

Endogenous Aspirations in an Evolutionary Game Approach to Conflict Inflation

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October 19, 2026

Abstract

Recent macroeconomic developments have renewed interest in the role of distributional conflict in shaping inflation dynamics. Building on Blanchard (2023)’s emphasis on bargaining power, this article revisits Rowthorn (1977)’s Conflict Claims Model (CCM), which interprets inflation as the result of incompatible income claims by workers and firms (capitalists). Although the framework remains analytically powerful, it lacks behavioural microfoundations and treats each class’s distributive aspirations and target wage shares as exogenous parameters. This paper fills both gaps by endogenising the target shares. In a dynamic game between large populations of workers and firms (capitalists), replicator dynamics reproduce the consistent-claims equilibria of the original model. We then extend the framework by allowing the targets to co-evolve with the strategic composition of each population: workers’ aspirations rise with the proportion of militant workers, while firms’ aspirations fall with the proportion of aggressive firms. This creates a fully coupled dynamical system in which aspirations, strategic militancy, and income distribution are jointly determined. The analysis provides behavioural microfoundations for CCM, formalises the evolution of bargaining power as a population process and endogenises the distributive aspirations that drive conflict.

1 Introduction

For decades, mainstream macroeconomics regarded inflation as a predominantly monetary phenomenon—a symptom of economic overheating, manageable through interest-rate policy (Friedman, 1968; Phelps, 1967). The expectations-augmented Phillips curve anchored this paradigm, positing a stable trade-off between inflation and unemployment and forming the analytical core of the monetary view. However, the post-Global Financial Crisis period exposed its fragility: unemployment reached historically low levels while inflation remained persistently subdued (Blanchard, 2016; Kuttner and Posen, 2019; International Monetary Fund, 2020). The apparent flattening and occasional breakdown of the Phillips curve revealed the limitations of a purely demand-driven interpretation of inflation (Ball and Mankiw, 2002).

This conundrum has spurred a major rethinking of inflation dynamics. Prominent mainstream economists such as Blanchard (2021, 2023) now argue that the traditional Phillips curve is insufficient and that inflation must be understood as a manifestation of distributive conflict between workers and firms. In this view, the apparent flatness of the Phillips curve during

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the 2010s reflected a period of subdued class conflict, where weakened labour bargaining power limited wage demands despite tight labour markets. By contrast, the post-pandemic inflation surge represents the re-emergence of distributive tensions, amplified by shifts in market power and supply disruptions. As Blanchard (2023) observes, inflation “depends on the state of the labour market, but also on the degree of market power of firms and the bargaining power of workers.”

Although novel in the mainstream context, this perspective resonates with the long-standing post-Keynesian Conflict Claims approach, initially formalised by Rowthorn (1977) and rooted in the work of Kalecki (1971). In this framework, inflation arises when workers and firms make incompatible claims on national income. More specifically, inflation occurs when the sum of workers’ desired wage share and firms’ target profit share exceeds the available product, generating a wage–price spiral. Recent contributions by Rochon and Lavoie (2023) argue that the renewed mainstream interest in distributive conflict represents, in many respects, a rediscovery of insights that have long occupied a central place in post-Keynesian monetary theory. The emerging political economy of inflation may therefore be viewed as a return to a Kaleckian–Rowthorn tradition, now enriched by contemporary concerns with bargaining power, market concentration, and institutional change.

Despite its analytical appeal, however, the Rowthorn model leaves the formation of distributive aspirations largely unexplained. The target wage shares of workers and firms are introduced as exogenous parameters, and the model therefore offers limited insight into the processes through which conflicting claims emerge, evolve, and persist over time. Yet if inflation results from incompatible distributive aspirations, understanding the mechanisms through which such aspirations are formed becomes essential. This issue is particularly important from an evolutionary perspective, where preferences, aspirations, and behavioural dispositions are themselves regarded as endogenous outcomes of social interaction and adaptation.

A small but growing literature has begun to address related questions using evolutionary game theory. Most closely related to our contribution is Lagerlöf (2022), who develops an evolutionary model of wage–price dynamics in which agents repeatedly interact and adapt their behaviour through payoff-based learning. While this literature demonstrates the usefulness of evolutionary methods for studying distributive conflict, the relationship between these models and the canonical post-Keynesian conflict inflation framework remains underexplored. Moreover, the endogenous formation of distributive aspirations has received little attention.

This paper addresses these issues by embedding Rowthorn’s conflict inflation model within an evolutionary game-theoretic framework. We first derive the macroeconomic conflict dynamics of Rowthorn (1977) from the strategic interactions of heterogeneous, boundedly rational agents while retaining exogenous target shares. In this baseline formulation, workers and capitalists repeatedly engage in a dynamic game over wage and price claims, adopting alternative bargaining strategies whose frequencies evolve according to replicator dynamics. This establishes a direct analytical connection between the conflict claims model and a well-defined process of evolutionary adaptation.

We then depart from the original framework by endogenising the target wage shares themselves. Rather than being fixed parameters, distributive aspirations emerge as population-level outcomes reflecting the prevailing strategic composition of each class. Workers’ aspirations increase with the prevalence of militant bargaining strategies, while firms’ aspirations respond to the strategic behaviour of competing firms. Inflation therefore becomes an emergent macroeconomic phenomenon generated by the co-evolution of distributive aspirations and strategic

interaction.

The resulting dynamic system admits steady-state solutions corresponding to the consistent-claims equilibria of the original Rowthorn model. At the same time, the evolutionary formulation generates a richer set of dynamic outcomes. Depending on the configuration of bargaining and adjustment parameters, the economy may converge to a class compromise, become trapped in polarised distributive conflict, or exhibit persistent endogenous cycles in militancy, aspirations, and income distribution. These results suggest that inflationary conflict can be understood not simply as the consequence of exogenously specified distributive targets, but as an emergent property of decentralised adaptive behaviour.

The paper contributes to three strands of literature. First, it provides evolutionary micro-foundations for the post-Keynesian conflict inflation model while preserving its core macroeconomic structure. Second, it contributes to the evolutionary economics literature by showing how macroeconomic inflation dynamics may emerge from boundedly rational strategic interaction and population-level adaptation. Third, it introduces an endogenous theory of distributive aspirations, thereby offering a novel closure to conflict inflation models and linking the evolution of bargaining behaviour directly to the dynamics of inflation and distribution.

The remainder of the paper proceeds as follows. Section 2 revisits Rowthorn’s model and defines the consistent-claims equilibrium. Section 3 constructs the evolutionary game and derives the corresponding dynamic system with exogenous targets. Section 4 demonstrates the equivalence between the micro-founded evolutionary model and the macro conflict dynamics, analysing both pure-strategy and mixed-strategy regimes. Section 5 extends the framework by endogenising the target wage shares, presenting a fully coupled dynamical system and exploring its behavioural implications. Section 6 concludes.

