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## Rethinking conflict inflation: The hybrid Keynesian-NAIRU character of the conflict Phillips curve

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# FMM WORKING PAPER

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## RETHINKING CONFLICT INFLATION: THE HYBRID KEYNESIAN - NAIRU CHARACTER OF THE CONFLICT PHILLIPS CURVE

Thomas Palley<sup>1</sup>

### ABSTRACT

This paper presents a new formulation of conflict inflation labeled the “pass-through” approach, which contrasts with the existing “pressure balance” approach. The model generates Phillips styled inflation - unemployment dynamics that are a hybrid of Keynesian and NAIRU dynamics. Conflict inflation arises when economic activity rises above the consistent claims activity level, and it is subject to self-propelled conflict accelerationism. Immediately below that level, inflation holds constant at the expected rate. At low activity, accelerating disinflation can develop. Worker militancy, corporate aggressiveness, negative supply shocks, and upward commodity price shocks all contribute to conflict inflation. They do so via two channels. First, they increase the intensity of conflict by increasing the degree of income claims inconsistency. Second, they lower the activity level at which conflict inflation kicks in. Policy can affect the consistent claims economic activity threshold at which conflict inflation kicks in. However, there may be adverse interaction effects with aggregate demand. Conflict inflation is best addressed by unconventional policies, such as incomes policy. Institutional developments in the Neoliberal era have likely reduced the relevance of conflict inflation.

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# **Rethinking conflict inflation: the hybrid Keynesian - NAIRU character of the conflict Phillips curve**

## **Abstract**

This paper presents a new formulation of conflict inflation labeled the “pass-through” approach, which contrasts with the existing “pressure balance” approach. The model generates Phillips styled inflation - unemployment dynamics that are a hybrid of Keynesian and NAIRU dynamics. Conflict inflation arises when economic activity rises above the consistent claims activity level, and it is subject to self-propelled conflict accelerationism. Immediately below that level, inflation holds constant at the expected rate. At low activity, accelerating disinflation can develop. Worker militancy, corporate aggressiveness, negative supply shocks, and upward commodity price shocks all contribute to conflict inflation. They do so via two channels. First, they increase the intensity of conflict by increasing the degree of income claims inconsistency. Second, they lower the activity level at which conflict inflation kicks in. Policy can affect the consistent claims economic activity threshold at which conflict inflation kicks in. However, there may be adverse interaction effects with aggregate demand. Conflict inflation is best addressed by unconventional policies, such as incomes policy. Institutional developments in the Neoliberal era have likely reduced the relevance of conflict inflation.

*Keywords:* conflict inflation, wage share, mark-up, accelerationism, Phillips curve.

*JEL references:* E12, E24, E31, E61.

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## **1. Introduction: the revival of conflict inflation**

The acceleration of inflation in the wake of the covid pandemic has revived interest in the theory of conflict inflation, which some claim is behind the post-pandemic acceleration. Conflict inflation has long been a centerpiece of Left Keynesian and Post Keynesian macroeconomics. The seminal founding contribution is by Rowthorn (1977). Other significant contributions are by Myatt (1986) and Dutt (1987). Interestingly, there is also now incipient interest in conflict inflation coming from mainstream quarters. Thus, Blanchard (6:24pm, December 30, 2022) began an extended Twitter thread on inflation as follows:

“A point which is often lost in discussions of inflation and central bank policy. Inflation is fundamentally the outcome of distributional conflict, between firms, workers, and taxpayers. It stops only when the various players are forced to accept the outcome.”

That has been followed up by the prestigious establishment NBER releasing a working paper by Lorenzoni and Werning (2023) titled “Inflation is conflict”.

This paper revisits the theory of conflict inflation using the theoretical framework developed by Myatt (1986) and extended by Palley (1996, chapter 11). The paper presents a new formulation of conflict theory that is labelled the “pass-through approach”. Conflict inflation provides a coherent theory of a particular kind of inflation. The proposed theory has a hybrid mix of Keynesian characteristics and characteristics associated with Friedman’s (1968) non-accelerating inflation rate of unemployment (NAIRU). Conflict inflation generates a pattern of inflation – unemployment outcomes that has some resemblance to the Phillips curve, but the explanation is fundamentally different from Phillips curve logic.

The paper argues the claim that “all inflation is conflict inflation” is mistaken. All inflations involve price-wage spirals but not all price-wage spirals represent conflict inflations.

Conflict inflation requires a particular configuration of institutional conditions. Developments in the Neoliberal era have undermined the prevalence of such conditions, suggesting conflict inflation has become less relevant.

The balance of the paper is structured as follows. Section 2 provides motivation for the paper and contrasts the existing approach to conflict inflation with the proposed pass-through approach. Section 3 details the microeconomics of the pass-through approach. Section 4 details the microeconomics of alternative wage bargaining regimes. Section 5 places that micro economics in a macroeconomic context, and it shows how conflict inflation generates a short-run Phillips pattern which is subject to endogenously generated accelerationism. Section 6 shows how supply and commodity price shocks trigger conflict inflation. Section 7 shows how conflict inflation generates inflation-unemployment patterns that produce a hybrid Phillips curve with Keynesian and NAIRU characteristics. Section 8 discusses some policy implications of conflict inflation. Section 9 discusses the relevance of conflict inflation. Section 10 concludes the paper.

## **2. Motivation for the paper**

This section provides motivation for the paper. There exists a large literature on conflict inflation, which is clearly and succinctly surveyed by Lavoie (2014, chapter 8). This paper offers an alternative to that literature, with the proposed alternative generating a different type of Phillips pattern with different policy implications.

The starting point is the existing approach to conflict inflation which can be labelled the “pressure balance” approach. The pressure balance model below is based on Dutt (1987). Workers determine nominal wage inflation and firms determine price inflation. It is described by two equations given by:

$$(1.a) \quad \omega = \Lambda[w^{\wedge} - w_{-1}] + \lambda^{\wedge}\pi_{-1} \quad \Lambda > 0, 0 < \lambda^{\wedge} < 1$$

$$(1.b) \pi = K[w_{-1} - w^*] + \lambda^K \omega \quad K > 0, 0 < \lambda^K < 1$$

$\omega$  = nominal wage inflation,  $\pi$  = price inflation,  $w^\wedge$  = workers' target real wage,  $w$  = actual real wage,  $w^*$  = firms' target real wage,  $\lambda^\wedge$  = coefficient of feedthrough of lagged inflation into workers' nominal wage inflation,  $\lambda^K$  = coefficient of feedthrough of lagged inflation into firms' price inflation. The subscript -1 refers to the prior period. Equation (1.a) determines nominal wage inflation which is set by workers. Equation (1.b) determines price inflation which is set by firms. The magnitudes of the coefficients  $\Lambda$  and  $K$  are interpreted as reflecting workers' and firms' bargaining power, respectively. The magnitudes of the inflation feedback coefficients ( $\lambda^\wedge$ ,  $\lambda^K$ ) are also claimed to represent bargaining power.

The two equations reveal the pressure balance logic. Nominal wage inflation pressure comes from workers via the gap between their target and the actual real wage and compensation sought for past inflation. Price inflation pressure comes from firms via the gap between the actual real wage and firms' target and compensation sought for nominal wage inflation.<sup>1</sup> The real wage is constant when the pressure from each side balances, which also determines the inflation rate.

Equilibrium obtains when  $\omega = \pi$  and  $\pi = \pi_{-1}$  and the equilibrium real wage is:

$$(1.c) w = [Aw^\wedge + Bw^*] / [A+B] = w(w^\wedge, w^*, \Lambda, K, \lambda^\wedge, \lambda^K)$$

$$w_{w^\wedge} > 0, w_{w^*} > 0, w_\Lambda > 0, w_K < 0, w_{\lambda^\wedge} > 0, w_{\lambda^K} < 0$$

where  $A = \Lambda / [1 - \lambda^\wedge]$  and  $B = K / [1 - \lambda^K]$  The equilibrium real wage is a positive function of workers' real wage target, a positive function of firms' real wage target, a positive function of

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<sup>1</sup> Equations (1.a) and (1.b) constitute a stable system of simultaneous first order difference equations.

workers' bargaining power, and a negative function of firms' bargaining power.<sup>2</sup>

The model can then be expanded to include endogenous targets that are affected by the state of the macro economy. That creates an expanded "pressure balance" system. The real wage affects the economy which affects workers' and firms' target wages, thereby impacting conflict inflation and the real wage. The overarching "pressure balance" architecture remains. However, the nexus connecting the actual real wage, the economy, and real wage targets adds another channel for equalizing nominal wage and inflation pressure.

The current paper makes several departures from that framework. The first and most important is the adoption of a different approach to conflict inflation which is labelled the "pass through" approach. The "pressure balance" approach assumes both sides are disappointed and neither hits its target. That mutual disappointment is critical as it provides the balancing mechanism. The current paper assumes one side is dominant and achieves its target, which creates a different conflict inflation dynamic in which the subordinate side is disappointed and keeps trying to hit its target, and the dominant side passes through the higher prices or nominal wages sought by the subordinate side.

Second, the existing literature assumes workers only partially incorporate past inflation ( $0 < \lambda^W < 1$ ) and firms only partially incorporate current nominal wage inflation ( $0 < \lambda^K < 1$ ), whereas the current paper assumes full incorporation. Algebraically, partial incorporation is a minor amendment whereby the coefficient of inflation expectations is set at less than one. However, economically, its effect is critical and its justification questionable. It implicitly changes how real income targets are set. As shown below, it means workers' real wage and firms'

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<sup>2</sup> The model can be interpreted as being a "split the difference" model. If firms raise their target wage, that raises the floor and reduces the difference from below so that the real wage rises. If workers raise their target wage, that increases the difference from above so that the real wage is pulled up relative to its floor.

profit share targets fall with inflation. That assumption creates space for a lower unemployment rate without triggering conflict accelerationism, thereby enabling a Phillips styled trade-off.

