inflation is conflict inflation, we may need new terminology to distinguish different versions of conflict inflation.

Be that as it may, there are significant differences, even within the Marxian and post-Keynesian traditions. Both traditions view distributional struggles as a source of inflation but, while it is widely accepted that firms aim to make as much profit as possible, the determination of workers' wage aspirations and

¹Lorenzoni and Werning (2023) show that conflict is necessary to sustain positive inflation along the steady growth path in a model with staggered wage and price setting. This result, however, depends on the non-verticality of the long-run new Keynesian Phillips curve. The slope of the new Keynesian Phillips curve goes to infinity as the discount rate goes to zero, and the non-verticality is usually dismissed as irrelevant because a low discount rate makes the curve so steep that, for practical purposes, the models have a natural rate of unemployment.

If the long-run Phillips curve is vertical, inflation can persist at any constant rate as long as the economy is at the 'natural rate'; as a special case, the natural rate may be determined by perfect competition in both in both labor and goods markets, leaving no decision maker with the power to set a wage or price.

²A Walrasian example illustrates that there may be inflation without price setting and also that conflict need not be the source of inflation. Consider a simple intertemporal general equilibrium model. Agents all receive endowment bundles of $n+1$ different, perishable goods in each period. The bundles may differ across agents, but the amounts of goods 1 to n in an agent's bundle are the same every period, while the amount of good $n + 1$ increases at a rate ρ every period. All agents have the same Cobb-Douglas utility function. Choosing good $n+1$ as the numeraire, the Walrasian equilibrium prices of the other n goods will increase at the rate ρ . There is conflict (in the sense that increased utility for any one agent must come at the expense of lower utility for someone else), but no agent has market power and engages in price setting. The degree of conflict, moreover, does not depend on the value of ρ , and inflation is positive for $\rho > 0$ but negative if $\rho < 0$. Thus, conflict cannot be seen as the source of inflation in this example.

³With individual households choosing their levels of consumption and leisure to maximize utility, the nature of the conflict in basic new Keynesian models without unemployment has little in common with Marxian and post-Keynesian conceptions of conflict.

willingness to take action to realize these aspirations is more contentious. All agree that workers' aspirations and militancy are historically determined, but this agreement leaves open the way in which endogenous forces can affect workers' behavior, an openness that allows fundamentally different views on the implications of conflict inflation.

Broadly speaking, the post-Keynesian side tends to emphasize adaptive mechanisms that reduce conflict and enable aggregate demand policy to engineer long-run expansions in employment without explosive inflation; adaptive wage norms influence workers' aspirations and wage demands, generating employment hysteresis. Marxists, by contrast, stress the centrality of class conflicts and the crucial role of the reserve army of labor: prolonged periods of near-full employment in a capitalist economy would gradually, as the memories of past unemployment fade, undermine 'discipline in the factories' and raise wage demands.

Both post-Keynesian adaptation and cumulative Marxian effects on worker militancy represent endogenous forces influencing the dynamics of wage demands, and both mechanisms are behaviorally plausible. They have very different implications, however. The adaptation story makes aggregate demand the prime determinant of output and employment in both the short and long run, while class conflict, in the Marxian story, constrains the sustainable rates of employment in a capitalist economy: the reserve army of labor is needed to discipline workers, curb their wage aspirations and eliminate the incompatibility of the conflicting claims.

Mechanisms with opposite effects can coexist within the same general theory, of course. As a simple macroeconomic example, the balanced budget multiplier combines expansionary and contractionary effects of an increase in government spending and taxes, with traditional Keynesian theory suggesting that the expansionary spending effect will dominate. One may ask whether a similar, unambiguous conclusion can be derived with respect to the long-run effects of aspirational adaptation and cumulative militancy. The answer, I shall argue, is negative. We have no foundations for claiming that one of the forces must always dominate; nor is there convincing evidence to conclude that, although Keynesian aggregate demand dominates in the short run, the classical/Marxian perspective must take over in the long run (Kalecki 1943, Dumenil and Levy 1999, Michl 2012).

The analysis in this paper suggests that the post-Keynesian literature may have ignored or underestimated some potentially serious, political-economy consequences of inflation. The Kalecki-Marx story, on the other hand, may have failed to recognize both the centrality of inflation for aggregate demand policy and the multidimensional character of class conflict. The analysis – if it is correct – has implications not just for aggregate demand policy but also for labor movements: they may benefit from prioritizing political and institutional change rather than focus on the wage struggle. Aggressive money wage demands are likely to raise prices, with a limited impact on real wages. Because of the deep and widespread dislike of inflation, the main result may be support for deflationary aggregate policy, declining employment and the erosion of workers'

strength. To be successful, labor movements need to adapt accordingly.

Section 2 outlines a simple post-Keynesian model of inflation based on conflicting claims, along with some relatively straightforward extensions, modifications and applications. Following Skott (2005, 2023), section 3 considers the implications of path dependent wage aspirations. Marxian and Kaleckian cases with cumulative militancy are analyzed in section 4, this section drawing on the literature inspired by Goodwin (1967) and Kalecki (1943). The hybrid models in section 5 explore implications of combining both mechanisms. The conclusion in section 6 offers some tentative comments and observations on the implications for labor movements and economic policy.

2 Baseline models

2.1 Assumptions

Distributional conflict is the recurrent theme in post-Keynesian writings on inflation. Workers have wage targets, while firms have profit targets that translate into implied targets for real wages. If the targets are mutually inconsistent, the result is inflation: workers demand and get nominal wage increases, and firms respond by raising prices.⁴

Simple versions of the theory treat the targets as exogenous, abstract from technical change and assume constant labor productivity below full capacity. Normalizing labor productivity to one, these assumptions imply that the wage share equals the real wage. Equations (1)-(2) represent a typical specification:

$$\pi_w = \hat{w} = \gamma_w(\omega_w - \omega) + \alpha_w \pi_p^e + \beta_w \pi_w^e; \quad \gamma_w > 0, \alpha_w \geq 0, \beta_w \geq 0, \alpha_w + \beta_w \leq 1 \quad (1)$$

$$\pi_p = \hat{p} = \gamma_p(\omega - \omega_f) + \alpha_p \pi_p^e + \beta_p \pi_w^e; \quad \gamma_p > 0, \alpha_p \geq 0, \beta_p \geq 0, \alpha_p + \beta_p \leq 1 \quad (2)$$

where ω, ω_w and ω_f denote the actual wage share and workers' and firms' target shares, respectively; w, p, π_p and π_w are the money wage, price, rate of price inflation and rate of wage inflation, with π_p^e and π_w^e as the expected rates of price and wage inflation. Throughout the paper, 'dots' and 'hats' over a variable are used to denote the rate of change and the growth rate of the variable. Equations (1)-(2), which describe wage and price setting, respectively, imply that the wage share follows a differential equation,

$$\hat{\omega} = \hat{w} - \pi = \gamma_w(\omega_w - \omega) - \gamma_p(\omega - \omega_f) + (\alpha_w - \alpha_p)\pi_p^e + (\beta_w - \beta_p)\pi_w^e \quad (3)$$

⁴Rowthorn (1977), Marglin (1984, 2021), Dutt (1987, 1992), Hein (2006), Setterfield (2007), Flaschel and Krolzig (2007) and Hein and Stockhammer (2009) are among the post-Keynesian and neo-Marxian contributions. Post-Keynesian texts, including Lavoie (2014), Blecker and Setterfield (2019) and Hein (2023), present variations of this model. More mainstream versions of the argument have been presented by Blanchard (1986), Lorenzoni and Werning (2023) and several wellknown textbooks, including Blanchard (2021) and Carlin and Soskice (1990, 2015).