2 The Rowthorn Model and the Strategic Conflict Behind It

Let $w = W/P$ denote the real wage, where W is the nominal wage rate, and let l denote the constant unit labour requirement (the inverse of labour productivity). The wage share is then $\omega = w \cdot l = Wl/P$, that is, labour’s share of output. As in Rowthorn (1977), we consider a single final good, normalise total output to unity ($Y = 1$), and assume fixed labour productivity, so that l remains constant. Defining ω_w as workers’ desired wage share and ω_f as the wage share consistent with firms’ target profit margin, we express workers’ wage inflation as a function of the gap between their desired and actual wage share:

$$\pi_w = \beta(\omega_w - \omega), \quad \beta > 0, \quad (1)$$

where π_w denotes the rate of wage inflation and β is the speed at which workers adjust their wage demands in response to deviations from their target share, which we interpret as a measure of their bargaining strength¹. Firms’ price inflation, in turn, depends on the gap between the actual wage share and the maximum wage share compatible with their target profit margin:

$$\pi_p = \gamma(\omega - \omega_f), \quad \gamma > 0, \quad (2)$$

where π_p denotes the rate of price inflation and γ is the speed at which firms adjust prices in response to deviations from their target profit share, which we interpret as a measure of their

¹In contrast to Rowthorn (1977), we do not explicitly incorporate unemployment, and hence labour-market conditions and demand management, into the determination of workers’ distributive claims or bargaining power. We abstract from this channel here to focus on the evolutionary interaction between workers and firms and on how their distributive aspirations generate wage and price pressures. Our presentation therefore retains the distributive core of Rowthorn’s model rather than its full structure. The influence of labour-market conditions on workers’ bargaining power could be incorporated into the framework in future research.

pricing power. Under the assumption of constant labour productivity, adopted in Rowthorn (1977), the actual wage share evolves according to the difference between wage inflation and price inflation²:

$$\frac{\dot{\omega}}{\omega} = \pi_w - \pi_p. \quad (3)$$

This equation provides the fundamental link between distributive dynamics and the two sources of inflationary pressure: wage inflation generated by workers' distributive claims and price inflation generated by firms' efforts to defend their target profit share. Substituting (1) and (2) into (3) yields the differential equation governing the evolution of the wage share over time:

$$\dot{\omega} = \omega [(\beta\omega_w + \gamma\omega_f) - (\beta + \gamma)\omega]. \quad (4)$$

Equation (4) has the logistic form: $\dot{\omega} > 0$ for $0 < \omega < \omega^*$ and $\dot{\omega} < 0$ for $\omega > \omega^*$. The equilibrium ω^* is therefore globally asymptotically stable on $\omega > 0$, and the wage share converges monotonically to it from any positive initial condition. Whenever the actual wage share differs from the distributive aspirations of workers and firms, the interaction between wage and price adjustments alters income distribution over time. The steady-state equilibrium is obtained by imposing $\dot{\omega} = 0$. Since $\omega > 0$ ³, solving for ω yields the equilibrium wage share:

$$\omega^* = \frac{\beta\omega_w + \gamma\omega_f}{\beta + \gamma}. \quad (5)$$

This expression has a straightforward economic interpretation: the equilibrium wage share is a weighted average of the distributive aspirations of workers and firms, with weights given by their respective adjustment-speed parameters β and γ . The class with greater bargaining strength exerts greater influence over the long-run distribution of income. Substituting (5) into the price inflation equation (2) gives the corresponding steady-state inflation rate, which is common to wages and prices ($\pi^* = \pi_w^* = \pi_p^*$) since $\dot{\omega} = 0$:

$$\pi^* = \frac{\beta\gamma}{\beta + \gamma}(\omega_w - \omega_f). \quad (6)$$

According to the CCM, inflation reflects the incompatibility of workers' and firms' distributive claims. If both sides desire the same distribution of income ($\omega_w = \omega_f$), the distributive conflict disappears and equation (6) immediately implies $\pi^* = 0$. Conversely, whenever $\omega_w > \omega_f$, workers attempt to increase the wage share while firms resist this redistribution through price increases. Inflation therefore becomes the mechanism through which incompatible distributive claims are accommodated over time. This formalisation of the conflicting-claims model provides a useful framework for understanding inflation, as recent events have demonstrated. Its core insight—that persistent inflation stems from a fundamental distributional conflict incompatible with a constant price level—has been emphasised by authors such as Rochon and Lavoie (2023) as a recent 'rediscovery' of distributional conflict by mainstream economists like Blanchard (2023).

However, the equilibrium of the model, defined by equations (5) and (6), is fundamentally driven by exogenously given targets ω_w and ω_f . This raises a critical theoretical question: what determines these targets themselves? The model treats the fundamental conflict as given but does not explain its microeconomic origins. It is precisely this deeper layer of conflict that our paper addresses. This provides the missing micro-behavioural link, explaining not only the dynamics of the conflict but also its very origins.

²This follows directly from the definition of the wage share, $\omega \equiv Wl/P$. Taking logarithmic derivatives yields $\frac{\dot{\omega}}{\omega} = \frac{\dot{W}}{W} - \frac{\dot{P}}{P} + \frac{\dot{l}}{l}$. Under the assumption of constant labour productivity ($\dot{l} = 0$), this reduces to $\frac{\dot{\omega}}{\omega} = \pi_w - \pi_p$. Equivalently, with $Y = 1$, $\omega = WL/(PY)$, where $L = lY$ is employment, and constant productivity implies $\dot{L}/L = \dot{Y}/Y$, which cancels the output term.

³The case in which $\omega^* = 0$ lacks economic meaning.

We define a one-shot game between a representative worker and a representative firm. The strategic variable is *aggressiveness* in pursuing income claims. The Worker (W) can be Militant (**M**) or Moderate (**m**) in wage demands⁴. At the same time, the firm can be Aggressive (**A**) or Accommodating (**a**) in defending profit margins through price-setting. The payoff for each player depends on their own strategy and their opponent's. The interaction determines how a total output normalised to one is divided between wages and profits. When both players adopt aggressive strategies, however, conflict generates costs $c_W > 0$ and $c_F > 0$, reducing the total surplus available for distribution.

Table 1: Payoff matrix for the worker-capitalist game

		Firm	
		Aggressive (A)	Accommodating (a)
Worker	Militant (M)	$(\omega^* - c_W, 1 - \omega^* - c_F)$	$(\omega_H, 1 - \omega_H)$
	Moderate (m)	$(\omega_L, 1 - \omega_L)$	$(\omega_E, 1 - \omega_E)$

The model operates under the parameter ordering $\omega_H > \omega^* > \omega_E > \omega_L$, meaning that a militant worker obtains the highest wage share when facing an accommodating firm, while a moderate worker obtains the lowest wage share when facing an aggressive firm. Here ω^* denotes the wage share when both players adopt conflict strategies—workers militant and firms aggressive. We deliberately use the same symbol as the consistent-claims equilibrium of the Rowthorn model, anticipating that the distributive outcome of mutual conflict in the stage game corresponds to the macroeconomic equilibrium ω^* . The parameters $c_W > 0$ and $c_F > 0$ represent the costs of conflict borne by workers and firms when both adopt aggressive strategies.