### **3. The microeconomics of the pass-through approach to conflict inflation**

This section presents the microeconomics of the pass-through approach, and subsequent sections explore its macroeconomic and policy consequences. The starting point is description and specification of the model economy, which begins with the supply-side where conflict inflation originates.

The supply-side is described by a standard linear production function with unit labor cost mark-up pricing, as follows:

$$(2.a) \ y = aN \quad a > 0$$

$$(2.b) \ N \leq L$$

$$(2.c) \ P = [1 + m]W/a$$

$$(2.d) \ s_w = 1/[1 + m]$$

$$(2.e) \ s_{\Pi} = m/[1 + m]$$

$$(2.f) \ s_w + s_{\Pi} = 1$$

$y$  = real output,  $a$  = output per unit of labor,  $N$  = employment,  $L$  = labor supply,  $P$  = price level,  $m$  = mark-up,  $W$  = nominal wage,  $s_w$  = wage share of output, and  $s_{\Pi}$  = profit share. Equation (2.a) is the aggregate production function. Equation (2.b) is the labor supply constraint on employment. Equation (2.c) is the mark-up pricing rule. Equations (2.d) and (2.e) determine the wage and profit share, which are constrained to sum to unity by equation (2.f).

Inflation analysis is traditionally conducted in unemployment rate – inflation space, which is how Phillips (1958) originally estimated the Phillips curve relationship. However, the unemployment rate ( $u$ ) can be interpreted as an inverse measure of economic activity, and the



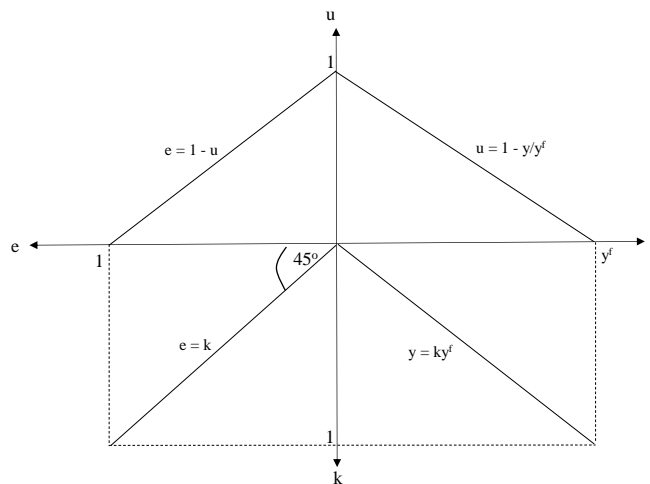
Phillips curve can also be constructed using other measures such as the employment rate ( $e$ ), capacity utilization ( $k$ ), and output ( $y$ ). Figure 1 shows the relationship between the unemployment rate ( $u$ ) and those other measures. Capacity utilization is defined as

$$(3) k = y/y^f$$

$$(4) y^f = aL$$

$y^f$  = potential output. In effect, the measures are isomorphic. Given that, the rest of the analysis is conducted using the level of output. That simplifies the presentation, and it also surfaces the critical significance of aggregate demand (AD) and its characteristics.

Figure 1. The relationship between the unemployment rate ( $u$ ), output ( $y$ ), the employment rate ( $e$ ), and capacity utilization ( $k$ ).



The rest of this section presents the model of conflict inflation which is based on Myatt (1986) and Palley (1996, chapter 11), but is modified to include inflation expectations and a different target setting process. There are two possible bargaining regimes: a firm dominant regime and a worker dominant regime. If firms are dominant, they get to realize their target mark-up. If workers are dominant, they get to realize their target real wage. The dominant agent

has a second mover advantage and gets to set their demand knowing the other agent's demand.

### 3.1 Worker dominant regime.

In a worker dominant regime, the microeconomic rules of price and nominal wage setting are as follows. Firms set prices based on the expected nominal wage. Workers then set the nominal wage based on the actual price. The next period, firms reset prices to take account of the higher nominal wage and the process repeats. Consequently, workers drive inflation and firms play catch-up.

Given those rules, nominal wages and prices evolve as follows:

$$(5.a) P_t = [1 + m^*] W_t^e / a$$

$$(5.b) W_t = w^{\wedge} P_t$$

$$(5.c) w^{\wedge} = \text{Max} [a/[1 + m^{\wedge}], w^*]$$

$$(5.d) w^* = a/[1 + m^*]$$

$$(5.e) W_t^e = [1 + \pi_t^e] W_{t-1}$$

$$(5.f) \pi_t = [P_t - P_{t-1}] / P_{t-1}$$

$$(5.g) \pi_t^e = \pi_{t-1}$$

Subscripts denote time-period.  $P_t$  = actual price level,  $m^*$  = firms' target mark-up,  $W_t^e$  = firms' expected nominal wage,  $W_t$  = actual nominal wage,  $w^{\wedge}$  = workers' target real wage,  $w^*$  = firms' implicit target real wage,  $\pi_t^e$  = firms' expectation of inflation,  $\pi_t$  = actual inflation. Throughout the paper \* denotes firms' target, and ^ denotes workers' target.

Equation (5.a) determines the price level. Equation (5.b) determines the nominal wage. Equation (5.c) has workers setting their target real wage as the higher of their own target real wage and firms' implicit target real wage, with workers' real wage target being stated in terms of their implicit target mark-up. Equation (5.d) expresses firms implicit target real wage in terms of

their target mark-up, Equation (5.e) determines firms' expectation of the nominal wage. Equation (5.f) determines the inflation rate. Equation (5.g) has inflation expectations being set adaptively.

The logic of equation (5.c) determining workers target real wage is as follows. Own targets represent minimum acceptable demands, and workers behave opportunistically. If workers can get more, they take it. The switch point is  $w^\wedge = w^*$ , which is equivalent to  $m^\wedge = m^*$ . If  $m^\wedge < m^*$ , then  $w^\wedge > w^*$ . If  $m^\wedge > m^*$ , then  $w^\wedge < w^*$ .

The price level is based on firms' target mark-up, and the nominal wage is based on workers' target real wage. Firms having a target mark-up is isomorphic with having a target profit share, and workers having a target real wage is isomorphic with having a target wage share. For firms, the target mark-up ( $m^*$ ) implies a target profit share and a target real wage of

$$(6.a) \ s_{\Pi}^* = m^*/[1+m^*]$$

$$(6.b) \ w^* = a/[1 + m^*]$$

For workers, the target real wage ( $w^\wedge$ ) implies a worker target mark-up of  $m^\wedge$  and a worker target wage share of

$$(7) \ s_w^\wedge = 1/[1+m^\wedge]$$

Combining equations (5.a) – (5.f) yields an expression for inflation given by

$$(8) \ 1 + \pi_t = \{[1 + m^*]w^\wedge/a\}[1 + \pi_t^e] = \{w^\wedge/w^*\}[1 + \pi_t^e]$$

The right-hand side first term can be defined as the conflict coefficient ( $c$ ). Using equation (5.g), equation (8) can be restated as

$$(9) \ 1 + \pi_t = c[1 + \pi_t^e] = c[1 + \pi_{t-1}]$$

where  $c = w^\wedge/w^* = \text{Max}[a/[1 + m^\wedge], w^*/w^*] = \text{Max} [[1 + m^*]/[1 + m^\wedge], 1]$ .  $c$  is equal to unity when  $w^\wedge = w^*$ , which is equivalent to  $m^* = m^\wedge$ .

Equation (9) reveals multiple features. First, there is no conflict when  $c = 1$  as both sides

get their target and are satisfied. If  $\hat{m} = m^*$  there is no conflict inflation as workers are satisfied with firms' real wage offer and there is no need to further raise nominal wages. Second, inflation expectations are fulfilled and inflation is constant ( $\pi_t = \pi_t^e = \pi_{t-1}$ ) when  $c = 1$ . Third, inflation expectations lack an automatic anchor as equilibrium (i.e.,  $c = 1$ ) is consistent with any rate of inflation. Fourth, inflation accelerates ( $[1 + \pi_t]/[1 + \pi_{t-1}] > 1$ ) when  $c > 1$ . Conflict inflations automatically accelerate, with the rate of acceleration depending on the degree of conflict as measured by the conflict coefficient.

Fifth, the conflict coefficient reflects the degree to which income claims are inconsistent.

Thus, the coefficient can be restated as

$$(10) c = \hat{s}_w / s_w^*$$

$c$  is unity when workers' target wage share ( $\hat{s}_w$ ) is equal to the wage share implicitly targeted by firms ( $s_w^*$ ) so that workers and firms agree on distribution.  $c$  is greater than unity when  $\hat{s}_w > s_w^*$ , in which case workers and firms disagree on distribution. When  $c > 1$ , workers' and firms' income claims exceed available income, resulting in conflict inflation. According to firms' plans  $s_w^* + s_\pi^* = 1$ , which implies  $\hat{s}_w + s_\pi^* > 1$ .

Sixth, if conflict prevails (i.e.,  $c > 1$ ), the nominal wage increases above firms' expectations to ensure workers' target real wage. The unexpected increase in the nominal wage is:

$$(11) W_t - W_t^e = \{a/[1 + \hat{m}] - a/[1 + m^*]\}P_t = \{\hat{w} - w^*\}P_t$$

In conflict inflations, the dominant party adjusts the nominal variable it controls to hit its target real variable. That adjustment takes account of nominal changes made by its opponent, and the opponent then receives the residual share of output.