Endogenizing workers' aspirations, their target real wage depends on the employment rate e and a set of exogenous variables z that may include labor market institutions, prevailing social norms, and the 'level of worker militancy',

$$\omega_w = f(e; z); \quad f_e > 0 \quad (4)$$

The degree of monopoly in product markets determines firms' target markup on unit labor costs, which, in the context of constant labor productivity, translates into a target markup on the nominal wage rate or, equivalently, a target wage share:⁵ For simplicity, it is assumed that firms' target share is exogenous:

$$\omega_f = \bar{\omega}_f \quad (5)$$

Inflation expectations are adaptive,

$$\dot{\pi}_p^e = \mu_p(\pi_p - \pi_p^e) \quad (6)$$

$$\dot{\pi}_w^e = \mu_w(\pi_w - \pi_w^e) \quad (7)$$

At a stationary solution to equations (6)-(7) we have $\pi_p = \pi_p^e$ and $\pi_w = \pi_w^e$. With constant values of π_p, π_p^e, π_w^e and $\omega_f = \bar{\omega}_f$, equation (2), in turn, implies that the wage share ω must be constant, that is, $\pi_p = \pi_w$. Using equations (1) and (4), it now follows that both workers wage target ω_w and the employment rate e must also be constant. If π denotes the common value of $\pi_p, \pi_w, \pi_p^e, \pi_w^e$, these stationarity conditions imply that equations (1)-(2) can be written as

$$(1 - \alpha_p - \beta_p)\pi = \gamma_p(\omega - \omega_f) \quad (8)$$

$$(1 - \alpha_w - \beta_w)\pi = \gamma_w(\omega_w - \omega) \quad (9)$$

2.2 Two versions

A version with a natural rate If $\alpha_w + \beta_w = \alpha_p + \beta_p = 1$, the left hand sides of (8) and (9) both equal zero, and we must have $\omega = \omega_w = \omega_f$. Thus, using equations (4)-(5), the employment rate must satisfy

$$f(e; z) = \bar{\omega}_f \quad (10)$$

Equation (10) determines the stationary solution of the employment rate as a function of the exogenous variables z and $\bar{\omega}_f$: the model defines a unique natural rate of (un)employment. Although aggregate demand may determine output and employment in the short run, it cannot be seen as exogenous in the long run. Policy makers must intervene and adjust aggregate demand to prevent explosive inflation.

⁵Firms' markup could be related to the utilization rate of capital and other variables. For present purposes, however, extensions like this would add little. If, for instance, the utilization rate were added as a determinant of the markup, it should not be treated as a free variable. In a mature economy, the steady-growth solution for utilization would be pinned down by the steady-growth requirement that, , the accumulation rate be equal to the growth rate of the labor force in effective units.

A version with a traditional Phillips curve If $\alpha_w + \beta_w < 1$ and/or $\alpha_p + \beta_p < 1$, the stationarity conditions yield a solution for inflation π and the wage share ω for any given value of the employment rate e . The solutions are given by⁶

$$\omega = \frac{\gamma_w(1 - \alpha_p - \beta_p)}{\gamma_w(1 - \alpha_p - \beta_p) + \gamma_p(1 - \alpha_w - \beta_w)} f(e; z) + \frac{\gamma_p(1 - \alpha_w - \beta_w)}{\gamma_w(1 - \alpha_p - \beta_p) + \gamma_p(1 - \alpha_w - \beta_w)} \bar{w}_f \quad (11)$$

$$\pi = \frac{\gamma_p \gamma_w}{\gamma_w(1 - \alpha_p - \beta_p) + \gamma_p(1 - \alpha_w - \beta_w)} (f(e; z) - \bar{w}_f) \quad (12)$$

This version recovers the tradeoff of the traditional Phillips curve (equation (12)). If $\alpha_p + \beta_p < 1$, it also implies that increases in employment (or an upward shift in the f -function describing workers' target) will raise the wage share. Formally,

$$\frac{\partial \omega}{\partial e} = \frac{\gamma_w(1 - \alpha_p - \beta_p)}{\gamma_w(1 - \alpha_p - \beta_p) + \gamma_p(1 - \alpha_w - \beta_w)} f_e > 0$$

$$\frac{\partial \pi}{\partial e} = \frac{\gamma_p \gamma_w}{\gamma_w(1 - \alpha_p - \beta_p) + \gamma_p(1 - \alpha_w - \beta_w)} f_e > 0$$

Intuitively, wage inflation increases following a rise in workers' target share, and if $\alpha_p + \beta_p < 1$, price inflation does not respond fully to the ensuing increases in expected wage and price inflation. The increase in workers' target share therefore raises both inflation and the wage share in the long run.

Hein (2002) and Lavoie (2014) highlight special cases of this version: inflation becomes completely invariant to changes in aggregate demand and employment if $\gamma_w \gamma_p = 0$ (deviations of actual from target real wages have no effect on wages or price setting) and/or if $f_e = 0$ (changes in employment have no effect on workers' wage demands).

The versions with natural rates and traditional tradeoffs differ with respect to the pass-through of expected inflation into wage and price setting, with the natural rate hypothesis positing complete pass-through and the traditional tradeoff relying on imperfect pass-through. Both of these positions seem questionable.

Workers may, as argued by Rowthorn (1977), ignore inflation when the inflation rate is low, which invalidates the natural rate hypothesis. But the rate of pass-through of expected inflation into wage inflation is unlikely to stay low as inflation increases and the costs of incomplete pass-through rise. If, for instance, workers' nominal wage demands include only half of the expected price inflation,

⁶Equations (8)-(9) can be used to solve for π as a function of ω_w and ω_f . The solution for the wage share ω can now be found by setting the left hand side of equation (3) to zero and substituting the solution for π for π_p and π_w .

the real wage will erode by only 1 percent a year when expected inflation is 2 percent; the erosion rate rises to 10 percent a year if expected inflation runs at 20 percent.

Thus, the behavioral plausibility and empirical support for the version with a traditional Phillips curve can also be questioned.⁷ ⁸ Following Rowthorn, there is likely to be a range of employment rates that are potentially consistent with constant inflation rates.⁹ But ambitious aggregate demand policy risks pushing the economy beyond the threshold and spark a process of explosive inflation.¹⁰

3 Path dependent income claims

While the restrictions underlying stable, downward-sloping Phillips curves may be unconvincing, an alternative line of argument has significant support. To explore this channel, assume for now that the pass-through from expected to actual inflation is complete.

Most post-Keynesian discussions of inflation and Phillips curves stress the role of labor market institutions and norms of fairness. The potential influence of labor market institutions should be obvious, but wage setting is also influenced by the prevailing norms of fairness. The influence on wage demands is clear when workers have market power, but fairness concerns are important even when workers are fragmented and without direct influence on wage setting. Imperfect information implies that firms are unable to fully monitor workers' effort and performance. Because of this principal agent problem, profit maximizing firms have an incentive to consider fairness norms and set wages with an eye to their

⁷These doubts also apply if it is 'experienced inflation' or formal indexation rather than expected inflation that affects wage and price setting. Mathematically, the effect of expected inflation reduces to an effect of experienced inflation when expectations are adaptive.

⁸Hein (2023) expresses similar misgivings about imposing less than full pass-through from expected inflation. He suggests, instead, that price inflation reacts less than one-for-one to the employment-induced part of wage inflation. Formally, it is assumed that

$$\begin{aligned}\pi_w &= \alpha(e - \bar{e}) + \pi^e \\ \pi_p &= \beta\alpha(e - \bar{e}) + \pi^e; \quad 0 \leq \beta < 1\end{aligned}$$

Like the specifications with $\alpha_p + \beta_p < 1$, this formulation makes it possible for workers to influence the real wage when employment exceeds \bar{e} , and the model also produces a stable downward sloping, real-wage Phillips curve. As in the natural rate version, however, the stationarity of the inflation rate pins down the employment rate in the long run, $e = \bar{e}$.

⁹The anchoring of expectations has similar implications: aggregate demand policy can raise employment without serious inflationary consequences as long as expectations remain anchored. The anchoring is unlikely to last, however, in the face of large and persistent deviations of actual from expected inflation. While Rowthorn suggested that inflation loses its salience when it is low, the anchoring argument concerns the potential stickiness of inflation expectations.

¹⁰Surprisingly, Rowthorn's discussion of these issues appears to have received little attention in the post-Keynesian literature. One exception is Blecker and Setterfield (2019, p. 219) who note how the degree of indexation may be increasing in the rate of inflation. Akerlof et al. (2000) rediscover Rowthorn's argument but appear to be unaware of his paper. The presence of thresholds below which inflation is largely ignored can become particularly important in models that include endogenously changing norms of fairness (Skott 2023, chapter 6).

effects on the morale, effort and productivity of their workers.

Although predetermined in the short run, social norms evolve over time. Persistent violations of a norm gradually undermine its power, while an outcome that has been sustained for prolonged periods can gain the status of a social norm. In the words of Hicks (1975, p. 65), if a system of wages is well established, it “has the sanction of custom. It then becomes what is expected; and (admittedly on a low level of fairness) what is expected is fair”. Other economists, including Marshall (1887) and Keynes (1930), have made similar comments about path-dependent wage norms.¹¹ Reassuringly, these insights have been confirmed by more systematic findings in the psychological and behavioral literature (e.g. Kahneman et al. 1986).