In what follows, we will consider two contrasting economic interpretations in terms of class power and the costs of conflict. In the first regime, $\omega^* - c_W > \omega_L$ and $\omega_H > \omega^* + c_F$, both players find aggression profitable regardless of the opponent's strategy. Workers prefer militancy even against an aggressive firm, and firms prefer aggression even against militant workers. This corresponds to a situation in which the costs of conflict c_W and c_F are both sufficiently low relative to the distributive stakes, so neither side is deterred from fighting. It is a world of low conflict costs and entrenched distributive conflict, in which the two sides cannot escape the prisoner's-dilemma-like outcome of mutual aggression. The conflict costs are borne, but they are not large enough to induce either player to back down, as shown in the next proposition.

Proposition 1. *Suppose that $\omega^* - c_W > \omega_L$ and $\omega_H > \omega^* + c_F$. Then the worker has a strictly dominant strategy M, and the firm has a strictly dominant strategy A. Consequently, the game admits a unique Nash equilibrium in pure strategies given by (M, A), and no mixed-strategy Nash equilibrium exists.*

Proof. Since $\omega^* - c_W > \omega_L$ and $\omega_H > \omega_E$, the worker strictly prefers M to m regardless of the firm's strategy. Moreover, $\omega_H > \omega^* + c_F$ implies $1 - \omega^* - c_F > 1 - \omega_H$, and $\omega_E > \omega_L$ implies $1 - \omega_L > 1 - \omega_E$, so the firm strictly prefers A to a for either worker strategy. Hence

⁴A brief interpretive note: In the Kaleckian-Rowthorn tradition, the wage share is $\omega = w \cdot l$, with $l = L/Y$ constant in the absence of technical change. Thus, when workers in our game choose a target wage share ω_w or pursue ω_H , they are effectively choosing a nominal wage w through bargaining, with labour productivity fixed. Similarly, firms' target ω_f corresponds to their desired real wage (or profit margin) expressed through price-setting. The strategic conflict over ω is therefore a microfounded representation of real-world struggles over nominal wages and prices, anchored in the accounting identity that defines the wage share.

(M, A) is the unique Nash equilibrium. Because both players have strictly dominant strategies, no mixed-strategy equilibrium can arise. $\square$

In the second case, let us consider that $\omega^* - c_W < \omega_L$ and $\omega_H < \omega^* + c_F$, which means that both conflict costs are high enough to make aggression unattractive against a determined opponent, so each player's best response depends on what the other does. The game becomes a coordination problem with two pure Nash equilibria, (M, a) and (m, A) , and a completely mixed equilibrium. The mixed equilibrium (p^*, q^*) captures the strategic uncertainty that characterises this configuration: workers randomise between militancy and moderation, and firms randomise between aggression and accommodation, in proportions that make each player indifferent. This is the content of the next proposition.

Proposition 2. *Suppose that $\omega^* - c_W < \omega_L$ and $\omega_H < \omega^* + c_F$. Then the game has exactly three Nash equilibria: two in pure strategies, (M, a) and (m, A) , and one in completely mixed strategies (p^*, q^*) , where p^* is the probability that the worker plays M and q^* is the probability that the firm plays A :*

$$p^* = \frac{\omega_E - \omega_L}{\omega_E - \omega_L + \omega^* - \omega_H + c_F}, \quad q^* = \frac{\omega_H - \omega_E}{\omega_H - \omega_E + \omega_L - \omega^* + c_W}.$$

Proof. Since $\omega_H > \omega_E$, M is the worker's best response to a ; since $\omega^* - c_W < \omega_L$, m is the best response to A . Since $\omega_E > \omega_L$, A is the firm's best response to m ; since $\omega_H < \omega^* + c_F$, a is the best response to M . Hence (M, a) and (m, A) are mutual best responses, while (M, A) and (m, a) are not. For the mixed equilibrium, the worker's indifference between M and m requires $q(\omega^* - c_W) + (1 - q)\omega_H = q\omega_L + (1 - q)\omega_E$, which yields q^* . The firm's indifference between A and a requires $p(1 - \omega^* - c_F) + (1 - p)(1 - \omega_L) = p(1 - \omega_H) + (1 - p)(1 - \omega_E)$, which yields p^* . Both denominators are sums of two positive terms under the stated conditions, so $p^*, q^* \in (0, 1)$. $\square$

The contrast between the two regimes is therefore stark. In the first, both sides fight because fighting is cheap, and the economy settles at the mutual-conflict outcome (M, A) . In the second, both sides prefer to avoid conflict, but each would rather fight than accommodate if the other is aggressive; the economy settles at one of the two asymmetric equilibria (M, a) or (m, A) , depending on which side's expectations coordinate on the more aggressive posture. The conflict costs c_W and c_F are the key parameters distinguishing the two regimes: low costs on both sides produce mutual aggression, while high costs on both sides produce strategic uncertainty and multiple equilibria.

3 The Evolutionary Game

Now we are in a position to model the strategic interaction between workers and firms as an *asymmetric evolutionary game* following the framework of Hofbauer and Sigmund (1998). We now consider two large populations. At each moment, workers are randomly paired with firms. Each worker is programmed to play one of two pure strategies: Militant (M) or Moderate (m). Similarly, each firm is programmed to play either Aggressive (A) or Accommodating (a). Let x denote the proportion of militant workers in the worker population, and y the proportion of aggressive firms in the firm population. These frequencies evolve as agents update their strategies based on realised payoffs.

When a worker of type $i \in \{M, m\}$ is matched with a firm of type $j \in \{A, a\}$, the payoff to the worker is α_{ij} and the payoff to the firm is β_{ij} , where the payoff matrix is given in Table 1.

Because matching is random, the expected payoff to a militant worker depends on the current composition of the firm population. Specifically, a militant worker faces an aggressive firm with probability y and an accommodating firm with probability $1 - y$, yielding the expected payoff:

$$U(M) = y(\omega^* - c_W) + (1 - y)\omega_H = \omega_H - y(\omega_H - \omega^* + c_W). \quad (7)$$