### 3.2 Firm dominant regime.

In a firm dominant regime, the microeconomic rules are as follows. Workers set the nominal wage based on the expected price level. Firms set prices based on the actual nominal wage. The next period, workers reset the nominal wage to take account of the higher price level and the process repeats. Now, firms drive the inflation process and workers play catch-up.

The equations describing price and nominal wage setting in a firm dominant regime are given by:

$$(12.a) W_t = w^{\wedge} P_t^e$$

$$(12.b) P_t = [1 + m^*] W_t / a$$

$$(12.c) m^* = \text{Max} [m^*, m^{\wedge}]$$

$$(12.d) m^{\wedge} = a / [1 + w^{\wedge}]$$

$$(12.e) P_t^e = [1 + \pi_t^e] P_{t-1}$$

$$(12.f) \pi_t = [P_t - P_{t-1}] / P_{t-1}$$

$$(12.g) \pi_t^e = \pi_{t-1}$$

Equation (12.b) has firms setting prices using their target mark-up. Equation (12.c) has that target mark-up being maximum of their own target and workers implicit target mark-up. The logic is symmetric to that guiding workers' behavior when they are dominant.

Firms' own target mark-up represents their minimum demand. If firms have a target mark-up ( $m^*$ ) that is less than workers' implicit target mark-up ( $m^{\wedge}$ ), settling for their own target mark-up would imply paying a real wage greater than necessary ( $w^* > w^{\wedge}$ ). Instead, firms act opportunistically and set a higher mark-up and price, thereby paying a lower real wage and earning a larger profit share. If firms can get more, they take it. The switch point is  $m^* = m^{\wedge}$ , which is equivalent to  $w^* = w^{\wedge}$ . If  $m^* < m^{\wedge}$ , then  $w^* < w^{\wedge}$ . If  $m^* > m^{\wedge}$ , then  $w^* > w^{\wedge}$ .

Combining equations (12.a) – (12.f) yields the same expression for inflation as equation

(8). As in the worker dominant regime, inflation is accelerationist, with the rate of acceleration depending on the degree of inconsistency between target mark-ups. The difference from the worker dominant regime is that firms now achieve their target mark-up.

### *3.3 Comparison of the microeconomics of the pass-through and pressure balance approaches*

The microeconomics of the pass-through approach can be compared with that of the pressure balance approach. There are three key differences. First, the pass-through model has one side achieve its target. Second, the pass-through model has a different theory of target setting whereby the dominant party's target is the maximum of what is available on the bargaining table. Third, the pass-through model has full feed through of expected inflation in the price and nominal wage setting process. Together, those three assumptions significantly change the conflict inflation process, generating a significantly different pattern of inflation – unemployment outcomes with significant policy implications.

As regards the coefficient of inflation incorporation, the pressure balance model (Lavoie, 2014, p.549-550) justifies it being less than unity on the grounds that it is not about inflation expectations. Instead, it reflects bargaining power and the extent to which parties can bargain back prior inflation losses. Both of those arguments are questionable.

First, bargaining contracts are usually for extended periods of time and expected inflation over the duration of the contract is a significant consideration and cannot be ignored. Second, treating the degree of inflation incorporation as something which is separately bargained over introduces an arbitrary split regarding determination of the real wage target. The degree of compensation for lagged inflation directly affects the real wage. *Ergo*, settling for less than full compensation is implicitly setting a lower target.

That is easy to see from the expression for the realized real wage for the worker dominant regime. If firms only partially incorporate inflation expectations in the worker dominant regime, the realized mark-up is given by:

$$(13) m = [aP_t/W_t] - 1 = \{a[1 + \pi_t]P_{t-1}/[1 + \lambda\pi^e_t]W_{t-1}\} - 1 < \{a[1 + \pi_t]P_{t-1}/[1 + \pi^e_t]W_{t-1}\} - 1$$

There are two reasons firms miss their mark-up target. One is expectation errors ( $\pi^e_t < \pi_t$ ). The second is incomplete incorporation of expected inflation ( $\lambda < 1$ ). That makes incomplete incorporation of expected inflation equivalent to a systematic reduction of firms' target mark-up and implicit target real wage.

Likewise, for the firm dominant regime. If workers only partially incorporate inflation expectations, the realized real wage is given by:

$$(14) W_t/P_t = w^e_t = w^e_t [1 + \lambda\pi^e_t]P_{t-1}/[1 + \pi_t]P_{t-1} < w^e_t [1 + \pi^e_t]P_{t-1}/[1 + \pi_t]P_{t-1} \quad 0 < \lambda < 1$$

As with firms, there are two reasons why workers miss their target real wage. One is expectation errors ( $\pi^e_t < \pi_t$ ). The second is incomplete incorporation of expected inflation ( $\lambda < 1$ ). That makes incomplete incorporation of expected inflation equivalent to a systematic reduction of workers' target real wage.

The inflation coefficient is a critical economic magnitude. The pressure balance model uses the coefficient to smuggle in the argument that inflation lowers the real wage targets of workers and firms, thereby enabling the model to generate an exploitable inflation - unemployment trade-off. The justification is lagged inflation concerns bargaining over past losses. However, that treatment tacitly displaces a role for inflation expectations in current wage bargaining. It also implies inflation lowers the current target real wages of workers and firms, for which no microeconomic explanation is provided. If inflation has that effect, it should be included directly as an argument influencing wage targets and that treatment should be justified.

#### 4. Microeconomics: the determination of income claims and bargaining outcomes

The previous section analyzed the microeconomic price-wage dynamics of conflict inflation, showing how inconsistent income claims generate wage-price or price-wage spirals, depending on the bargaining sequence. Those dynamics are marked by accelerationism, with inflation accelerating if income claims are inconsistent.

This section analyzes the microeconomics of the determination of income claims and bargaining outcomes, which are the inputs into the conflict inflation process. The microeconomics show how the economy has a mechanism for reconciling income claims, and thereby potentially stabilizing conflict inflations. However, whether conflict inflation is stabilized depends on the macroeconomic properties of the economy, as discussed further below.

The classic argument is that workers' target real wage (and implicit target mark-up) is negatively affected by the unemployment rate, reflecting Marxian "reserve army" discipline effects. In the current model, that can be represented by making workers' target wage a positive function of output, which renders their implicit target mark-up a negative function of income.

As regards firms, the relationship between their mark-up and the level of economic activity is theoretically ambiguous. It will be positive if higher levels of economic activity confer increased market power. Alternatively, it may be negative if increased demand increases the elasticity of demand, encouraging a lower price. Additionally, it may be negative if firms have fixed costs, so that they can spread those costs over increased output and charge lower prices. The combination of those competing effects means it also may be acyclical.

The above arguments can be captured by the following equations for firms' and workers' target mark-ups:

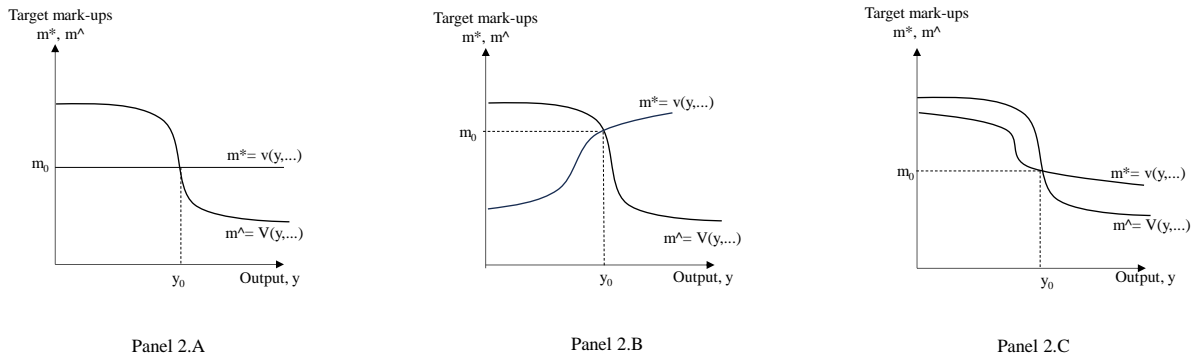
$$(15.a) \quad m^* = v(y, A, \dots) \quad v_y > < 0$$



$$(15.b) \hat{m} = V(y, A, \dots) \quad V_y < 0$$

There are multiple possible configurations of workers' and firms' target mark-ups, of which Figure 2 shows three. Figure 2.A shows the base case where workers' target mark-up ( $\hat{m}$ ) is negatively sloped with respect to economic activity and firms' target mark-up ( $m^*$ ) is acyclical. Workers' target mark-up is also S-shaped. At low levels of economic activity workers have a relatively fixed real wage target and their target mark-up is flat; as activity increases the real wage target increases and their target mark-up declines; and at high levels of activity the target real wage flattens, as does the mark-up. Figure 2.B shows a second case in which firms' target mark-up is pro-cyclical. Figure 2.C shows a third case in which firms' target mark-up is counter-cyclical, perhaps due to economies of scale.

Figure 2. The determination of claims consistent output.



The actual mark-up that prevails depends on the dominance regime. If workers are dominant the mark-up is determined by equations (5.c) and (5.d). In a worker dominant regime, the mark-up that prevails is the lower envelope. When firms offer a lower mark-up, workers

opportunistically seize it. When workers' implicit target mark-up is lower, they impose it.