Norms are formed with respect to variables that exhibit some degree of stability; they only persist and retain their power if they are affirmed by actual behavior. If real wages tend to rise over time as productivity increases, there will be no anchor for the level of ‘fair real wages’. Instead, norms may form with respect to the growth rate of real wages. If wages have increased by 2 percent a year for a long time, a continuation of this rate of increase will be considered fair, assuming that the unemployment rate and the general conditions in the labor market are unchanged. If real wage growth increases to 3 percent, however, aspirations will converge to this new reality; a return to the former rate of increase would now come to be seen as unfair, still assuming an unchanged unemployment rate. The qualifier – assuming an unchanged unemployment rate – is important. The fairness norm, in Marshall’s (1887) words, “is modified by the admission that changes in circumstances may require changes in wages in one direction or another” (p. 213). This conditionality is in line with both experimental and survey evidence; wage aspirations and assessments of fairness depend on labor market conditions.¹²

Consider a simple model with excess capital capacity, constant returns to labor and a constant markup on unit wage cost. If labor productivity grows at the rate q , these assumptions imply that price setting can be described by a horizontal curve in a figure with employment on the horizontal axis and the growth rate of real wages on the vertical axis. Turning to wage setting, suppose that the fair growth rate of real wages is an increasing function of employment and that the growth rate of nominal wages is set so as to make the expected

¹¹Keynes (1930), for instance, expressed his sympathy with the view that “the factors of production get what they do, not because in any strict sense they precisely earn it, but because past events have led to these rates being customary and usual” (quoted from Keynes 1981, p. 7). In the post-Keynesian literature, Lavoie’s widely cited textbook explains that

At the core of heterodox theories of inflation are the normative pressures of fairness. In post-Keynesian theory, inflation is explained by normative values, that is, pay norms, custom, equity and justice. These norms have an impact on what is a fair relative wage, a fair real wage, and a fair profit share. (Lavoie, 2014, p. 545)

¹²Bewley (1998) finds that workers often go along with pay reductions in “distressed companies” (p. 481). See also Akerlof et al (1996).

growth of real wages equal to the fair rate of growth.¹³ Depicting this wage setting curve in the same figure, the intersection between the price and wage setting curves defines a unique equilibrium in which inflation expectations are being met. Short-run deviations from this equilibrium can occur, but any such deviations imply that inflation diverges from the rate that was expected when nominal wages were set.

Although cast in terms of fairness norms and growth rates of the real wage, we get a standard natural-rate result: if employment is kept above the equilibrium level, actual inflation will exceed expected inflation, the short-run Phillips curve will shift upwards if expectations are adaptive, and the scene is set for ever-increasing rates of inflation. But now introduce adaptive changes in wage norms. If the position of the wage setting curve depends on aspirations and norms that are shaped by past experience, deviations from the equilibrium start a process of adjustments in wage norms: the wage setting curve will be shifting.¹⁴

If policy makers keep employment at a constant level above the initial equilibrium, inflation exceeds expected inflation and the growth rate of real wages will be below the fair growth rate of the real wage that workers had expected to achieve. Aspirations and norms react to this discrepancy, adjusting gradually towards the unchanged actual growth rate of the real wage: the curve describing wage setting shifts down, and the equilibrium rate of employment increases (figure 1). The adjustment process is accompanied by increases in inflation, but the increase may be finite. The unemployment rate associated with mutually consistent claims converges to the actual rate, and aggregate demand, consequently, can have permanent effects on employment and output without triggering unbounded, explosive inflation.

Formally, if workers' target real-wage growth is linear in the employment rate, the growth rate of nominal wages is given by

$$\hat{w} = a + be + \pi^e \quad (13)$$

where $a + be$ is the fair rate of growth of real wages. The markup is taken to be constant, and the real wage grows at the same rate as labor productivity,

$$\hat{w} - \pi = q \quad (14)$$

The gradual adjustment of aspirations and norms is captured by letting the term a in equation (15) change in response to deviations of the growth of actual real wages from the target (fair) growth rate of real wages.

$$\dot{a} = \mu(q - a - be) \quad (15)$$

Equation (15) implies that a converges to a stationary solution for any given employment rate,

$$a \rightarrow a^* = q - be \quad (16)$$

¹³This equality of the expected growth in real wages to the fair growth in real wages is consistent with simple shirking models in atomistic labor markets, in which firms set nominal wages to avoid shirking, as well as with models in which a monopoly union imposes money wage increases that, conditional on expected inflation, will achieve the fair growth rate of real wages.

¹⁴Other sources of hysteresis in the labor market lead to similar shifts in the wage curve.

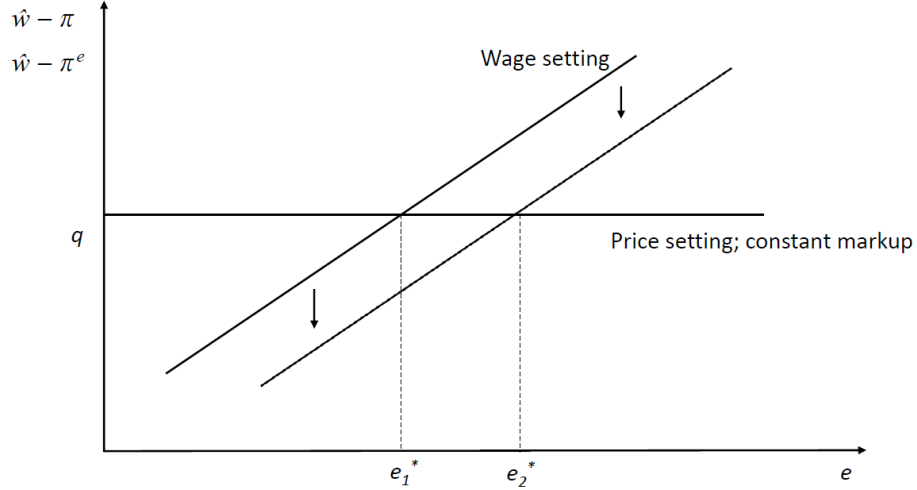


Figure 1: Endogenous shifts in real-wage norms.

Inflation expectations are adaptive, by assumption,

$$\dot{\pi}^e = \lambda(\pi - \pi^e) \quad (17)$$

and, using equations (13)-(14) and (17), we have

$$\dot{\pi}^e = \lambda(a + be - q) \quad (18)$$

Equations (15)-(18) imply that

$$\dot{\pi}^e = -\frac{\lambda}{\mu} \dot{a} \quad (19)$$

Thus, both a and π^e are stationary when $a = q - be$. Using equations (16) and (19), a change Δe in the employment rate induces a long-run change in a ($\Delta a^* = -b\Delta e$, from equation (16)) and a proportional change in π^e ($\Delta \pi^e = -\frac{\lambda}{\mu} \Delta a$, from equation (19)). In a long-run equilibrium we have $\pi = \pi^e$, and it follows that the long-run change in inflation is given by

$$\Delta \pi^* = -\frac{\lambda}{\mu} \Delta a^* = \frac{\lambda}{\mu} b \Delta e \quad (20)$$

Despite complete pass-through of expected inflation to wage inflation, there is no natural rate of unemployment: the presence of adaptive wage norms has produced a downward-sloping long-run Phillips curve.¹⁵ The introduction of

¹⁵It may be noted that, as in the baseline models in section 2, the qualitative results are

adaptive wage aspirations has allowed the determination of output and employment by aggregate demand, also in the long run.

Equations (15)-(18) also imply the presence of inflation hysteresis: a positive shock to the initial values of the state variables a or π^e will have no effect on the stationary solution for a if the employment rate is kept unchanged (equation (16)). But the stationary solution for π^e (and therefore also the stationary solution for actual inflation π) will increase. This path dependency of inflation (for a constant employment rate) is reflected mathematically by equation (19), which can be integrated to yield a relation between the levels of expected inflation and the aspiration parameter a :

$$a = -\frac{\mu}{\lambda}\pi^e + C \quad (21)$$

where C – an arbitrary constant of integration – is determined by initial conditions; an exogenous shock to a or π^e changes the initial conditions, causing a shift in C .