Similarly, a moderate worker's expected payoff is:

$$U(m) = y\omega_L + (1 - y)\omega_E. \quad (8)$$

The average payoff across the worker population is

$$\bar{U}_W = xU(M) + (1 - x)U(m). \quad (9)$$

Analogously, an aggressive firm's expected payoff depends on the composition of the worker population:

$$U(A) = x(1 - \omega^* - c_F) + (1 - x)(1 - \omega_L) = 1 - \omega_L - x(\omega^* - \omega_L + c_F), \quad (10)$$

while an accommodating firm's expected payoff is:

$$U(a) = x(1 - \omega_H) + (1 - x)(1 - \omega_E). \quad (11)$$

The average firm payoff is

$$\bar{U}_C = yU(A) + (1 - y)U(a). \quad (12)$$

These expected payoffs determine the average fitness of each strategy and, through the replicator dynamics [see, e.g., Hofbauer and Sigmund (1998) or Weibull (1995)], govern the evolution of x and y over time. The random matching assumption ensures that the interaction is anonymous and that agents base their strategic choices on the population-wide frequencies they face. Strategy evolution follows the standard two-population replicator dynamics:

$$\dot{x} = x(1 - x)[U(M) - U(m)], \quad (13)$$

$$\dot{y} = y(1 - y)[U(A) - U(a)]. \quad (14)$$

Substituting the expected payoffs and simplifying yields

$$\dot{x} = x(1 - x) [\Delta_W - y\Gamma_W], \quad (15)$$

$$\dot{y} = y(1 - y) [\Delta_C - x\Gamma_C]. \quad (16)$$

where the payoff differences are denoted by:

$$\Delta_W \equiv \omega_H - \omega_E > 0, \quad (17)$$

$$\Delta_C \equiv \omega_E - \omega_L > 0, \quad (18)$$

and the interaction terms are written as:

$$\Gamma_W \equiv \omega_H - \omega^* + c_W - (\omega_E - \omega_L), \quad (19)$$

$$\Gamma_C \equiv \omega^* - \omega_H + c_F + (\omega_E - \omega_L). \quad (20)$$

Equivalently, $\Gamma_W = \Delta_W - (\omega^* - c_W - \omega_L)$ and $\Gamma_C = \Delta_C - (\omega_H - \omega^* - c_F)$, so that

$$U(M) - U(m) = \Delta_W - y\Gamma_W, \quad (21)$$

$$U(A) - U(a) = \Delta_C - x\Gamma_C. \quad (22)$$

The replicator dynamics describe how the frequencies of militant workers and aggressive firms evolve through a process of social learning or strategy imitation. Such a dynamic system has fixed points where the population shares remain constant ($\dot{x} = 0$ and $\dot{y} = 0$). The corner equilibria correspond to populations where all members of a class adopt a single strategy, namely $(0, 0)$, $(1, 0)$, $(0, 1)$ and $(1, 1)$. In addition to these pure-strategy configurations, an interior fixed point (x^*, y^*) may exist whenever both strategies coexist in each population.

The interior equilibrium occurs when strategies yield equal expected payoffs, that is, $U(M) = U(m)$ and $U(A) = U(a)$. For this equilibrium to be meaningful, we require $x^*, y^* \in (0, 1)$, which ensures that both strategies earn equal expected payoffs only for interior population shares. Under $\omega^* - c_W < \omega_L$ and $\omega_H < \omega^* + c_F$, the second term in each denominator is positive, so $x^*, y^* \in (0, 1)$. These expressions coincide with the mixed Nash equilibrium probabilities p^* and q^* of the stage game. Then the interior stationary point of the replicator system satisfies $x^* = p^*$ and $y^* = q^*$, which yields:

$$x^* = \frac{\omega_E - \omega_L}{(\omega_E - \omega_L) + (\omega^* - \omega_H + c_F)}, \quad (23)$$

$$y^* = \frac{\omega_H - \omega_E}{(\omega_H - \omega_E) + (\omega_L - \omega^* + c_W)}. \quad (24)$$

While these dynamics provide a complete description of the evolutionary process, a complementary question concerns the stability of equilibrium configurations: would a population at rest be resistant to invasion by small groups of mutants playing alternative strategies? This is the notion of evolutionary stability, introduced by Maynard Smith and Price (1973). An equilibrium is evolutionarily stable if, when established, it cannot be invaded by any small deviant group. For the pure-strategy equilibrium (M, A) , we can establish evolutionary stability directly from the payoff structure of the stage game, without recourse to dynamical analysis:

Proposition 3. *Under the pure-strategy regime conditions $\omega^* - c_W > \omega_L$ and $\omega_H > \omega^* + c_F$, the strategy profile (M, A) —where all workers play Militant and all firms play Aggressive—is an evolutionarily stable equilibrium of the asymmetric two-population game.*

Proof. At the corners, the factors $x(1 - x)$ and $y(1 - y)$ make the off-diagonal entries of the Jacobian of (15)–(16) vanish, so the eigenvalues are the diagonal entries. At $(1, 1)$ they are $-(\omega^* - c_W - \omega_L) < 0$ and $-(\omega_H - \omega^* - c_F) < 0$, so $(1, 1)$ is a sink. At $(0, 0)$ they are $\Delta_W > 0$ and $\Delta_C > 0$ (a source), at $(1, 0)$ they are $-\Delta_W < 0$ and $\omega_H - \omega^* - c_F > 0$, and at $(0, 1)$ they are $\omega^* - c_W - \omega_L > 0$ and $-\Delta_C < 0$ (both saddles). Moreover, $\Gamma_W < \Delta_W$ and $\Gamma_C < \Delta_C$ imply $x^*, y^* > 1$, so there is no interior fixed point. Finally, $U(M) - U(m) = \Delta_W - y\Gamma_W$ is linear in y and positive at $y = 0$ and $y = 1$, hence positive on $[0, 1]$; similarly $U(A) - U(a) > 0$ on $[0, 1]$. Thus $\dot{x} > 0$ and $\dot{y} > 0$ in the interior, and every interior trajectory converges to $(1, 1)$. $\square$

As we show in the next section, this result aligns with the replicator dynamics analysis, where $(1, 1)$ is asymptotically stable. The same inequalities that guarantee dominance in the stage game also ensure robustness against invasion. What about the mixed-strategy equilibrium (x^*, y^*) that emerges when the pure-strategy conditions are reversed? In this case, the equilibrium cannot be evolutionarily stable, as the following proposition demonstrates.

Proposition 4. *Suppose $\omega^* - c_W < \omega_L$ and $\omega_H < \omega^* + c_F$. Then the two-population replicator dynamics have six fixed points: the corners $(0, 0)$ and $(1, 1)$ are sources; the corners $(1, 0)$ and $(0, 1)$, which correspond to the strict Nash equilibria (M, a) and (m, A) , are asymptotically stable (hence evolutionarily stable strategies); and the interior fixed point (x^*, y^*) , which corresponds to the mixed Nash equilibrium, is a saddle. In particular, the mixed equilibrium is not evolutionarily stable, and the long-run outcome is one of the two asymmetric pure profiles, depending on the initial condition.*

Proof. A mixed equilibrium of an asymmetric game cannot be an ESS, since in asymmetric games only strict (hence pure) Nash equilibria are evolutionarily stable (Hofbauer and Sigmund, 1998). To characterise the dynamics, note that at (x^*, y^*) the diagonal entries of the Jacobian of (15)–(16) vanish, so its eigenvalues satisfy $\lambda^2 = x^*(1 - x^*)y^*(1 - y^*)\Gamma_W\Gamma_C > 0$, because $\Gamma_W, \Gamma_C > 0$ under the stated conditions. The eigenvalues are real with opposite signs, so (x^*, y^*) is a saddle. At the corners the Jacobian is diagonal; its entries are $-\Delta_W$ and $-(\omega^* - \omega_H + c_F)$ at $(1, 0)$, and $-(\omega_L - \omega^* + c_W)$ and $-\Delta_C$ at $(0, 1)$, all negative, while at $(0, 0)$ and $(1, 1)$ both are positive. Hence $(1, 0)$ and $(0, 1)$ are sinks and $(0, 0)$, $(1, 1)$ are sources. $\square$

Thus, the two equilibria have sharply different evolutionary properties. The pure-strategy equilibrium $(1, 1)$ is evolutionarily stable, representing an entrenched state of class warfare that resists invasion. The mixed-strategy equilibrium (x^*, y^*) is not evolutionarily stable; instead, it may give rise, as we show in the next section, to ongoing fluctuations in militancy and aggressiveness, with the population composition cycling around the equilibrium point. These contrasting outcomes—stable polarisation versus persistent cycles—provide a formal foundation for understanding the diverse historical patterns of class conflict and inflation.