If firms are dominant the mark-up is determined by equation (12.c). In a firm dominant regime, the mark-up that prevails is the upper envelope. When workers offer a higher mark-up, firms opportunistically seize it. When firms' target mark-up is higher, they impose it. The envelope property is a product of the microeconomic bargaining rules described earlier.

The point of intersection of the mark-up schedules determines the level of output ( $y_0$ ) that renders target mark-ups consistent with income ( $m_0 = m^* = m^\wedge$ ). There is no conflict inflation at output below  $y_0$ . In the worker dominant regime, workers are opportunistically setting their implicit target mark-up ( $m^\wedge$ ) equal to firms' target mark-up ( $m^*$ ). In the firm dominant regime, firms are opportunistically setting their target mark-up ( $m^*$ ) equal to workers' implicit target mark-up ( $m^\wedge$ ). Because claims are consistent at or below  $y_0$ , inflation is constant in that region and inflation does not accelerate.

Conflict inflation and accelerationism only emerges above  $y_0$ , and the intensity of conflict inflation increases as the target gap ( $m^* - m^\wedge > 0$ ) increases. If  $y_0$  is far from full employment output, the zone of conflict inflation will be large which increases the danger of accelerating conflict inflation. It also means full employment will be difficult to achieve and sustain, as predicted by Kalecki (1943).

$y_0$  is the output level at which claims on income are consistent and conflict inflation ceases. At and below  $y_0$  does not mean there is no inflation, which will continue at the expected rate. It only means inflation stops accelerating. That renders the model different from Friedman's (1968) NAIRU (Non-Accelerating Inflation Rate of Unemployment) model. In the Friedman model the NAIRU is a point and inflation decelerates below the NAIRU. In the current model, inflation is constant in the region at and below  $y_0$ .

The determination of the consistent claims level of output ( $y_0$ ) depends on workers' and firms target mark-ups. An increase in worker militancy is identified with a downward shift of workers' implicit target mark-up schedule and it lowers the consistent claims level of output. An increase in firms' aggressiveness is identified with an upward shift of firms' target mark-up schedule and it also lowers the consistent claims level of output. Attitudes of workers and firms therefore impact the level of output/unemployment rate at which conflict inflation is triggered.

Distributional outcomes depend jointly on the dominance regime and the shape of firms' and workers' target mark-up functions. The effect of distributional outcomes on macroeconomic activity then depends on the demand regime. For each panel in Figure 2 there are four cases, reflecting the 2 x 2 matrix associated with "bargaining dominance regime" (worker vs. firm dominance) and "demand regime" (wage- vs. profit-led). The specific combination will affect the macroeconomic pattern of the inflation-unemployment scatter generated by the economy above  $y_0$ . This issue is discussed in Section 5 below.

Figures 2.A and 2.B show the conventional representations of firms' and workers' target mark-ups. Figure 2.C shows an unconventional case in which firms' target mark-up is counter-cyclical, perhaps due to economies of scale. That pattern delays the onset of conflict inflation by pushing  $y_0$  closer to full employment ( $y^f$ ).

The rest of the paper assumes income claims are determined according to Figures 2.A and 2.B. Given that, it is worth noting that claims determination according to 2.C generates slightly different AD dynamics. If firms are dominant and demand is wage-led, the expenditure multiplier will increase above  $y_0$  as increased output is associated with a lower profit share. If firms are dominant and demand is profit-led demand, the expenditure multiplier will fall above  $y_0$ . Those observations are another reminder that macroeconomic outcomes are highly contingent on the

structural configuration (i.e., demand regime, bargaining dominance regime, and income claims determination).

**5. Macroeconomics: the short-run Phillips curve, its slope, and conflict accelerationism**

The above micro-founded model of conflict inflation can now be inserted into a macroeconomic structure to determine the output – inflation outcomes generated by the economy. Those outcomes depend critically on the demand regime. That is because the microeconomic structure determines functional income distribution, which then impacts AD and output.

There are two possible demand regimes. In a wage-led regime an increase in the mark-up lowers AD. In a profit-led regime an increase in the mark-up increases AD. Combining demand regime and bargaining dominance regime yields a 2 x 2 matrix which is illustrated in Figure 3. The demand regime determines how functional distribution affects AD. The bargaining regime determines whether workers or firms achieve their distributional target.

Figure 3. Taxonomy of demand and bargaining dominance regimes.

		Demand regime	
		Wage-led	Profit-led
Bargaining dominance regime	Firms dominant	- D(m,...) m = Max[m <sup>^</sup> , m*]	+ D(m,...) m = Max[m <sup>^</sup> , m*]
	Workers dominant	- D(m,...) m = Min[m <sup>^</sup> , m*]	+ D(m,...) m = Min[m <sup>^</sup> , m*]

There are four cases. In the worker dominant regime, workers achieve their wage and

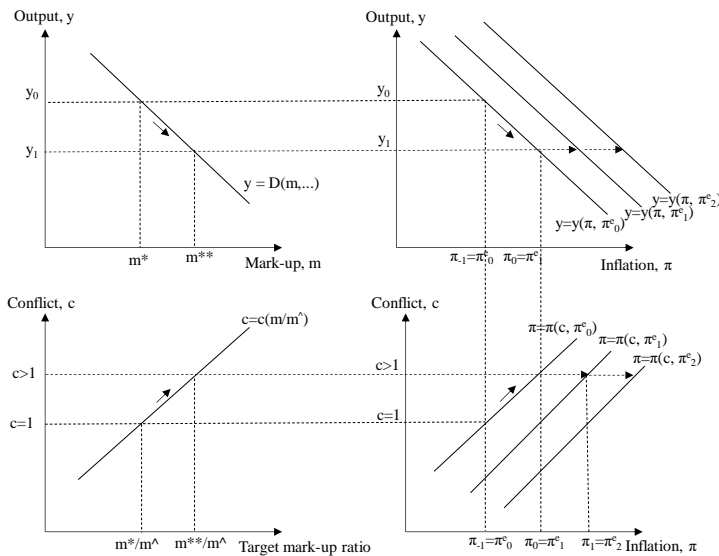
mark-up targets and firms miss theirs. The reverse holds in the firm dominant regime. In the demand-led regime, an increase in the mark-up has a negative effect on AD. In the profit-led regime it has a positive effect. The sign above the argument of the AD function represents the sign of the partial derivative with respect to the mark-up which determines the profit and wage shares.

The last factor is which party initiates the conflict by raising its target share. There are two cases: worker-led and firm-led. Combining that with Figure 2 means there are eight potential conflict inflation scenarios. The sub-sections below analyze the different scenarios and the macroeconomic patterns they generate.

### *5.1 Wage-led demand, firms dominant, firm-led conflict*

The first case consists of wage-led demand, firms dominant, and firm-led conflict. It is illustrated in the four-panel diagram in Figure 4. The northwest panel shows the goods market in which output is a negative function of the mark-up (which determines the profit share), reflecting the demand led regime. The southwest panel shows the degree of conflict which is a positive function of firms' target mark-up, conditional on workers' implicit target mark-up. Inflation equilibrium obtains ( $c = 1$ ) when firms' target mark-up equals workers' implicit target mark-up ( $m^* = m^\wedge$ ). The southeast panel shows the rate of inflation as a function of the degree of conflict, and contingent on inflation expectations. The northeast panel constructs the short-run Phillips curve by linking output and inflation outcomes, contingent on inflation expectations.

Figure 4. Wage-led demand, firms dominant, firm-led conflict.



The thought experiment is as follows. Income claims are initially consistent. Firms then raise their target mark-up to  $m^{**} > m^*$ , generating claims inconsistency. Starting in the northwest quadrant and working counter-clockwise, the effect of an increase in firms' target profit share is as follows. Since firms are dominant, they achieve their new target and output falls because the economy is wage-led.<sup>3</sup> Conflict increases because firms' increased mark-up now creates inconsistent claims on total income. The increase in conflict raises current inflation and there is an increase in inflation above initial inflation expectations ( $\pi^e_0$ ). Thereafter, in ensuing periods, inflation starts to accelerate as the earlier described conflict dynamics set in. However, the level of economic activity remains unchanged as income shares are unchanged. The increase in

<sup>3</sup> The ultimate decline in output will include induced contractionary expenditure multiplier effects. Thus, the higher mark-up spurs an initial decline in AD and output, which is supplemented by subsequent induced declines. In the paper it is assumed the multiplier process is always stable. However, as noted by Palley (1996, chapter 11), in some economic configurations there is a possibility of multiplier instability that generates explosive conflict inflation owing to interaction of the endogenous mark-up and the demand regime. Thus, in a worker dominant/wage-led demand regime, an increase in the target wage share will increase demand and output, spurring a higher real wage target that is realized, thereby further increasing demand and output. The same might hold in a firm dominant/profit-

inflation causes inflation expectations to rise in subsequent periods, which causes the conflict inflation schedule to shift right so that actual inflation is higher for every level of conflict. This process persists, reflecting the impact of conflict accelerationism.

There are several features to note. First, the goods market output - profit share relationship is negatively sloped, reflecting the wage-led demand regime. Second, the short-run Phillips curves (drawn in output space) are unconventionally negatively sloped, so that inflation increases while output falls. That reflects the fact inflation is caused by an increased profit share, but the economy is wage-led. As noted by Palley (1996, chapter 11), the slope of the conflict inflation short-run Phillips curve is contingent on the combination of the demand regime and who is dominant. It is conventionally sloped in a profit-led demand regime with firms dominant, or in a wage-led demand regime with workers dominant. It is unconventionally sloped in a profit-led regime with workers dominant, or wage-led regime with firms dominant.