A simple experiment involving a permanent shock to the employment rate may seem empirically irrelevant. Influenced by the natural rate hypothesis, policy makers typically have explicit inflation targets rather than employment targets. As a stylized representation of inflation targeting, suppose that aggregate demand and employment respond to deviations of inflation from the target value, π^T :

$$\hat{e} = f(\pi - \pi^T); \quad f(0) = 0, f' < 0 \quad (22)$$

The dynamic system described by equations (15),(18) and (22) has a unique stationary state:

$$\pi = \pi^e = \pi^T \quad (23)$$

$$e = \frac{q + \frac{\mu}{\lambda}\pi^T - C}{b} \quad (24)$$

The stationarity conditions now require that inflation equal the target rate (equation (23)), while employment depends positively on the value of the target

affected if the pass-through from expected inflation to wage inflation is incomplete, that is, if equation (13) is respecified to read:

$$\hat{w} = a + be + \alpha\pi^e; \quad \alpha < 1$$

The dynamics of the fairness parameter a – equation (15) – is unchanged, but expected inflation now follows the equation

$$\dot{\pi}^e = -\lambda(1 - \alpha)\pi^e + \lambda(a + be - q) \quad (*)$$

The dynamic system consisting of equations (15) and (*) has a unique, stable stationary solution for any given value of the employment rate:

$$\begin{aligned} a^* &= q - be \\ \pi^* &= \pi^e = 0 \end{aligned} \quad (**)$$

Equation (**) shows that in this version of the conflicting claims theory, the long-run Phillips curve becomes horizontal (rather than downward-sloping, as in section 2), and not only that: the inflation rate converges to zero for any rate of employment. This result parallels Lorenzoni and Werning's (2023) analysis using a new Keynesian Phillips curve (see footnote 1 above).

(equation (24)): an increase in the inflation target raises employment in the long run.¹⁶

The post-Keynesian models in this section incorporate conflict over the distribution of income. The conflict element is clear when nominal wages are controlled by labor unions, but the efficiency-wage interpretation of wage setting also embodies conflict and power relations: workers can hurt firms by withholding effort, while the threat of job loss acts as a disciplining device to curb wage demands.¹⁷ The outcomes are characterized by unemployment, with workers getting a real wage that exceeds their reservation wage. But adaptive social norms imply that the required cost of job loss adjusts endogenously: the distributional claims can be mutually consistent at a range of unemployment rates.

4 Marxian cumulation

4.1 Goodwin

Goodwin's (1967) formalization of Marx's general law of capitalist accumulation posited two dynamic relations: the growth rate of the employment rate depends negatively on the wage share, while the growth rate of the wage share depends positively on the rate of employment:

$$\hat{e} = f(\omega); \quad f' < 0 \quad (25)$$

$$\hat{\omega} = g(e); \quad g' > 0 \quad (26)$$

The utilization rate and capital output ratio are taken to be constant, with the predetermined capital stock pinning down the level of output at each moment. The rate of capital accumulation adjusts passively to the ratio of saving to capital which, in turn, is a decreasing function of the wage share. The dynamic equation for the employment rate follows from these assumptions if the natural growth rate – the growth rate of labor force in effective units – is constant. The dynamics of the wage share can be derived from a constant growth rate of labor productivity and a real-wage Phillips curve, with the growth rate of real wages as an increasing function of the employment rate.

The stationarity condition for the employment rate determines the stationary solution for the wage share, $\omega^* = f^{-1}(0)$, and, analogously, the stationarity

¹⁶The stationary solution is stable. The Jacobian is given by

$$J(\pi^e, e) = \begin{pmatrix} -\mu & \lambda b \\ ef'(1 - \frac{\mu}{\lambda}) & ef'b \end{pmatrix}$$

and

$$\begin{aligned} Det &= -ef'\lambda b > 0 \\ Tr &= -\mu + ef'b < 0 \end{aligned}$$

Skott (2005, 2023a chapter 6) analyzes the implications of path dependent norms in greater detail.

¹⁷Exchange is 'contested', using the terminology in Bowles and Gintis (1993).

condition for the wage share determines the stationary value of the employment rate, $e^* = g^{-1}(0)$. The comparative statics are straightforward. An increase in the saving rate out of profits or a fall in the capital output ratio (corresponding to an upward shift in the f -function) reduces the share of profits that is required to maintain the rate of accumulation, while leaving the stationary solution for the employment rate unchanged. The employment rate falls – an increase in the reserve army of the unemployed will be needed to restore discipline in the labor market and prevent an ever-increasing wage share – if workers get stronger and more aggressive for any given employment rate (corresponding to an upward shift in the g -function).

The determination of the size of the reserve army of labor has similarities with the natural rate hypothesis. There are no separate price and wage setting equations, however, and inflation does not appear in the model.¹⁸ Unlike in standard versions of natural rate theory, moreover, the stationary solution is not asymptotically stable. The Goodwin equations (25)-(26) produce conservative fluctuations in employment and wages: the economy follows a closed loop around the stationary solution, with initial conditions determining the amplitude of the cycles.¹⁹

Goodwin’s formalization of Marx’s argument has been highly influential. From a Keynesian perspective, however, the detailed assumptions behind the equations have serious weaknesses: investment is passive, capital is always fully utilized, and there is no role for aggregate demand as a determinant of output, even in the short run.

4.2 Kalecki

Kalecki’s (1943 [1971]) analysis of a political business cycle is explicitly Keynesian but strikingly similar to the Goodwin model in its logical structure. Dismissing the "assumption that a Government will maintain full employment in a capitalist economy if it only knows how to do it", he points to three reasons for opposition from "industrial leaders" to full employment policies: a general dislike of government interference, a dislike of the directions of public spending, and a dislike of the "social and political changes resulting from the *maintenance* of full employment" (1943 [1971], pp. 138-139; italics in original). He goes on to suggest that the first two reasons for opposition may have weakened and that interventions to alleviate the slumps may now be accepted. The third reason, however, retains its full force: the maintenance of full employment will encounter strong opposition. With lasting full employment,

workers would ‘get out of hand’ and the ‘captains of industry’ would be anxious to teach them a lesson. Moreover, the price increases in

¹⁸Desai’s (1973) extension of the Goodwin model introduced inflation issues.

¹⁹The original Goodwin model assumed that the f - and g -functions are both linear. This linearity assumption implies that the time averages of employment and wage share will coincide with their stationary values. This property does not carry over to the generalized, potentially nonlinear version in equations (25)-(26). The closed loops, however, do not depend on linearity (Skott 2023a, appendix 9b).

the up-swing is to the disadvantage of small and big *rentiers* and makes them ‘boom tired’.

In this situation a powerful block is likely to be formed between big business and the *rentier* interests, and they would probably find more than one economist to declare that the situation was manifestly unsound. The pressure of all these forces, and in particular of big business would most probably induce the Government to return to the orthodox policy of cutting down the budget deficit. A slump would follow in which Government policy would again come into its own. (Kalecki 1943 [1971, p. 144; italics in original])

Kalecki did not formalize this argument, but the logical structure seems clear. Driven by aggregate demand (which is taken to be under the control of policy makers), output and employment follow a cyclical pattern: worker militancy and wage demands gradually increase when employment rates are high, while policy makers react to high levels of militancy and inflation by reducing aggregate demand. The proximate sources of fluctuations in employment are different than in the Goodwin model – aggregate demand and endogenous shifts in economic policy take the place of Say’s law and supply-driven movements in the capital stock, while cumulative changes in militancy and inflation take the place of movements in the wage share. But the same mathematical structure may serve as a stylized presentation of the logic of Kalecki’s 1943 argument.

A stripped down Kalecki model Formally, let

$$\hat{e} = f(m); \quad f' < 0 \tag{27}$$

$$\hat{m} = g(e); \quad g' > 0 \tag{28}$$

where the new variable m is an indicator of worker ‘militancy’. Equation (28) says that workers’ self-assurance and aspirations tend to increase when employment is high. Equation (27), conversely, says that high militancy generates a contractionary policy response and falling rates of employment. As in the Goodwin model, there is a unique stationary solution (e^*, m^*) , with the stationarity conditions for e and m implying that $m^* = f^{-1}(0)$ and $e^* = g^{-1}(0)$, respectively. The parameters of the dynamic relation for employment determine the stationary solution for militancy, while those of the dynamic relations for militancy determine the stationary value of employment.