4 The Dynamics of the Evolutionary–Distributional System

The previous section characterised the evolutionary dynamics of the strategic interaction between workers and firms for a *given* wage share, represented by the parameter ω . Here we close the model by letting ω be determined endogenously by the distributive dynamics of Rowthorn (1977), so that the strategic variables (x, y) and the wage share ω evolve jointly. We proceed in three steps: a benchmark with exogenous aspirations (Section 4.1), the endogenisation of aspirations (Section 4.2), and the analysis of steady states and their local stability (Section 4.3).

4.1 Benchmark: exogenous aspirations

In the standard Rowthorn model, the target wage shares ω_w (workers’ desired wage share) and ω_f (firms’ desired wage share) are exogenous constants, and the wage share adjusts at a speed proportional to the gap between each target and the current level, with bargaining-power parameters β and γ . Taking this formulation as a first step has two advantages: it provides a clear benchmark for the extension that follows, and it makes transparent the isomorphism between the replicator dynamics and the macroeconomic conflict equations. The integrated system consists of three differential equations:

$$\dot{x} = x(1 - x) \left[(\omega_H - \omega_E) - y(\omega_H - \omega + c_W + \omega_E - \omega_L) \right], \quad (25)$$

$$\dot{y} = y(1 - y) \left[(\omega_E - \omega_L) - x(\omega_H - \omega + c_F + \omega_E - \omega_L) \right], \quad (26)$$

$$\dot{\omega} = \omega \left[(\beta\omega_w + \gamma\omega_f) - (\beta + \gamma)\omega \right]. \quad (27)$$

Equation (27) implies that any steady state with $\omega > 0$ has

$$\omega^* = \frac{\beta\omega_w + \gamma\omega_f}{\beta + \gamma}, \quad (28)$$

which depends only on the constants ω_w and ω_f . The system (25)–(27) has the four corner steady states $(0, 0, \omega^*)$, $(1, 0, \omega^*)$, $(0, 1, \omega^*)$ and $(1, 1, \omega^*)$, and possibly an interior one (x^*, y^*, ω^*) in which both populations are polymorphic.

This specification has a clear shortcoming: by (28), the equilibrium wage share is *identical* across all these steady states. If $(x, y) = (1, 0)$, all workers are militant and all firms accommodating, and one would expect a high wage share, closer to ω_w than to ω_f . Yet the model delivers

the same ω^* as in the opposite configuration $(x, y) = (0, 1)$, where all workers are moderate and all firms aggressive. The strategic composition of the economy does not affect the steady-state distribution. The next subsection repairs this defect.

4.2 Endogenous aspirations

We now let each class's target depend on the strategic composition of that class:

$$\omega_w(x) = x\omega_H + (1-x)\omega_E, \quad \omega_f(y) = y\omega_L + (1-y)\omega_E. \quad (29)$$

Militant workers aspire to the high wage share ω_H (the outcome when they are militant and firms accommodate), while moderate workers anchor on the intermediate share ω_E (the outcome when both sides are accommodating). Aggressive firms aspire to the low wage share ω_L (high profits, obtained when firms are aggressive and workers moderate), while accommodating firms target ω_E . Hence ω_w is increasing in x , and ω_f is decreasing in y : a more militant workforce raises the collective wage aspiration, and a more aggressive business sector lowers the wage share firms are willing to accept.

Note that ω_w depends only on x , and ω_f only on y . This reflects a conceptual distinction between aspirations and expected payoffs. A militant worker's aspiration is the outcome associated with militancy under favourable conditions (ω_H), irrespective of how many firms are currently aggressive; likewise a moderate worker aspires to ω_E , and the same logic applies to firms. The expected payoff, by contrast, depends on the *other* class's composition through the matching process, and this is captured in the replicator equations (25)–(26). Thus aspirations evolve with the composition of one's own class, whereas payoffs depend on the full population state. The targets are now functions of the state variables, creating a feedback loop between strategic choices and distributive outcomes. At $(x, y) = (1, 0)$ we have $\omega_w(1) = \omega_H$ and $\omega_f(0) = \omega_E$, so

$$\omega^*(1, 0) = \frac{\beta\omega_H + \gamma\omega_E}{\beta + \gamma} \in (\omega_E, \omega_H).$$

It exceeds the moderate outcome ω_E , but falls short of ω_H , because firms do not fully concede to the militant workers' target. At $(x, y) = (0, 1)$ we have $\omega_w(0) = \omega_E$ and $\omega_f(1) = \omega_L$, so

$$\omega^*(0, 1) = \frac{\beta\omega_E + \gamma\omega_L}{\beta + \gamma} < \omega_E < \omega^*(1, 0).$$

The endogenous formulation therefore restores the intuitive link between strategy and distribution: when workers are militant and firms accommodating, the wage share is relatively high; when workers are moderate and firms aggressive, it is low. The replicator equations for x and y are unchanged. Substituting (29) into (27) gives

$$\dot{\omega} = \omega \left[(\beta + \gamma)\omega_E + \beta x(\omega_H - \omega_E) + \gamma y(\omega_L - \omega_E) - (\beta + \gamma)\omega \right]. \quad (30)$$

Equations (25), (26) and (30) constitute a three-dimensional autonomous dynamical system in the state variables (x, y, ω) . All parameters are as previously defined, and the targets are no longer exogenous but evolve with the strategic composition of the populations. A steady state (x^*, y^*, ω^*) satisfies $\dot{x} = \dot{y} = \dot{\omega} = 0$. As in Section 3, we distinguish between two types of equilibria: boundary solutions where $x \in \{0, 1\}$ or $y \in \{0, 1\}$, and interior solutions where both populations are polymorphic. To simplify the algebra, define

$$a = \omega_H - \omega_E > 0, \quad b = \omega_E - \omega_L > 0, \quad D = \omega_H + \omega_E - \omega_L, \quad S = \beta + \gamma. \quad (31)$$