The short-run Phillips curve shifts right as inflation expectations increase and inflation accelerates. The process has similarities with the Friedman (1968) – Phelps (1967, 1968) natural rate model of monetary accelerationism. The big difference between conflict accelerationism and monetary accelerationism is that the initial change in real output persists, whereas output reverts to the natural level in the Friedman-Phillips process absent monetary acceleration.

### *5.2 Wage-led demand, firms dominant, worker-led conflict*

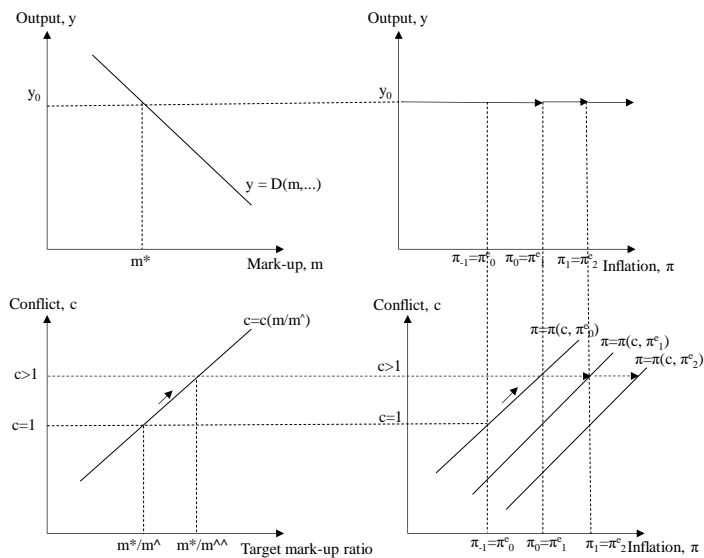
The second thought experiment is when there is worker-led conflict, and it is illustrated in Figure 5. The process starts by workers raising their target real wage and wage share, which lowers their implicit target profit share ( $m^{\wedge} > m^{\wedge\wedge}$ ). That has no effect in the goods market (northwest quadrant) because firms are dominant and determine the distributional outcome. The increase in

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led demand regime with a pro-cyclical firm mark-up. A higher realized target mark-up increases demand and output,

workers' target wage share increases the degree of conflict (southwest quadrant), which increases inflation. Thereafter the process of conflict accelerationism kicks in as inflation expectations keep rising via the adaptive expectations mechanism. That causes the conflict inflation schedule to start shifting right (southeast quadrant). Since there is no effect on output, the short-run Phillips curve (northeast quadrant) disappears. Output is unchanged, and the only effect of the worker-led conflict is higher inflation.

Figure 5. Wage-led demand, firms dominant, worker-led conflict.



### 5.3 Wage-led demand, workers dominant, firm-led conflict

The third case stays with the wage-led demand regime, but now has workers dominant. This case produces the same pattern of outcomes as Figure 5. As the economy is wage-led, the output function (northwest quadrant) is still negatively sloped. Firms initiate the conflict process by raising their target mark-up and target profit share. That has no effect on actual distribution as workers are dominant. Consequently, AD and output are unchanged. However, it does increase

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spurring a further increase in the target mark-up.



conflict (southwest quadrant), causing inflation to rise and the accelerationist process to kick in (southeast quadrant), as previously described.

#### *5.4 Wage-led demand, workers dominant, worker-led conflict*

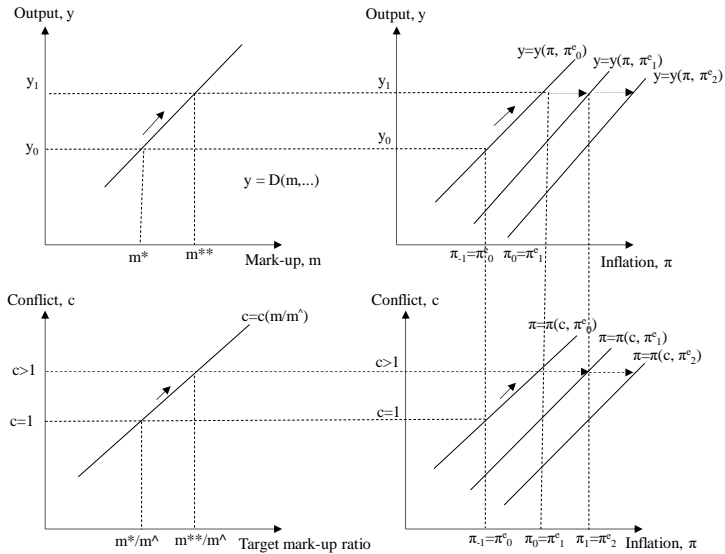
Once again, the output function (northwest quadrant) is negatively sloped with respect to the mark-up as the economy is wage-led. Now, workers initiate the conflict process by raising their target real wage and wage share, which lowers their implicit target profit share. As workers are dominant, they achieve a higher wage share. That increases AD and output (northwest quadrant) because the economy is wage-led. It also increases increase conflict (southwest quadrant), causing inflation to rise and the accelerationist process to kick in (southeast quadrant), as previously described. The big change is that the short-run Phillips curve is now positively sloped (i.e., conventionally sloped) because the increase in the wage share causes an initial increase in AD and output, which accompanies the increase in inflation. Again, thereafter, output remains fixed and inflation starts accelerating.

#### *5.5 Profit-led demand, firms dominant, firm-led conflict*

Figure 6 shows the configuration for a profit-led demand regime, with firms dominant and firm-led conflict. A profit-led demand regime causes the output function (northwest quadrant) to be positively sloped with respect to the mark-up. Firms initiate the conflict process by raising their target mark-up and target profit share. Since firms are dominant, they achieve their target, which increases AD and output (northwest quadrant) because the economy is profit-led. It also increases conflict (southwest quadrant), causing inflation to rise and the accelerationist process to kick in (southeast quadrant), as previously described. The short-run Phillips curve (northeast quadrant) is positively sloped (i.e., conventionally sloped) because the increase in the profit share

causes an initial increase in AD and output, which accompanies the increase in inflation. Output then remains fixed, and inflation starts accelerating.

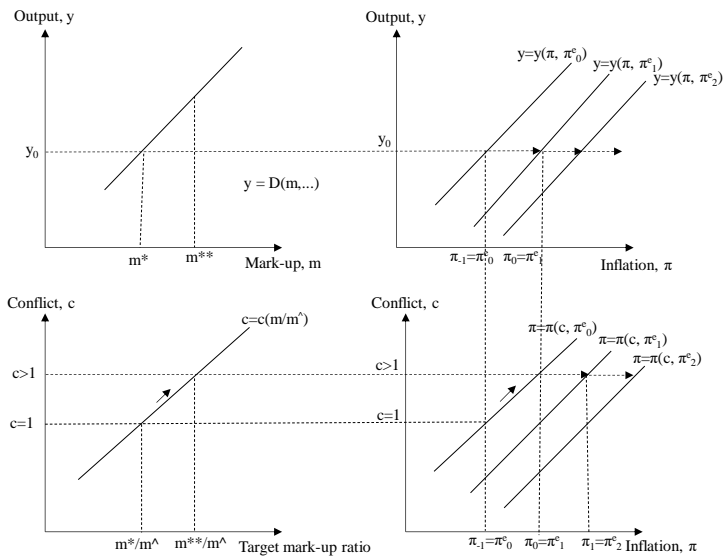
Figure 6. Profit-led demand, firms dominant, firm-led conflict.



### 5.6 Profit-led demand, workers dominant, firm-led conflict

Figure 7 shows the configuration for a profit-led demand regime, worker dominance, and firm-led conflict. The output function (northwest quadrant) is positively sloped, as in Figure 5. Firms initiate the conflict process by raising their target mark-up, but they do not achieve their target because workers are dominant. Consequently, output is unchanged. However, firms' increased target mark-up increases conflict (southwest quadrant), causing inflation to rise and the accelerationist process to kick in (southeast quadrant), as previously described. The short-run Phillips curve (northeast quadrant) disappears because output is unchanged and inflation increases.

Figure 7. Profit-led demand, firms dominant, worker-led conflict.



### 5.7 Profit-led demand, firms dominant, worker-led conflict

The output function (northwest quadrant) is again positively sloped as a function of the mark-up because the demand regime is profit-led. Workers initiate the conflict process by raising their target wage, but they do not achieve their target because firms are dominant. Consequently, output is unchanged. Workers' increased wage demand increases conflict (southwest quadrant), causing inflation to rise, and the accelerationist process again kicks in (southeast quadrant). The short-run Phillips curve (northeast quadrant) disappears because there is no change in distribution and AD, and the only effect is to trigger an accelerationist inflation process.

### 5.8 Profit-led demand, workers dominant, worker-led conflict

The output function (northwest quadrant) is again positively sloped, reflecting the profit-led demand regime. Workers initiate the conflict process by raising their target wage, and they achieve their target as they are dominant. AD and output fall because the demand regime is profit-led. The increase in workers' wage demand also increases conflict (southwest quadrant),

increases inflation, and triggers the accelerationist inflation process (southeast quadrant). The short-run Phillips curve (northeast quadrant) is negatively sloped in output-inflation space, and output falls while inflation rises. Thereafter, output remains lower and inflation accelerates.

### *5.9 Summation*

There are eight distinct cases. Two produce a positive output-inflation correlation; two produce a negative output – inflation correlation; and four produce no output-inflation correlation. In all cases, the initial increase in inflation triggers conflict accelerationism. The eight cases show how the economy's inflation – output pattern depends on the structure of the economy.