The formalization in equations (27)-(28) makes no direct reference to inflation and, in fact, Kalecki’s own discussion in the 1943-paper is limited to the passing observation in the above quotation that price increases in the upswing are to the disadvantage of rentiers. This relative neglect of the role of inflation is, I believe, a mistake. Inflation acts as a key signal to policy makers and, more importantly, as legitimation of contractionary policy. Without inflation or other signs of overheating, it is unclear why there would be a strong and widespread demand for contractionary policies. The ‘captains of industry’ may want to weaken workers, with contractionary policy and higher unemployment as one

possible option. In the absence of inflation, however, it seems more likely that the pressure from big business will focus on repressive labor market policies or other measures aimed directly at curbing workers' power.

An extended Kalecki model A reformulation of the model to incorporate the central role of inflation makes the growth rate of employment respond to the rate of inflation as well as militancy. The inflation rate, in turn, depends on both employment (the current state of the labor market) and the level of militancy (embodying the cumulative effects of past employment rates on workers' aspirations and strength):

$$\hat{e} = f(\pi, m) \quad (29)$$

$$\pi = \phi(e, m) + \alpha\pi^e \quad (30)$$

$$\dot{\pi}^e = \lambda(\pi - \pi^e) \quad (31)$$

Equations (29)-(31) and the dynamic equation for militancy, equation (28), form the extended Kaleckian model. Equation (28) is unchanged and still defines a unique stationary solution of employment ($e^* = g^{-1}(0)$). As in the stripped-down Kaleckian model, the sustainable long-run rate of employment is determined by the Marxian dynamics. The solutions for m and π^e , however, depend on the rate of pass-through of expected inflation (the value of α). If the pass-through is incomplete, $\alpha < 1$, equation (30) implies that when $\pi^e = \pi$, we have

$$\pi = \frac{\phi(e, m)}{1 - \alpha}$$

Thus, the stationarity condition for employment can be written as

$$f\left(\frac{\phi(e^*, m)}{1 - \alpha}, m\right) = 0 \quad (32)$$

This equation determines a unique value of m^* , and equation (32) now pins down the stationary solution of expected inflation:

$$\pi^{e*} = \pi^* = \frac{\phi(e^*, m^*)}{1 - \alpha}$$

In the case with complete pass-through of expected inflation, $\alpha = 1$, the stationary solutions for m and e can be derived from equations (28) and (30): we need $e = g^{-1}(0)$ and $\phi(g^{-1}(0), m) = 0$. Plugging the solution for m^* into equation (29), the solution for π^* can now be found by solving the equation $f(\phi(\pi, m^*), m^*) = 0$.

The value of α also affects the stability properties of the extended system in equations (28)-(31). If $\alpha = 0$, it is readily seen that the stationary solution becomes unambiguously stable. If $\alpha > 0$, however, the stationary solution may be stable or unstable, depending on the detailed specification of the model. Figure 2 illustrates the pattern of movement for employment and inflation generated by simulations of a case with stability (figure 2a) and instability (figure 2b). In

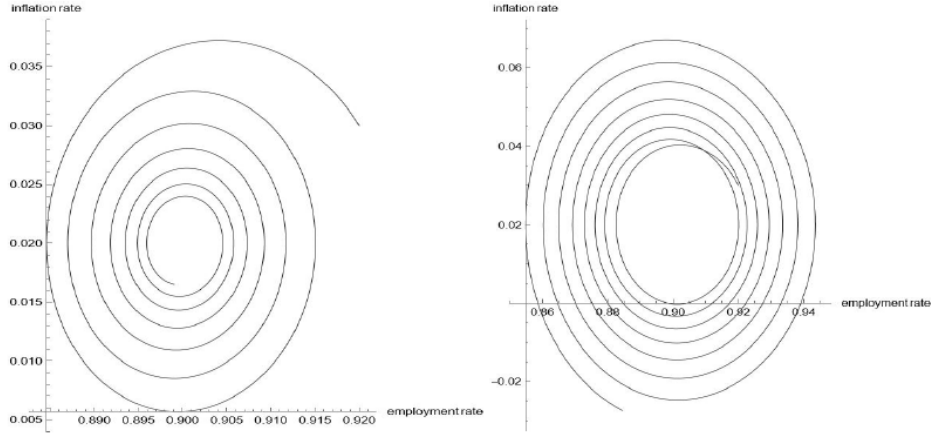


Figure 2a

Figure 2b

Figure 2: Simulated pattern for (e, π) in the extended Kalecki model

Figure 2a the simulation uses $\dot{\pi} = 0.5(e - 0.9) + m + \pi^e$, $\hat{e} = -0.5(\pi - 0.02)$, $\dot{\pi}^e = 0.5(\pi - \pi^e)$, $\dot{m} = 0.15(e - 0.9)$. In figure 2b the sensitivity of \dot{m} to changes in employment has been raised: $\dot{m} = 0.25(e - 0.9)$; the other three equations are unchanged. The initial values are $e = 0.92$, $\pi^e = 0.02$, $m = 0$ in both figures 2a and 2b. The counterclockwise patterns are quite intuitive: inflation increases when high employment strengthens workers, while high inflation prompts contractionary policy and falling employment.

Pure inflation targeting can be obtained as a special case of the extended model by assuming that the growth rate of employment depends only on the inflation rate, that is, by having equation (29) take the form

$$\hat{e} = f(\pi); \quad f(\pi^T) = 0$$

With this specification, stationary solutions require that $\pi^{e*} = \pi^* = \pi^T$ and, using equation (28), we still have $e^* = g^{-1}(0)$. Hence, if $\alpha < 1$, m^* is determined by $\phi(e^*, m) = (1 - \alpha)\pi^T$, and the stationary solution for militancy is increasing as a function of the inflation target. If $\alpha = 1$, the condition for stationarity of e is $\phi(e^*, m) = 0$, and the stationary solution for both employment and militancy become independent of the target rate of inflation.

Discussion The different versions of the Kaleckian model in this section all imply that the stationary solution for employment is determined by the Marxian dynamics. The cumulative effects of high employment rates on militancy and wage formation precludes the influence of Keynesian aggregate demand policy on the employment rate in the long run. The stationarity condition for workers'

militancy pins down the rate of employment, with persistent positive deviations from the stationary solution generating increasing levels of militancy and explosive inflation.

Both Goodwin and Kalecki presented their analysis as theories of the business cycles. In both cases, however, it seems more reasonable to see the models as depicting forces that act at medium- or long-run frequencies: from a short run perspective Goodwin's treatment of output as determined by capital capacity without any attention to aggregate demand makes little sense, and the cumulative changes in worker militancy in Kalecki's version also would seem to play out on a time scale that is much longer than a typical business cycle. The cumulative effects of high employment in the post-Second-World-War period contributed to increasing strike activity, wage inflation, and a radicalization of workers' demands in the 1960s and 1970s; contractionary policies, neoliberal attacks on unions and the gradual dismantling of labor-friendly structures in order to make labor markets more 'flexible' followed from the late 1970s, when powerful blocks of business, rentiers and economists declared the situation manifestly unsound, to use Kalecki's expression. The overall pattern fits Kalecki's predictions remarkably well, but the process describes a long wave rather than a short business cycle.²⁰

5 A hybrid model

Keynesian hysteresis and Kaleckian cumulation are similar in that both posit endogenous changes in workers' attitudes and aspirations. Both social norms and workers' militancy influence wage setting, with wage inflation positively related to both the fairness norm a (in the Keynesian story) and militancy m (in the Kaleckian story). Conceptually, however, norms and militancy are distinct and follow different dynamics.

The fair growth rate of nominal wages ($a + be + \pi^e$) can be viewed as a reference point, with militancy affecting workers' ability and willingness to fight for wage growth above this rate or, alternatively, if they have become demoralized by prolonged periods of high unemployment, their willingness to accept wage growth below the fair reference rate.

The willingness to fight can take many forms, including both organized actions (like strikes or working to rule) and reactions by individual workers if requests for fair wage increases fail to be met (like reduced effort or a willingness to quit and seek alternative work). But the ability to obtain nominal wage increases also depends on firms' willingness to resist wage demands and fight back (using lockouts, for instance, layoffs or credible threats to outsource or

²⁰Post-Keynesian writers have recognized the blindness of Keynes and traditional Keynesian economics to class conflict; Palley (2023) expresses this view powerfully. But although emphasizing distributional conflict, the role of conflict is also somewhat limited in many post-Keynesian models: conflict mainly becomes important in these models because it influences the distribution of income, which, in turn, is seen as a critical determinant of the growth rate of aggregate demand and, without binding supply-side constraints, as the driver of economic growth; see Skott (2017) for a critique of models of 'wage-led growth'.

close plants). Thus, the militancy variable that enters the wage setting equation must reflect the balance of power between workers and capital; for convenience, however, I shall still refer to this variable as ‘militancy’.