Then $\omega_H - \omega + c_W + \omega_E - \omega_L = D + c_W - \omega$, and similarly for firms, and $\omega_L - \omega_E = -b$. The full system becomes

$$\begin{aligned} \dot{x} &= x(1-x)[a - y(D + c_W - \omega)], \\ \dot{y} &= y(1-y)[b - x(D + c_F - \omega)], \\ \dot{\omega} &= \omega[T(x, y) - \omega], \end{aligned} \quad (32)$$

where

$$T(x, y) = \frac{\beta \omega_w(x) + \gamma \omega_f(y)}{S} = \omega_E + \frac{\beta a x - \gamma b y}{S}. \quad (33)$$

T is the weighted average of the two targets, so $\omega_L \leq T(x, y) \leq \omega_H$. It is increasing in x and decreasing in y :

$$T_x = \frac{\beta a}{S} > 0, \quad T_y = -\frac{\gamma b}{S} < 0. \quad (34)$$

The wage share is thus always pulled toward $T(x, y)$, a moving target that depends on the strategic state. Finally, two algebraic identities will be used repeatedly:

$$a - D = -(\omega_E + b), \quad b - D = -\omega_H. \quad (35)$$

4.3 Steady states and local stability

Since $\dot{\omega}$ in (32) has the factor ω , $\omega = 0$ is trivially a steady state; we ignore it and restrict attention to $\omega > 0$. For $(x, y) \in \{0, 1\}^2$, the factors $x(1 - x)$ and $y(1 - y)$ vanish, and the positive steady-state wage share is $\omega = T(x, y)$:

$$\begin{aligned} \omega(0, 0) &= \omega_E, \\ \omega(1, 0) &= \frac{\beta \omega_H + \gamma \omega_E}{S} = \omega_E + \frac{\beta a}{S}, \\ \omega(0, 1) &= \frac{\beta \omega_E + \gamma \omega_L}{S} = \omega_E - \frac{\gamma b}{S}, \\ \omega(1, 1) &= \frac{\beta \omega_H + \gamma \omega_L}{S} = \omega_E + \frac{\beta a - \gamma b}{S}. \end{aligned} \quad (36)$$

Because $\gamma > 0$, each of these lies strictly below ω_H ; the useful differences are

$$\omega_H - \omega(1, 0) = \frac{\gamma a}{S}, \quad \omega_E - \omega(0, 1) = \frac{\gamma b}{S}, \quad \omega_H - \omega(1, 1) = \frac{\gamma(a + b)}{S}. \quad (37)$$

Write $\dot{x} = x(1 - x)A$ and $\dot{y} = y(1 - y)B$, with

$$A = a - y(D + c_W - \omega), \quad B = b - x(D + c_F - \omega). \quad (38)$$

Since A does not depend on x and B does not depend on y ,

$$\frac{\partial \dot{x}}{\partial x} = (1 - 2x)A, \quad \frac{\partial \dot{x}}{\partial y} = -x(1 - x)(D + c_W - \omega), \quad \frac{\partial \dot{x}}{\partial \omega} = x(1 - x),$$

and the analogous expressions hold for $\dot{y}$. At a corner, $x(1 - x) = y(1 - y) = 0$, so the off-diagonal entries of the first two rows vanish. In the third row, $\partial \dot{\omega} / \partial x = \omega T_x$, $\partial \dot{\omega} / \partial y = \omega T_y$ and $\partial \dot{\omega} / \partial \omega = T - 2\omega = -\omega$, using $T = \omega$ at a steady state. Hence

$$J = \begin{pmatrix} (1 - 2x)A & 0 & 0 \\ 0 & (1 - 2y)B & 0 \\ \omega T_x & \omega T_y & -\omega \end{pmatrix}. \quad (39)$$

This matrix is lower triangular, so its eigenvalues are the diagonal entries:

$$\lambda_1 = (1 - 2x)A, \quad \lambda_2 = (1 - 2y)B, \quad \lambda_3 = -\omega < 0. \quad (40)$$

The wage-share direction is therefore always stable, and stability is decided by the strategic eigenvalues λ_1 and λ_2 . Using (35), the values of A and B at the corners are

$$A|_{y=0} = a, \quad A|_{y=1} = -(\omega_E + b) - c_W + \omega, \quad (41)$$

$$B|_{x=0} = b, \quad B|_{x=1} = -\omega_H - c_F + \omega. \quad (42)$$

$(x, y) = (0, 0)$. Here $\omega = \omega_E$, $A = a$ and $B = b$, so $\lambda_1 = a > 0$, $\lambda_2 = b > 0$ and $\lambda_3 = -\omega_E < 0$. The point $(0, 0, \omega_E)$ is a saddle, hence unstable.

$(x, y) = (1, 0)$. Here $A = a$ and, from (42) and (37),

$$B = -(\omega_H - \omega(1, 0)) - c_F = -\frac{\gamma a}{S} - c_F < 0.$$

Hence

$$\lambda_1 = -a < 0, \quad \lambda_2 = -\left(\frac{\gamma a}{S} + c_F\right) < 0, \quad \lambda_3 = -\omega(1, 0) < 0,$$

and $(1, 0, \omega(1, 0))$ is locally asymptotically stable.

$(x, y) = (0, 1)$. Here $B = b$ and, from (41) and (37),

$$A = -(\omega_E + b) - c_W + \omega(0, 1) = -b - \frac{\gamma b}{S} - c_W < 0.$$

Hence

$$\lambda_1 = -\left(\frac{(S + \gamma)b}{S} + c_W\right) < 0, \quad \lambda_2 = -b < 0, \quad \lambda_3 = -\omega(0, 1) < 0,$$

and $(0, 1, \omega(0, 1))$ is locally asymptotically stable.

$(x, y) = (1, 1)$. From (42) and (37),

$$B = -(\omega_H - \omega(1, 1)) - c_F = -\frac{\gamma(a + b)}{S} - c_F < 0,$$

so $\lambda_2 = (1 - 2)B = -B = \gamma(a + b)/S + c_F > 0$. At least one eigenvalue is positive, so $(1, 1, \omega(1, 1))$ is unstable, whatever the sign of λ_1 (which depends on parameters).

Table 2 summarises these results.

(x, y)	ω	Eigenvalue signs	Stability
$(0, 0)$	ω_E	$(+, +, -)$	Unstable
$(1, 0)$	$\frac{\beta\omega_H + \gamma\omega_E}{S}$	$(-, -, -)$	Stable
$(0, 1)$	$\frac{\beta\omega_E + \gamma\omega_L}{S}$	$(-, -, -)$	Stable
$(1, 1)$	$\frac{\beta\omega_H + \gamma\omega_L}{S}$	$(\cdot, +, -)$	Unstable

Table 2: Stability of the corner steady states. A dot denotes a sign that depends on parameter values.

The system has two stable corners, each with its own distributive outcome: a “militant–accommodating” configuration with a relatively high wage share, $\omega(1, 0) > \omega_E$, and a “moderate–aggressive” configuration with a low one, $\omega(0, 1) < \omega_E$. The outcome depends on initial conditions. The two symmetric configurations $(0, 0)$ and $(1, 1)$ are unstable. Unlike the exogenous benchmark, the long-run distribution of income is now tied to the strategic convention that the economy settles into.