The four-panel diagram in Figures 4 and 5 shows the mechanics whereby the economy generates an inflation – unemployment scatter. There is a process determining inflation, and a process determining output. The Phillips curve is an artifact of jointly mapping those two processes. The economy produces a Phillips pattern, but that construction is very different from the textbook representation which treats the Phillips curve as a direct functional relationship between inflation and unemployment.

Most importantly, the logic of conflict inflation is fundamentally different from the logic of the classic Phillips curve. In the conflict model, inflation is due to inconsistent income claims, with inflation being the outcome of reconciling those claims with available output. Inflation is not due to excess goods or labor demand (Phillips, 1958), and nor does inflation *per se* facilitate increased economic activity (Tobin, 1972; Palley, 1994).

## **6. Supply and commodity price shocks**

Supply and commodity price shocks are an important part of conflict inflation, and they are easily incorporated into the above model. Those shocks cause a change in income shares which causes claims inconsistency that then triggers conflict inflation.

### 6.1 Supply shocks

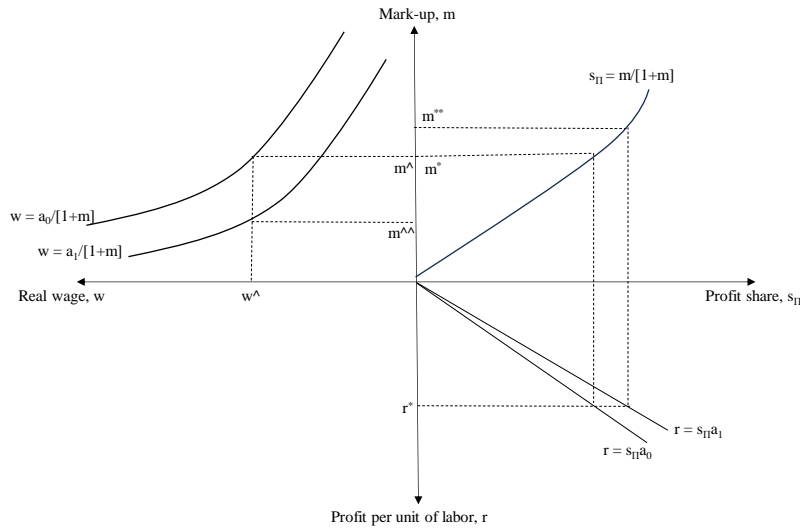
Supply shocks reduce the amount of output available for division between workers and firms, which triggers conflict over who bears the cost. Those shocks can be represented by a reduction in the average productivity of labor coefficient. Let  $a_0$  be the initial level of productivity and  $a_1$  be the post-shock level, where  $a_0 > a_1$ . The initial situation is conflict free so that firms' target mark-up ( $m^*$ ) equals workers' implicit target mark-up ( $m^\wedge$ ).

Figure 8 describes the impact of supply shocks. The left-hand panel shows the impact on workers. The two right-hand panels show the impact on firms. From equation (2.c) determining prices, workers real wage is determined by:

$$(19) w = a_0/[1+m]$$

The real wage schedule is represented by a hyperbola in the northwest panel of Figure 8. The initial real wage of  $w^\wedge$  implies a worker target mark-up of  $m^\wedge$ . A supply shock lowers labor productivity ( $a_1 < a_0$ ), causing the wage schedule to shift down. To retain their real wage of  $w^\wedge$ , workers target a lower implicit mark-up of  $m^\wedge$ .

Figure 8. Conflict resulting from adverse supply shocks ( $a_0 > a_1$ ).



The right-hand side of Figure 7 describes firms' situation. Firms' profit per unit of labor ( $r$ ) is given by:

$$(20) r = s_{\pi} a$$

The southeast panel shows the determination of the initial unit labor profit rate ( $r^*$ ) given productivity of  $a_0$  and a markup of  $m^*$ , which is equal to workers' implicit mark-up. There is initially no conflict inflation as  $c = [1+m^*]/[1+m^{\wedge}] = 1$ . The supply shock rotates the profit rate function counter-clockwise. To retain the existing profit rate, firms need a higher profit share and a higher mark-up of  $m^{**}$ . Consequently, the degree of conflict jumps to  $c = [1+m^{**}]/[1+m^{\wedge}] > 1$ , triggering conflict inflation. In sum, supply shock conflict inflation works via both workers' real wage requirements and firms' profitability requirements.

### 6.2 Imported commodity price shocks

Commodity price shocks leave technology unchanged, and society continues to produce the same amount of output for a given input. However, more of that output must be given to

commodity producers, leaving less to be divided between workers and firms. The problematic can be modelled as follows. The price level is given by:

$$(21) p = [1 + m][W + ez]/a$$

$e$  = price of commodity imports,  $z$  = commodity imports per unit of labor. Imported inputs are combined with labor in production and increase the effective average unit labor cost of output.

The import share of costs is:

$$(22) x = ez/[W + ez] \quad 0 < x < 1$$

The profit share ( $s_{\Pi}$ ), wage share ( $s_w$ ), and import share ( $s_M$ ) of output are given by

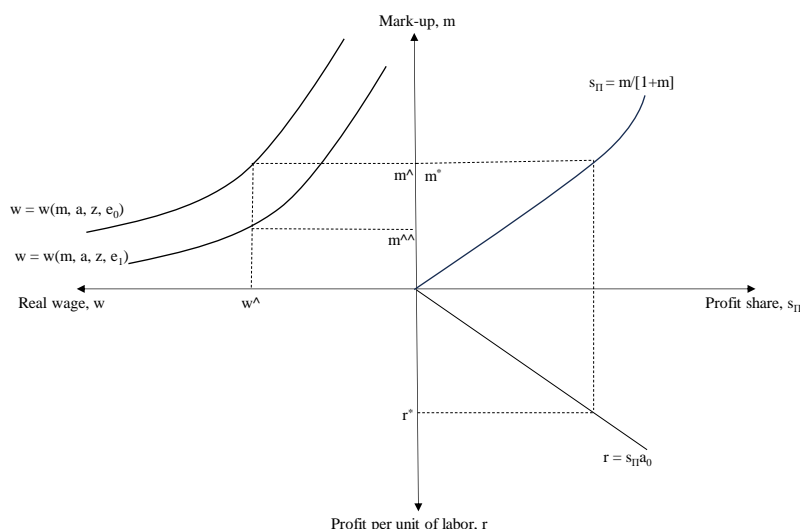
$$(23.a) s_{\Pi} = m/[1 + m]$$

$$(23.b) s_w = [1 - x]/[1 + m]$$

$$(23.c5) s_M = x/[1 + m]$$

Figure 9 shows how a commodity price shock triggers conflict inflation. Initially, there is distributional equilibrium with a real wage of  $w = \hat{w}$  and mark-up of  $m = \hat{m} = m^*$ . The commodity price shock increases  $e$  and raises the price level, which shifts the wage curve down. Firms pass on the higher cost of imported commodities via prices, lowering the actual real wage. To maintain their real wage, workers are compelled to target a lower implicit mark-up of  $\hat{m} < m^*$ , which causes distributional disagreement and triggers conflict inflation. Whereas supply shocks affect both workers' and firms' targets, imported commodity price shocks trigger conflict inflation exclusively via their impact on workers' implicit target mark-up.

Figure 9. Conflict resulting from a commodity price shock ( $e_0 < e_1$ ).



Lastly, it should be noted that the demand regime matters for supply and commodity price shocks. That is because those shocks induce income redistribution, and that redistribution has secondary adverse AD effects. The extent of those secondary effects depends on the combination of type of demand regime and how the burden of redistribution is split.

## 7. Macroeconomics: the pass-through hybrid conflict inflation Phillips curve

The Phillips curve debate lurks behind most discussions of inflation, which raises the question of whether conflict inflation produces a Phillips curve trade-off? The short answer is “sort of”, but it is also different from that proposed by the pressure balance model of conflict inflation.

Whereas the pressure balance model generates a Phillips curve that is observationally similar to the traditional Keynesian Phillips curve, the pass-through model generates a Phillips structure that is a hybrid of Keynesian and NAIRU features.

### 7.a The pressure balance model revisited

The pressure balance model produces a trade-off because of incomplete incorporation of



inflation expectations. Increases in demand increase output (lower unemployment), which raises the degree of conflict (i.e., income claims inconsistency) and inflation. However, the increase in inflation is not fully incorporated into current price and nominal wage inflation, which is akin to a tacit marginal reduction in firms' and workers' targets that diminishes conflict pressure.

Consequently, unemployment falls and inflation rises. However, inflation does not keep increasing (i.e., accelerating) because partial incorporation means pressure balance is restored despite lower unemployment. As discussed earlier, the problem is that treatment lacks microeconomic justification.<sup>4</sup>

### *7.b The pass-through hybrid Phillips curve*

The pass-through model produces a different type of Phillips curve, which is illustrated in Figure 10. The figure applies to either an economy which is firm dominant/profit-led or worker dominant/wage-led. There are two economic zones. Zone 1 is when output is at or below the consistent claims level of output ( $y_0$ ), in which case there is no conflict and no tendency for inflation to accelerate. Zone 2 is when output is above  $y_0$ , in which case inflation accelerates as described earlier in Section 5.