To capture the influence of both social norms and militancy on wage setting, m can be included as a determinant of the growth rate of nominal wages in equation (13).²¹ Retaining a linear specification, suppose that

$$\hat{w} = a + be + cm + \pi^e \quad (33)$$

As in section 3, the fair growth rate of real wages is given by $a + be$, and the dynamics of a are described by

$$\dot{a} = \mu((\hat{w} - \pi) - (a + be)) \quad (34)$$

Using equation (33)-(34), equation (15) now implies that, instead of (15), we have

$$\dot{a} = \mu(\pi^e - \pi + cm) \quad (35)$$

Equation ((28)) describing the change in m may also require modification. In order to capture the balance of power between workers and capital, it would be reasonable to include variables that influence changes in firms’ willingness to fight demands for high wage increases; that willingness may be enhanced if the balance of power has shifted towards workers, suggesting a possible negative feedback effect from the level of m to \dot{m} . Other variables may influence firms and/or workers. The level of inflation, for instance, may make price changes more unpredictable, increase financial insecurity and dampen workers’ confidence, that is, $\dot{m} = g(e, \pi)$. As another possibility, if changes in the markup are influenced by the balance of power between workers and firms, as suggested by Hein (2023) and other post-Keynesian contributions, we would get a dynamic equation for the wage share, and the change in the balance of power could, in turn, depend inversely on the wage share; $\dot{m} = g(e, \omega)$.

Allowing these (and, with a little imagination, many other) variables to influence the change in militancy would add new degrees of freedom and increase the range of possible scenarios. Many of these scenarios could be plausible *a priori*, but we have no real evidence on the relative magnitudes of the various effects, leaving scope for endless mathematical exercises with different specifications. In the absence of stronger empirical guidance, the returns from exercises of this kind diminish quite quickly and, keeping it simple, I shall limit the analysis to three examples that illustrate the sensitivity of outcomes to specifications.

Policy makers pursue inflation targeting in all three examples, raising or lowering the growth rate of employment depending on whether inflation falls below or above the target rate; inflation expectations are adaptive; there is complete pass-through from expected to actual inflation, and the dynamics of a is determined by the deviation of actual real wage growth from the prevailing norm. The examples differ only with respect to the specifications of the dynamics for m and the effects of the level of m on wage setting and inflation.

²¹Equivalently, the influence of path dependent wage norms could be added in the Kaleckian inflation equation (30).

Example A: In this example militancy is added as an influence on inflation, with the dynamics of militancy determined by the employment rate as in equation (28). Formally,

$$\hat{e} = f(\pi); \quad f(\pi^T) = 0, \quad f' < 0 \quad (36)$$

$$\dot{m} = g(e); \quad g' > 0 \quad (37)$$

$$\pi = \hat{w} - q = a + be + cm + \pi^e - q; \quad b > 0, c > 0 \quad (38)$$

$$\dot{\pi}^e = \lambda(\pi - \pi^e); \quad \lambda > 0 \quad (39)$$

$$\dot{a} = \mu(\pi^e - \pi + cm); \quad \mu > 0 \quad (40)$$

The stationarity of the employment rate requires that $\pi = \pi^T$ (equation (36)) and with $\pi = \pi^T$, equation (39) implies that $\pi^e = \pi = \pi^T$ at the stationary point. Thus, using the stationarity condition for a (equation (40)), we must have $m = 0$, and, using (37), a constant level of militancy implies that $e^* = g^{-1}(0)$. The stationary solution for a now follows from the Phillips curve (38): we must have $a = -bg^{-1}(0)$.

In this example changes in aggregate demand policy (changes in the inflation target π^T) can have no lasting effect on the employment rate. An increase in the inflation target raises the stationary values of actual and expected inflation *pari passu* but leaves the stationary solutions of e, a, m unchanged.

As in the pure Kaleckian system, the stability properties of the stationary solution depend on the parameter values: a high sensitivity of changes in militancy to employment and rapid adjustment speeds of wage norms (high values of g' and μ) tend to destabilize the stationary solution, while rapid adjustments of inflation expectations (high values of λ) are stabilizing.

The simulations in figures 3a and 3b illustrate a stable and unstable case, respectively. In figure 3a the equations are specified as $\hat{e} = 0.5(0.02 - \pi)$, $\pi = a + 0.5(e - 0.9) + m + \pi^e$, $\dot{\pi}^e = 0.5(\pi - \pi^e)$, $\dot{a} = 0.2(\pi^e - \pi + m)$, $\dot{m} = 0.1(e - 0.9)$. Only the equation for \dot{m} has been changed in figure 3b; it now reads $\dot{m} = 0.2(e - 0.9)$. The initial values are $e = 0.92$, $\pi^e = 0.02$, $m = 0$, $a = 0$ in both figures 3a and 3b.

Example B Modifying the dynamics of m , the change in m is now determined by employment and inflation:

$$\dot{m} = g(e, \pi); \quad g_1 > 0, g_2 < 0 \quad (41)$$

Equation (41) replaces equation (37), with all other equations in example A kept unchanged. The stationarity of the employment rate, the rate of inflation and the fairness variable a still imply that $\pi^e = \pi = \pi^T$ and $m = 0$. But equation (41) now determines the stationary solution for employment as a function of inflation:

$$g(e, \pi^T) = 0$$

Using the implicit function theorem, it follows that the stationary solution for employment is an increasing function of the inflation target. Thus, aggregate

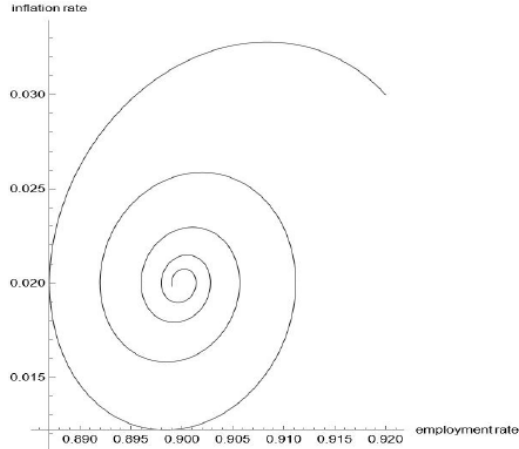


Figure 3a

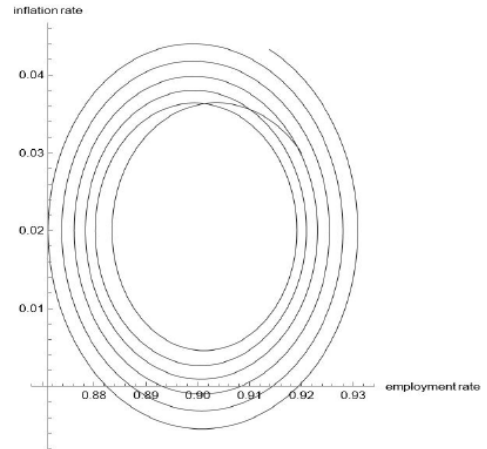


Figure 3b

Figure 3: Simulation of the hybrid model, example A

demand policy has real effects: as in the models with incomplete pass-through in section 2 and the hysteresis model in section 3, there is a long-run tradeoff between inflation and unemployment. The tradeoff is made possible by adjustments in the stationary solution for the fairness variable a in combination with the introduction of inflation effects on militancy. Inflation effectively acts as a disciplining device.

Figures 4a and 4b depict the simulations of stable and unstable cases. In both simulations the inflation target has been raised from 0.02 to 0.04, with the initial values corresponding to the stationary solution associated with an inflation target of 0.02. Compared to the specifications in the simulations of example A, the equations for \hat{e} and \dot{m} have been changed: the employment rate now moves in response to the deviation of inflation from 0.04 ($\hat{e} = 0.5(0.04 - \pi)$), while the change in militancy is given by $\dot{m} = 0.2(e - 0.9) - 0.05(\pi - 0.2)$ in the stable case and by $\dot{m} = 0.4(e - 0.9) - 0.05(\pi - 0.2)$ in the unstable case.