4.4 Interior steady states

Let $k = ab/S$ and $\Delta = c_W - c_F$. An interior steady state has $x, y \in (0, 1)$ and $\omega > 0$. Setting $\dot{x} = \dot{y} = 0$ in (32) gives $a - yP = 0$ and $b - xQ = 0$, i.e.

$$y = \frac{a}{P}, \quad x = \frac{b}{Q}, \quad P = D + c_W - \omega, \quad Q = D + c_F - \omega = P - \Delta, \quad (43)$$

while $\dot{\omega} = 0$ requires $\omega = T(x, y)$. Since $x, y < 1$, interiority requires

$$P > a > 0, \quad Q > b > 0. \quad (44)$$

Jacobian. Let $\alpha = x(1 - x) > 0$ and $\delta = y(1 - y) > 0$. Writing $\dot{x} = \alpha(a - yP)$ and $\dot{y} = \delta(b - xQ)$, and using $a - yP = b - xQ = 0$ at the steady state,

$$\partial_x \dot{x} = (1 - 2x)(a - yP) = 0, \quad \partial_y \dot{x} = -\alpha P, \quad \partial_\omega \dot{x} = \alpha y,$$

$$\partial_x \dot{y} = -\delta Q, \quad \partial_y \dot{y} = (1 - 2y)(b - xQ) = 0, \quad \partial_\omega \dot{y} = \delta x,$$

and $\partial_x \dot{\omega} = \omega T_x$, $\partial_y \dot{\omega} = \omega T_y$, $\partial_\omega \dot{\omega} = T - 2\omega = -\omega$. Hence

$$J = \begin{pmatrix} 0 & -\alpha P & \alpha y \\ -\delta Q & 0 & \delta x \\ \omega T_x & \omega T_y & -\omega \end{pmatrix}. \quad (45)$$

Its trace is $\text{tr } J = -\omega < 0$. Expanding along the first row,

$$\det J = \alpha \delta \omega [PQ - P x T_x - y Q T_y] = \alpha \delta \omega \left[PQ - \frac{k\beta P}{Q} + \frac{k\gamma Q}{P} \right], \quad (46)$$

where we used $T_x = \beta a/S$, $T_y = -\gamma b/S$, $x = b/Q$ and $y = a/P$. The characteristic polynomial is $\chi(\lambda) = \lambda^3 + p_2 \lambda^2 + p_1 \lambda + p_0$ with

$$p_2 = \omega, \quad p_1 = -\alpha \delta P Q - \alpha y \omega T_x - \delta x \omega T_y, \quad p_0 = -\det J.$$

Lemma 1. *If $\det J > 0$, the interior steady state is a saddle: J has exactly one positive real eigenvalue and two eigenvalues with negative real parts.*

Proof. Since $\chi(0) = p_0 = -\det J < 0$ and $\chi(\lambda) \rightarrow +\infty$, there is a positive real root r . The product of the three eigenvalues is $\det J > 0$ and their sum is $-\omega < 0$. Two positive eigenvalues would force the third to be positive (product > 0) and the sum to be positive, a contradiction. A positive and a negative real eigenvalue would give a negative product. Hence the other two eigenvalues are either real and both negative, or a complex pair; in both cases their real parts sum to $-\omega - r < 0$, so both are negative. $\square$

Reduction to one equation. By (43), $\omega = T = \omega_E + k(\beta/Q - \gamma/P)$. Substituting into $Q = D + c_F - \omega$ and using $D - \omega_E = a + b$, steady states correspond to roots of

$$H(Q) \equiv Q - (a + b + c_F) + \frac{k\beta}{Q} - \frac{k\gamma}{Q + \Delta} = 0, \quad Q \in \mathcal{Q} \equiv \{Q > \max(b, a - \Delta)\}, \quad (47)$$

where $\mathcal{Q}$ is the set on which (44) holds. Differentiating,

$$H'(Q) = 1 - \frac{k\beta}{Q^2} + \frac{k\gamma}{P^2}, \quad \text{so} \quad -PQ H'(Q) = -PQ + \frac{k\beta P}{Q} - \frac{k\gamma Q}{P}.$$

Comparing with (46),

$$\det J = \alpha \delta \omega PQ H'(Q^*). \quad (48)$$

Thus the sign of $\det J$ is the sign of the slope of H at the steady state.

Lemma 2. *$H < 0$ at the left boundary of $\mathcal{Q}$, and $H(Q) \rightarrow +\infty$ as $Q \rightarrow \infty$. Hence H has an odd number of roots in $\mathcal{Q}$, counted with multiplicity.*

Proof. If the boundary is $Q = b$ (so $P = b + \Delta \geq a$), then $k\beta/b = a\beta/S$ and

$$H(b) = -\frac{a\gamma}{S} - c_F - \frac{k\gamma}{P} < 0.$$

If the boundary is $Q_0 = a - \Delta > b$ (so $P = a$), then $k\gamma/a = b\gamma/S$ and

$$H(Q_0) = -b - c_W + \frac{k\beta}{Q_0} - \frac{b\gamma}{S}.$$

If $\Delta \leq 0$, then $Q_0 \geq a$ and $k\beta/Q_0 \leq b\beta/S < b$, so $H(Q_0) < 0$. If $\Delta > 0$, then $a - \Delta > b$ implies $ab/(a - \Delta) < b + \Delta$, so $k\beta/Q_0 < (b + \Delta)\beta/S$; with $c_W \geq \Delta$ this gives $H(Q_0) < -(b + \Delta)\gamma/S < 0$. The limit at infinity is immediate. $\square$

Proposition. *If the interior steady state is unique (and non-degenerate), it is a saddle.*

Proof. By Lemma 2, the unique root Q^* is a crossing from below, so $H'(Q^*) > 0$. By (48) and (44), $\det J > 0$, and Lemma 1 applies. $\square$

Uniqueness. (i) With equal costs, $c_W = c_F$, we have $P = Q$ and $QH(Q) = Q^2 - (a + b + c_F)Q + k(\beta - \gamma)$. This quadratic is negative at $Q = b$ by Lemma 2, so b lies between its roots and the smaller root is inadmissible; the interior steady state is therefore unique, and by the Proposition a saddle. (ii) More generally, $H''(Q) = 2k(\beta/Q^3 - \gamma/P^3)$, so H is convex on $\mathcal{Q}$ whenever $\beta P^3 > \gamma Q^3$ there, which again yields a unique root. (iii) Otherwise $QP H$ is a cubic and up to three interior steady states may coexist. The outermost has $H' > 0$ and is a saddle; the middle one has $H' < 0$, hence $p_0 > 0$, and its stability must be assessed with the Routh–Hurwitz conditions $p_0 > 0$ and $p_2 p_1 > p_0$.