In zone 1 the Phillips curve is horizontal as both parties are satisfied with the real wage - mark-up outcome. In terms of equation (9), the coefficient of conflict is  $c = 1$ . In zone 2, the Phillips curve is positively sloped according to the logic described in Section 5. An increase in AD increases output and lowers unemployment, which further increases distributional conflict

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<sup>4</sup> Drawing on Palley (1994, 2012), Serrano (2019) has argued partial incorporation of inflation expectations reflects the impact of unemployment and the degree of incorporation may rise as unemployment falls. That argument was originally developed in the context of a multi-sector stochastic disequilibrium economy in which nominal wages are downwardly rigid and too high in some sectors, but sector real product wages are consistent with sector full employment. In that case, not incorporating generalized inflation in the nominal wage bargains of sectors with unemployment can help those sectors restore sector full employment. Aggregate nominal demand growth translates into inflation in sectors at full employment and increased employment in depressed sectors. However, that argument does not apply to a conflict situation in which workers are actively seeking higher real wages.

that raises inflation which then continues accelerating.

Figure 10. The conflict inflation Phillips curve for profit-led/firm dominant and wage-led/worker dominant economies.

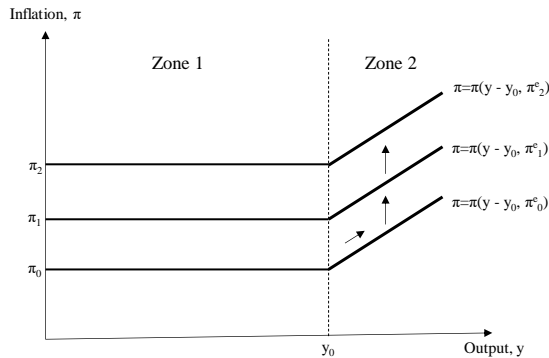


Figure 10 shows a family of Phillips curves, each of which is indexed by the level of expected inflation. As shown earlier, expected inflation equals actual inflation when the economy is at or below  $y_0$ . The critical difference between zones 1 and 2 is that inflation is constant in zone 1 and equal to the expected level, whereas it accelerates in zone 2 as shown by the arrows. The hybrid character of the Phillips curve is rooted in the different properties of the two zones.

In zone 1 the Phillips curve exhibits Keynesian characteristics. Below  $y_0$ , AD and output can be increased without triggering conflict inflation. The rate of inflation is equal to its expected rate, and the height of the horizontal portion of the Phillips curve is determined by inflation expectations.

In zone 2 the Phillips curve exhibits NAIRU characteristics. Above  $y_0$ , the economy is subject to accelerating inflation. Increases in AD will generate an increase in output, and thereafter inflation will start accelerating and keep increasing as long as the economy is above  $y_0$ .

However, unlike the NAIRU model, there is no mechanism for stabilizing inflation and stopping its acceleration.

As discussed in Section 4, an increase in workers' militancy or an increase in firms' aggressiveness both shift the consistent claims level of output ( $y_0$ ) to the left. Increased worker militancy and corporate aggressiveness both increase the size of zone 2, and cause conflict inflation to set in earlier. They also increase the degree of conflict by widening the gap between claims, therefore causing inflation to accelerate faster in zone 2.

As discussed in section 6, adverse supply and commodity price shocks have a similar effect. They too increase the size of zone 2 and increase the degree of conflict by widening the claims gap.

### *7.c Disinflation in zone 1*

The family of horizontal Phillips curves in zone 1 are indexed by the level of inflation expectations ( $\pi^e$ ). That raises the question of how policy might disinflate given existing inflation expectations?

Inflation is set by the first mover, and firms and workers are indifferent to the rate of inflation and may even have a small preference for lower inflation. If policy can get the first mover to lower their inflation ask, that will cause a shift to a lower Phillips curve because the second mover does the same. That is where policy credibility and coordination enter the picture.

One possibility is the monetary authority can threaten to lower economic activity by raising interest rates if inflation does not come down. Since lower economic activity is painful to all parties, the credible threat of lower activity may persuade the first mover to lower its inflation ask.

Wage bargaining coordination institutions can also be helpful, as argued by Calmfors and

Drifil (1988). In this regard, the 1970s are widely viewed as being characterized by conflict inflation. Over that decade, Germany and the Nordic economies had superior inflation outcomes and they had coordinated bargaining systems. Anticipating the arguments of Section 9, the Neoliberal era has made conflict inflation less likely by changing the economic environment, rendering coordinated bargaining institutions less relevant and explaining why they have fallen out of favor.

Ironically, zone 1 in Figure 10 is where incomes policy may work best. That is because zone 1 is where conflict inflation has been resolved and agents are amenable to the help of incomes policy to engineer a lowering of inflation. However, in practice, incomes policy tends to be implemented when the economy is in zone 2 and accelerationism threatens. Consequently, incomes policy tends to be implemented when conflict is active, which is the most difficult situation and helps explain its chequered performance record.

#### *7.d Zone 3: concessionary accelerating disinflation and deflation*

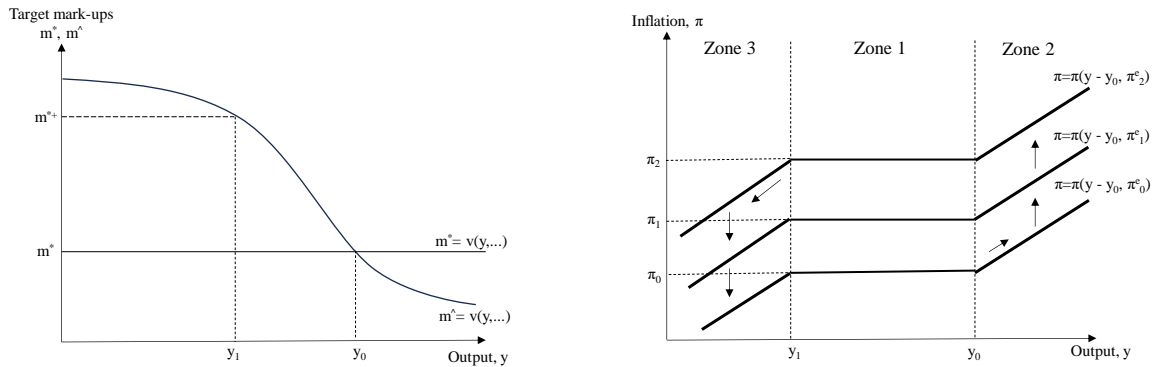
The pass-through conflict model can also potentially produce accelerating disinflation and deflation. That can be seen from equation (9) describing the inflation process, in which disinflation occurs if the coefficient of conflict is less than unity ( $c < 1$ ). In that case target income claims are less than what is available, which introduces a third zone (zone 3) characterized by accelerating disinflation.

Such a situation can exist in a firm dominant regime (i.e., it is asymmetric and does not hold in a worker dominant regime) when economic activity is depressed. The micro economic logic is as follows. Firms contend with two margins. One is the internal bargaining margin with workers. The other is the external margin concerning competitive pressures from other firms. That external margin may impose a cap on the realizable mark-up. That argument has some

parrallels with Keynes' (1936, p.12) argument why workers cannot set the real wage and employment as claimed by classical theory.<sup>5</sup>

That situation and its consequences are illustrated in Figure 11. Firms are dominant, and workers are concessionary in the sense of having a low target wage and high implicit target mark-up. However, firms may refrain from exploiting their bargaining advantage owing to fear of competition. That is shown in the left-hand panel of Figure 11 by the upper bound to the mark-up ( $m^{*+}$ ), which kicks in at output level  $y_1$ . For output levels below  $y_1$ , workers are willing to concede a higher mark-up ( $m^{\wedge} > m^{*+}$ ) and accept a lower real wage ( $w^{\wedge} < w^{*+}$ ), yet firms refrain from imposing this as they do not want to competitively expose themselves. That changes the upper bargaining envelope which applies when firms are dominant.

Figure 11. The full conflict inflation Phillips curve for a profit-led/firm dominant economy.



The right-hand panel of Figure 11 shows the accompanying implications for the Phillips curve. There is now a third zone (zone 3), the boundary of which is  $y_1$ . The Phillips curve is

<sup>5</sup> Keynes (1936, p.12) argument was the real wage is driven to equal the marginal product of labor despite

again negatively sloped. Workers lower their nominal wage demand to lower real wages, but firms respond by lowering prices to keep the real wage and mark-up ( $m^{*+}$ ) unchanged. Lower inflation then feeds into lower inflation expectations, lowering future nominal wage demands and causing accelerating disinflation.

Lastly, the right-hand panel in Figure 11 has some resemblance to the piecewise linear Phillips curve that is popular with Post Keynesians (see Lavoie, 2014, p.559). There are two major differences. First, it shows a family of Phillips curves indexed by inflation expectations, rather than a single Phillips curve. Second, zone 2 is subject to accelerating inflation, while zone 3 is subject to accelerating disinflation, rather than inflation being constant at each point on the Phillips curve.

## **8. Conflict inflation policy**

The previous sections have shown how conflict inflation depends on the degree of income claims inconsistency, how it is marked by accelerationist dynamics, and how shocks can create claims inconsistency that triggers conflict inflation. Inflation will accelerate as long as claims inconsistency persists. That raises the question how can policy address conflict inflation? Here, there are two distinct issues. One is about using policy to generate non-inflationary increases in output. The second is about expanding the consistent claims zone ( $y_1 \leq y \leq y_0$ ).

Regarding increasing output, conventional AD stimulus policy has no inflation consequences in zone 1 ( $y_1 \leq y \leq y_0$ ) where inflation remains constant because claims are consistent. However, it causes inflation to accelerate in zone 2 as output is above  $y_0$ . Stimulus pushes the economy deeper into the zone of inconsistent excessive income claims which further exacerbates conflict inflation. That said, demand stimulus in zone 3 reduces the rate of

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unemployment, because competitive firms keep lowering price until price equals marginal cost.

disinflation by raising output and diminishing the income claims deficiency.