Example C In this example nominal wage demands and inflation are unaffected by militancy. Equations (36)-(37) and (39)-(40) are retained from example A, but the coefficient c in the Phillips curve is set to zero, and equations (38) and (40) simplify to:

$$\pi = a + be + \pi^e - q \quad (42)$$

$$\dot{a} = \mu(\pi^e - \pi) \quad (43)$$

The subsystem consisting of equations (36), (39), (42) and (43) is self-contained, with e, a, π^e evolving independently of m . The stationarity conditions for e, π^e, a

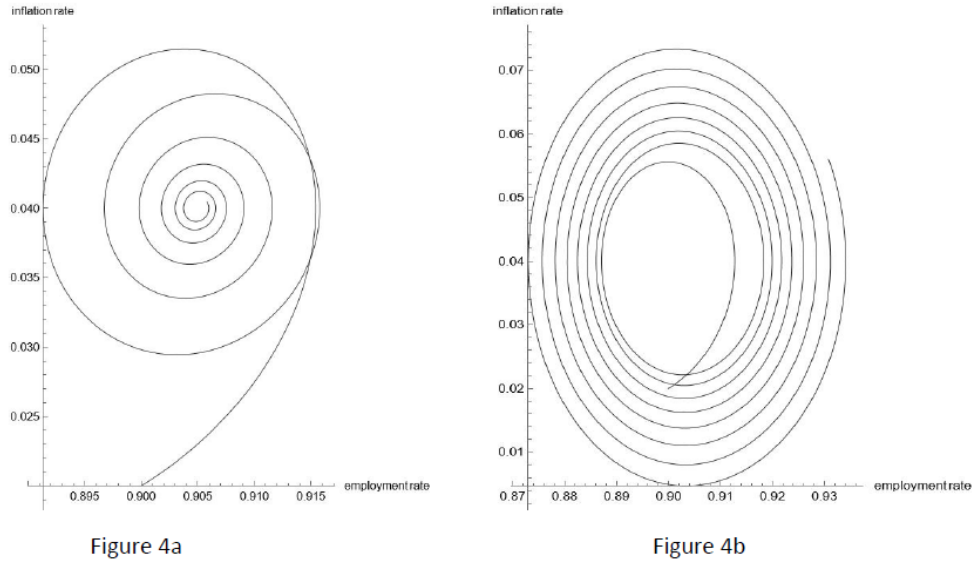


Figure 4: Simulation of the hybrid model, example B.

are as in section 3, with the stationary solution for employment as an increasing function of the inflation target. Indeed, the subsystem reproduces the section-3 model with a Taylor rule and path dependent wage norms.

Intuition The results in examples A-C are quite intuitive. In example A, the rate of change of militancy is fully determined by the rate of employment, and inflation is a linear, increasing function of militancy and employment. Under these assumptions, there will be no plausible way for aggregate demand policy to influence the stationary solution for employment.

The presence of other endogenous variables in the equation for m eliminates the first assumption, thereby allowing long-run aggregate demand effects on the stationarity condition for m . It is not obvious what other variables should be included in the determination of the dynamics of militancy, but example B provides a simple illustration of this possibility.

Example C eliminates the second assumption. This example may seem like cheating: if we drop the effects of workers' relative power on inflation, it is not surprising that the results should be the same as before the introduction of the Kaleckian dynamics.²² Dropping inflation effects need not, however, exclude a cumulative Marxian mechanism. Class conflict plays out in many areas, and,

²²The absence of any effect of militancy on wage demands is clearly extreme. The assumption can be softened, however, without affecting the qualitative conclusions: positive but bounded long-run effects of workers' militancy on wage demands are compatible with non-explosive inflation as long as inflation stays below Rowthorn's threshold (see section 2.2).

as argued in the concluding section, a narrow focus on the wage struggle would impoverish the analysis.

6 Concluding comments and observations

The term ‘conflict inflation’ defines, vaguely and without much precision, a diverse set of theories that emphasize class interests and power relations in some form. The implications of this general approach depend crucially on the specifications of the objectives and constraints (including power relations) facing wage and price setters, policy makers and labor movements, issues on which there are disagreements and tensions within the post-Keynesian and neo-Marxian traditions.

The post-Keynesian story embodies conflict inflation, but the implications for aggregate demand policy are minimized by the specific assumptions: adaptive wage norms and aspirations allow aggregate demand reductions in unemployment without sparking explosive inflation. Marxian mechanisms of cumulative change in workers’ power, by contrast, imply that explosive inflation will be the likely consequence of high employment. The outcome in hybrid model depends on detailed specifications; sustained Keynesian expansions lose their shine if the Marxian mechanism dominates in the long run.

This paper does not pretend to resolve the tensions or provide definite answers. The aim of this concluding section, more modestly, is to offer a few tentative comments on some possible implications of the coexistence of Keynesian adaptation and Marxian cumulation.

Keynesian economists, first, have a strong case when they reject the standard natural-rate hypothesis. Great harm can be and has been done by macroeconomic policies that take for granted the existence of a well-defined and stable accelerationist or new Keynesian Phillips curve; examples include needlessly high unemployment rates in many European countries in the 1980s and 1990s and the slow recovery (with high unemployment and/or low participation rates) in the US and elsewhere after the financial crisis of 2007-2008. But the claims for employment hysteresis should not be pushed too far.

Mature economies like the US, Germany or Japan would come up against severe labor supply constraints very quickly if an MMT-inspired reliance on fiscal expansion were used to carry out a progressive agenda involving significant improvements for low-income groups.²³ Even relatively modest programs aiming to raise incomes at the lower end of the distribution, offer free healthcare and heavily subsidized quality child care to everyone, and address environmental problems and climate change will have to accept that some current uses of resources must be cut, be they luxury yachts and private planes, McMansions,

²³Developing economies with large amounts of hidden underemployment in informal sectors can also face supply-side problems following large shocks to aggregate demand. In these countries, however, the constraints come primarily from capital and from inflationary pressures when positive demand shocks lead to violations of prevailing relative-wage norms (Martins and Skott 2021).

military spending or something else.

Deficit spending may look like an easy alternative. Kelton (2019), for instance, recommends that "we simply invest in programs to benefit the non-rich (student-debt forgiveness, free child care and so on) without treating the rich as our piggy bank" since this option "is clearly better for both groups". This attempt to obviate distributional conflict and opposition from "the rich" severely limits the scope for reform or, if ambitious programs are attempted, will be likely to founder as supply-side constraints, rising inflation and/or balance of payments crises incite rising opposition and calls for deflationary policy. With high inflation rates, moreover, the opposition is likely to come from workers as well as from rentiers and capital. By ignoring the hard conflicts and relying on deficit spending, the whole agenda will have been discredited.

Second, the presence of feedback effects from the labor market to aggregate demand can play a key role in short-run business cycles. But business cycle models, including those in Skott (1989, 2015, 2023a, 2023b), typically evade the questions addressed in this paper: they incorporate neither path dependent wage norms nor cumulative effects of high employment on militancy. These omissions do not invalidate the models; there is, I would argue, substantial behavioral and empirical support for the assumptions underlying the cyclical mechanisms in Skott (2023a, 2023b). But the omissions imply that the long-run comparative statics of the models – the effects on the stationary solution of shocks that shift one or more of the equations – should be treated with great caution: these long-run effects will be affected by the adaptive and cumulative forces that are omitted from the models, potentially making the long-run comparative statics highly misleading. The business cycles may take place around a long-run trend or long wave, about which the cycle models have nothing to say.²⁴

Both Keynesian hysteresis associated with induced changes in wage norms and the Kaleckian emphasis on the cumulative effects of prolonged high employment on discipline in the factories introduce endogenous shifts in workers' behavior. The shifts are quite different, however, operating almost in direct opposition to each other. The two mechanisms can be combined in the same formal model, but a plethora of *a priori* plausible specifications suggests that humility is needed. While there are strong reasons to reject the natural-rate theories, the uncomfortable fact remains that we do not have a clear and convincing, alternative theory of the forces behind inflation, especially in the medium and long run. The problems associated with the systematic Keynesian and Marxian forces analyzed in this paper are compounded by unpredictable political and ideological shifts with potentially major impact on the forces that shape the distributional conflict. The trajectory of inflation is historically and institutionally contingent, as emphasized by post-Keynesians, but this statement, unfortunately, does not tell us very much.²⁵

²⁴Skott (1993) and Ryo (2010) present models that integrate short cycles along the lines of Skott (1989, 2023a) with long waves. Many other contributions have introduced distinctions between the determination of short-run dynamics and long-term trends, e.g. Rada and Kiefer (2016) and Stockhammer and Michell (2017).