The second question is whether policy can increase  $y_0$  and shrink the zone of conflict inflation ( $y > y_0$ )? To do so, policy must be able to influence mark-up targets, and thereby change the level of output at which income claims are consistent.<sup>6</sup>

One possibility is monetary policy may have an impact via threat effects. Thus, the monetary authority may threaten to respond to conflict inflation by vigorously raising interest rates and repressing economic activity. In that case, firms and workers may lower their target mark-ups to avoid that outcome. In terms of Figure 2, firms' target mark-up function shifts down and workers' implicit target mark-up function shifts up, thereby increasing  $y_0$  and diminishing the region of conflict inflation.

That possibility also speaks to institutional arrangements which policy may be able to facilitate. Thus, coordinated wage bargaining may help tamp down income share claims, thereby generating better macroeconomic outcomes by diminishing the need for tight monetary policy to control conflict accelerationism (Calmfors and Drifill, 1998). In effect, coordinated bargaining is a tacit decentralized form of incomes policy.

Another possibility is monetary policy impacts firms' target mark-up via the nominal interest rate, as follows:

$$(25) m^* = \beta(y, i, \dots) \quad \beta_y > 0, \beta_i < 0$$

$i$  = nominal interest rate. The economic logic is finance is an input, so that increasing the cost of finance increases costs to the firm that need to be recovered via the mark-up over unit labor costs. Tobin (1980, p.35) termed this effect the "Patman effect" after populist Texas

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<sup>6</sup> There is a subtle distinction between policy affecting the consistent claims level of output versus policy affecting the level of output. The former affects the level of economic activity at which conflict inflation kicks in. The latter affects economic activity and may thereby affect distribution (Palley, 1996, chap.11; Rochon and Setterfield, 2007).

Congressman Wright Patman who questioned the anti-inflationary effect of higher interest rates because of their impact on costs.

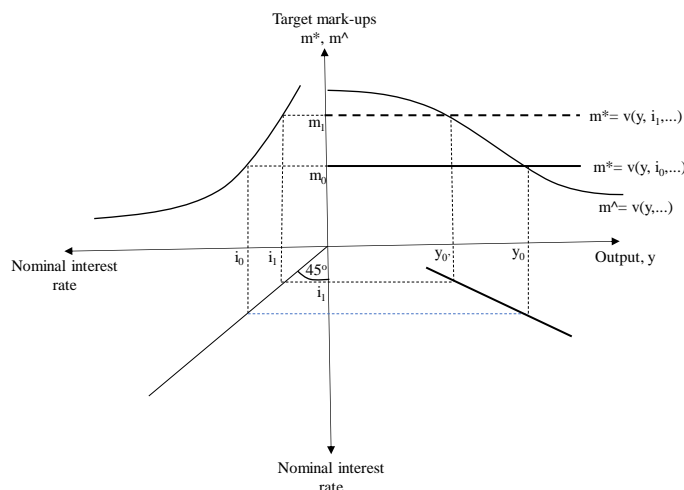
Figure 12 illustrates how interest rates might shift the consistent claims level of output. The northwest panel shows the relationship between the nominal interest rate and firms' target markup. The northeast panel replicates Figure 2.A, and it shows the determination of consistent claims output level. The interest rate and the consistent claims output level are then mapped into the southeast panel. A higher interest rate ( $i_1 > i_0$ ) shifts up firms' target mark-up, causing the consistent claims output level to fall ( $y_0' < y_0$ ). Monetary policy can therefore affect the level of output at which conflict inflation is triggered, and there is a locus of output – nominal interest rate points along which distributional agreement holds. The locus has a negative slope. Higher interest rates increase the size of the conflict zone, and they also increase the intensity of conflict in that zone by increasing the gap between workers' and firms' target mark-ups.<sup>7</sup>

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<sup>7</sup> Though tight monetary policy fails to shrink the conflict region, it may still be effective in controlling a conflict inflation by lowering AD and shifting the economy out of the conflict region.



Figure 12. The impact of interest rates on the consistent claims output level ( $i_1 > i_0$ ).



Fiscal policy may also impact the size of the conflict zone. Thus, higher personal income taxes may induce workers to increase their real wage target and lower their target mark-up. In terms of Figure 2, that would shift workers' implicit target mark-up function down and lower the consistent claims level of output, above which conflict inflation kicks in. As regards firms, higher corporation taxes may generate higher target mark-ups, which would shift up firms' mark-up function and lower the consistent claims level of output. Like contractionary monetary policy, contractionary tax policy inclines to lower the economic threshold at which conflict inflation kicks in, and it also inclines to raise the degree of conflict intensity by increasing the claims gap. Government social spending may have the reverse impact on workers target mark-up, but that raises behavioral economics questions about the extent to which workers recognize and internalize the income value of such spending.

Lastly, Kim et al. (2019) have argued worker wage targets are affected by household debt, with the threat of bankruptcy exercising a discipline effect. Labor market policy that

supports workers will protect against that, but it will also tend to increase workers' target wage and target wage share. Unfortunately, that will lower the consistent claims output threshold at which conflict inflation kicks in, and it will also increase the intensity of conflict inflation by raising the degree of claims inconsistency. In a conflict inflation environment, empowering workers to demand a greater wage share requires offsetting measures that get firms to reduce their targets if inflation is to be avoided.

The above considerations illustrate two policy complexities associated with conflict inflation. First, if an economy is in the conflict zone (zone 2), conventional anti-inflation policy will have contradictory effects. On one hand, it will lower AD and output which will reduce conflict inflation. On the other hand, it will increase target mark-ups which increases conflict inflation. The usual assumption is the direct AD effect dominates, but the induced mark-up effect lessens the effectiveness of conventional policy. Second, responding to conflict inflation with conventional policy tends to disproportionately penalize one side (usually workers), even though conflict inflation is a product of clashing claims for which both sides are to blame.

Those complications speak to another possibility, which is incomes policy that imposes a distributional solution on both sides. The problems with it are evasion, microeconomic allocative inefficiencies caused by imposing relative price and wage rigidity, and political resistance.

## **9. How important is conflict inflation?**

As noted at the beginning of the paper, Blanchard (2022) has recently claimed all inflation is the outcome of distributional conflict. That claim has also been echoed by Post Keynesians (see Hein, 2023) who have long emphasized the prevalence of conflict inflation.

Though conflict inflation is a coherent theory, it does not follow that all inflation is conflict inflation. Inflation can also be triggered by excess demand that drives up prices, which is

then followed by a sequential process of nominal wage catch-up that restores the real wage. There is no inconsistency of income claims. Instead, there is a process of sequential adjustment. The classic Phillips curve trade-off (Tobin, 1972; Palley, 1994) is the product of a similar process. In that stochastic disequilibrium framework, nominal demand growth raises both prices and nominal wages in sectors at full employment, while increasing output and employment in sectors below full employment. Sector real wages are constant, but inflation serves to assist with nominal price adjustment in an environment of downward nominal rigidities.

The bottom line is every inflation involves a price-wage spiral, but not all price-wage spirals constitute conflict inflation.<sup>8</sup> Conflict inflation is the product of a specific economic circumstance involving inconsistent excessive claims on income. The claim that all inflations are conflict inflations rests on mistakenly redefining conflict inflation as a price-wage or wage-price spiral.

As for the relevance of conflict inflation, that depends on two arguments. One is the size of zone 2 in Figure 11. If zone 2 is small, conflict inflation will seldom manifest itself to the extent that the economy seldom operates in that region. The second is institutional structure. Conflict inflation requires that workers have the means to formulate wage demands and the power to put them on the bargaining table. In worker-led conflicts, workers must have the power to achieve their demands. In firm-led conflicts, workers must have the power to force up nominal wages even if they cannot achieve their real wage target. Historically, that has required strong unions which have made their own demands; provided wage demand guideposts to non-unionized workers; and conferred power on non-unionized workers by providing those workers with a credible “unionization threat” that management took seriously.

Those conditions have been substantially absent for the past thirty years, which suggests the institutional foundations for conflict inflation are absent. That absence is reflected in the disappearance of pro-cyclical movement (the “Goodwin effect”) in the wage share (Setterfield, 2021). Income distribution is not constant, but it now appears to be determined exclusively by deep institutional and political forces rather than in conjunction with shorter run cyclical forces associated with conflict inflation theory. The developments unleashed by Neoliberalism eroded the institutional conditions needed for conflict inflation, which suggests it is now less relevant.

## **10. Conclusion**

This paper has presented a formulation of conflict inflation that is termed the “pass-through” approach. It contrasts with the existing “pressure balance” formulation. The model generates a Phillips pattern and inflation - unemployment dynamics that are a hybrid of Keynesian and NAIRU dynamics. Conflict inflation is triggered when economic activity rises above the consistent claims level of activity. Above that level, inflation is subject to self-propelled conflict accelerationism. Immediately below that level, inflation holds constant at the expected rate. At low activity, accelerating disinflation can develop.

Worker militancy, corporate aggressiveness, negative supply shocks, and upward commodity price shocks all contribute to conflict inflation. They do so via two channels. First, they increase the intensity of conflict by increasing the degree of income claims inconsistency. Second, they lower the activity level at which conflict inflation kicks in. Conventional stabilization policy is poorly equipped to address conflict inflation. Instead, unconventional coordination policies can deliver superior outcomes.

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<sup>8</sup> The mistaken claim that all inflations are conflict inflations is akin to saying: “All dogs are poodles because poodles are dogs”. The reality is “Poodles are dogs, but not all dogs are poodles”.

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