²⁵Like Post-Keynesian and neo-Marxian contributions, the neoliberal consensus that took

Third, unionization tends to reduce wage inequality (Pontusson 2013),²⁶ but there is a strong association between the degree of centralization of wage setting and wage compression (Freeman 1988, Wallerstein 1999). Thus, the inequality effect appears to be mediated in large part by increased centralization. If the unions are fragmented and focus primarily on increasing wages for their own members, inequality may not decrease. A focus on wages, moreover, may bring little or no change in the functional distribution of income.²⁷

Both a firm's monopsony power and ability to keep money wages low and its monopoly power and markup may increase if firms collude. But no such collusion is needed to make firms resist wage increases: each firm has incentives to keep its own wages as low as possible. Nor is collusion needed to thwart workers' hopes of increasing average real wages by raising nominal wages: if nominal wages increase, a profit maximizing firm operating under conditions of imperfect competition will raise its prices. If all firms maintain their markups, each acting in its own self-interest, a general increase in nominal wages leaves real wages unchanged.²⁸ As each union tries to maintain or improve its own relative and real wage, the main result becomes a spiral of inflation, leading to contractionary policy and higher unemployment.

In his 1943-paper, Kalecki arguably underestimated the role of inflation in the backlash against sustained levels of high employment, including the danger it poses for labor unions. The neoliberal resurgence, most notably in the UK and the US following the election victories of Margaret Thatcher and Ronald Reagan in 1979 and 1980, marked the beginning of policies and institutional changes that have weakened labor unions and rolled back parts of the welfare state. The widespread support for this political shift, also among low and middle income groups, may seem surprising. It must be seen, however, against the backdrop of high and rising inflation.

Inflation and strike activity had been rising in both the US and the UK since the mid 1960s, with inflation peaking at 24 percent in the UK and 13.5 percent in the US. The UK miners' strikes in 1972 and 1974 were emblematic. Following a seven week strike in 1972, the miners gained a 27 percent pay increase; another strike in 1974 caused the conservative government to declare a state of emergency and call a general election, with an incoming labor government agreeing to a 35 percent increase. These victories for the relatively well-paid miners led to pay demands from other groups, culminating a few years later with more than 2000

hold from late 1980s stressed institutional contingencies, with the OECD 'Jobs Study' as an influential statement (OECD 1994). But the simplistic mantra – deregulation – served mainly to weaken workers and increase inequality. Labor market regulation need not have detrimental effects on employment and/or inflation (Howell et al. 2006).

²⁶Freeman and Medoff (1984) found that, despite low union coverage, unions reduced inequality in the US.

²⁷If firms maintain a constant markup, any rise in the relative wage of high-wage groups of workers will also tend to reduce the real wage of low-wage workers, not just their relative wage.

²⁸This statement is subject to caveats in open economies in which imports allow a rise in the real wage if the real exchange rate appreciates. But balance of payments problems typically undermine the sustainability of overvalued exchange rates and high employment.

strikes during the ‘Winter of Discontent’ in 1978-79. Aggressive wage demands, high inflation and strikes that affected important services provided the perfect opportunity for neoliberal ideas to take hold. Inflation led to widespread support for contractionary monetarist policies, while measures to undermine the power of labor unions could be motivated by the need to address the sources of inflation and prevent disruptive strikes.

Fourth, recognizing the futility of fighting for nominal wage increases as well as the dangers of inflation, centralized labor unions may show wage restraint and adjust wage demands with an eye to their effects on employment, relative wages patterns and the international competitiveness of export industries, a phenomenon observed clearly in the Scandinavian case.²⁹ This reorientation away from a pure wage struggle can be combined with building support for political and institutional changes that challenge the capitalist logic.

The welfare state, as it has developed in some European countries, is far from perfect, but its achievements cannot be brushed aside as minor modifications of a fundamentally unchanged capitalist system. The establishment of citizenship rights to healthcare, education and retirement pensions as well as insurance against unemployment and other risks have made the allocation of substantial shares of total output independent of market incomes and the ability to pay. This de-commodification of economic activities should not be dismissed by socialists as inconsequential.

Capitalism is sometimes viewed as a monolithic system admitting of no fundamental change without the nationalization of the means of production and the replacement the markets by central planning. This view is misleading. Many activities in predominantly capitalist societies take place outside the market in communities, households, cooperatives and the public sector, and activities within the capitalist sector are often subject to regulation. Perceptions of capitalism as monolithic will only block attempts to move, step by step, to reduce the power of market forces and expand the parts of the economy that are democratically controlled.³⁰

Reforms and institutional changes in the direction of de-commodification and democratic control require political pressure, and an organized labor movement can be and often has been pivotal in generating this pressure (Esping-Andersen 1990, Korpi 2006). The changes have sometimes been the direct result of social pacts between governments, employer organizations and labor unions, with labor unions showing restraint in wage negotiations in return for legislative progress on other issues (Ahlquist 2010). The most pervasive influence may more indirect, however: unions contribute to shaping public opinion and provide organizational muscle. They typically engage in various forms of outreach and

²⁹Bhuller et al. (2022) and Barth et al. (2023) discuss the Scandinavian case. See also Calmfors and Driffill (1988) and Skott (1997) for analyses of the implications of union structure for employment and inflation.

³⁰The identification of socialism with the nationalization of the means of production and central planning puts the cart before the horse. Central planning was envisaged, wrongly, as the best (or only) instrument to advance a socialist vision of universalized human freedom, equality, material security and democracy (Auerbach 2016, Auerbach and Skott 2021). Dragsted (2021) discusses ‘Nordic socialism’ from a similar perspective.

education, with evidence showing that union members are better informed than non-members about political issues (Iversen and Soskice 2015). Union membership also encourages more active political participation, including greater voter turnout (Pontusson 2013). Labor unions give voice to workers' demands and, importantly, strong unions have the power to back up their demands, with general strikes as the ultimate weapon.³¹

Any attempt to advance a broad agenda of political and institutional change is likely to be met by fierce opposition from the economic elite, undoubtedly supported by economists claiming that interference with free markets will have devastating consequences. But unlike the profit maximizing response to nominal wage increases, the organization of this opposition involves collective action problems. The corporate elite and other rich individuals may have a keen interest, for instance, in defeating proposals for high-quality, affordable child care for all, especially if it is to be financed by progressive taxation borne mainly by the rich. But they each have an incentive to free ride rather than commit substantial resources to fight against the reforms.

The collective action problem will not prevent opposition to reforms that reduce inequality and improve the lives of the majority of people. It would be a mistake, however, to dismiss the collective action problem, especially in capitalist societies that are relatively equal and have many small firms. If the owners of these firms as well as many managers and rentiers live in the same neighborhoods, send their children and grandchildren to the same schools and get treated in the same hospitals as the population at large, they may be persuaded to support measures that improve these services, even if these improvements impose greater equality through taxation, regulation and other interventions that could hurt their profits and pretax incomes. Conversely, high levels of inequality and segregation along with extreme concentration of power in large corporations alleviate the capitalists' collective action problem, enhancing their political power. As in the case of the labor movement, the power of the elite may in large part be exerted indirectly by the control of information flows and the ability to set the agenda of political discourse; billionaires own newspapers, tv stations and social media, advertisers influence news coverage, dark money finances political campaigns, corporations and private donors fund think tanks, and their donations influence university research.

These very real barriers to fundamental change do not, however, make a narrow focus on wages any more promising. While inflation following aggressive nominal wage demands are likely to generate widespread support, also among workers, for contractionary aggregate demand policy, the elite may find it harder to sustain a broad constituency of support against child care for all to allow low taxes on the rich.

In short, inflation in capitalist economies is closely linked to distributional conflict. But conflict inflation is only one aspect of social conflict, and focusing primarily on the wage struggle plays into the hands of capital. Fighting for

³¹ Ahlquist (2017) provides a survey of the literature on the activities and political effects of labor unions.

higher wages may succeed in raising the growth rate of nominal wages when employment is high, but the ensuing inflation undermines support for the aggregate demand policy that sustains high employment. The homeostatic forces of capitalism work well in this area, even if the mechanism – induced changes in aggregate demand – is different from the one described by Marx in his ‘general law of capitalist accumulation’ and formalized by Goodwin (1967). Aggregate demand was central to Kalecki’s analysis. But his prescient 1943 paper paid insufficient attention both to the centrality of inflation as in influence on aggregate demand policy and to the multidimensional character of class conflict. Taking these elements into account, it may be advantageous for labor movements to prioritize political and institutional changes rather than focus mainly on increasing wages.

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