The endogenisation of targets via introduces a rich feedback: the aspirations of each class are shaped by the prevalence of militant or aggressive strategies, while those strategies themselves respond to the current distribution. This creates the possibility of multiple steady states and complex dynamics, including cycles or regime switches. For instance, a rise in worker militancy (x) increases ω_w , which may fuel inflation (depending on the sign of $\beta - \alpha\gamma$), potentially altering the wage share and thus the incentives for future militancy. Conversely, an increase in firm aggressiveness (y) lowers ω_f , widening the gap between aspirations and reality and intensifying conflict.

This framework also allows us to reinterpret the exogenous targets of the original Rowthorn model as particular fixed points of this endogenous process. For example, if the system converges to a steady state with specific x^* and y^* , then the implied targets $\omega_w(x^*)$ and $\omega_f(y^*)$ become the effective constants of the reduced-form model. Thus, our approach provides microfoundations for the parameters that were previously taken as given. Moreover, the formulation preserves the essential conflict mechanism: because ω_w and ω_f are generally different (unless x and y take special values), the economy is driven by incompatible claims. The dynamics now capture not only how distribution evolves given aspirations, but also how aspirations co-evolve with distribution.

5 Concluding Remarks

This paper develops a unified framework that provides evolutionary microfoundations for the conflict theory of inflation while simultaneously endogenising the distributive aspirations that

drive the conflict. By integrating a replicator dynamic game between workers and firms with the Rowthorn model, we demonstrate how inflation, income distribution, and the very targets over which classes struggle emerge from strategic interactions. The intensity of class conflict is no longer assumed exogenously but arises from the evolving composition of militant workers and aggressive firms.

Our analysis proceeds in two stages. First, with exogenous target shares ω_w and ω_f , we show that the economy can converge to polarised regimes of worker or capitalist dominance—corresponding to pure-strategy Nash equilibria—or exhibit persistent cyclical conflict around an interior equilibrium that corresponds to the mixed-strategy Nash equilibrium. The latter offers a powerful explanation for the endemic nature of wage-price spirals in capitalist economies, with the ergodic property ensuring that time-averaged outcomes converge to the consistent-claims equilibrium.

Second, and more importantly, we extend the framework by endogenising the target shares themselves. Workers’ aspirations $\omega_w(x)$ rise with the proportion of militant workers, while firms’ aspirations $\omega_f(y)$ fall with the proportion of aggressive firms. This creates a fully coupled three-dimensional dynamical system in which aspirations, strategic militancy, and income distribution co-evolve. The coupling fundamentally alters the possible dynamics: the triangular structure is lost, enabling richer phenomena including multiple steady states, endogenous cycles, and bifurcations between regimes. Corner equilibria now carry distinct wage shares determined by the balance of aspirations and adjustment parameters, while interior equilibria require consistency between strategic choices and distributive outcomes.

Conflict theory complements rather than competes with shock-based explanations. It explains why identical shocks produce different outcomes across time and countries, and why inflation can long outlive its original cause. Our framework grounds these differences in the evolving balance of class power, now extended to include the endogenous evolution of aspirations. This offers a richer account of inflationary episodes, from the post-war compromise (where moderate aspirations supported stability) to the resurgence of distributional struggle in recent decades (where shifts in militancy and aggressiveness have amplified conflict).

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A Proofs of the evolutionary results

A.1 Preliminaries

Define

$$\Delta_W \equiv \omega_H - \omega_E > 0, \quad \Delta_C \equiv \omega_E - \omega_L > 0, \quad (49)$$

$$\theta_W \equiv \omega^* - c_W - \omega_L, \quad \theta_C \equiv \omega_H - \omega^* - c_F. \quad (50)$$

The quantity θ_W is the gain for a worker playing M instead of m against an aggressive firm, and θ_C is the gain for a firm playing A instead of a against a militant worker. From the expected payoffs,

$$U(M) - U(m) = (1 - y)\Delta_W + y\theta_W = \Delta_W - y\Gamma_W, \quad (51)$$

$$U(A) - U(a) = (1 - x)\Delta_C + x\theta_C = \Delta_C - x\Gamma_C, \quad (52)$$

where

$$\Gamma_W = \Delta_W - \theta_W = \omega_H - \omega^* + c_W - (\omega_E - \omega_L), \quad \Gamma_C = \Delta_C - \theta_C = \omega^* - \omega_H + c_F + (\omega_E - \omega_L). \quad (53)$$

The replicator system is therefore

$$\dot{x} = x(1 - x) [(1 - y)\Delta_W + y\theta_W], \quad (54)$$

$$\dot{y} = y(1 - y) [(1 - x)\Delta_C + x\theta_C]. \quad (55)$$

Its fixed points are the four corners and, when it exists in $(0, 1)^2$, the interior point

$$x^* = \frac{\Delta_C}{\Gamma_C} = \frac{\omega_E - \omega_L}{\omega_E - \omega_L + \omega^* - \omega_H + c_F}, \quad y^* = \frac{\Delta_W}{\Gamma_W} = \frac{\omega_H - \omega_E}{\omega_H - \omega_E + \omega_L - \omega^* + c_W}, \quad (56)$$

which coincides with the mixed Nash equilibrium (p^*, q^*) of the stage game.

At a corner, the factors $x(1 - x)$ and $y(1 - y)$ make the off-diagonal entries of the Jacobian vanish, so the eigenvalues are the diagonal entries. Writing $F(y) \equiv (1 - y)\Delta_W + y\theta_W$ and $G(x) \equiv (1 - x)\Delta_C + x\theta_C$, these entries are $\pm F(y)$ and $\pm G(x)$ evaluated at the corner:

Corner	Eigenvalue in x	Eigenvalue in y
(0, 0)	$F(0) = \Delta_W$	$G(0) = \Delta_C$
(1, 0)	$-F(0) = -\Delta_W$	$G(1) = \theta_C$
(0, 1)	$F(1) = \theta_W$	$-G(0) = -\Delta_C$
(1, 1)	$-F(1) = -\theta_W$	$-G(1) = -\theta_C$

In asymmetric games, a profile is an evolutionarily stable strategy (ESS) if and only if it is a strict Nash equilibrium, and strict equilibria are pure (Weibull, 1995; Hofbauer and Sigmund, 1998).

A.2 Proof: anti-coordination regime

Proposition 5. *Suppose $\omega^* - c_W < \omega_L$ and $\omega_H < \omega^* + c_F$ (that is, $\theta_W < 0$ and $\theta_C < 0$). Then the stage game has exactly three Nash equilibria: the strict equilibria (M, a) and (m, A) , and the completely mixed equilibrium (p^*, q^*) . In the replicator dynamics, the corners $(1, 0)$ and $(0, 1)$ are asymptotically stable (hence ESS), the corners $(0, 0)$ and $(1, 1)$ are sources, and the interior point (x^*, y^*) is a saddle; in particular, the mixed equilibrium is not evolutionarily stable.*

Proof. Stage game. Since $\omega_H > \omega_E$, M is the worker's best response to a ; since $\theta_W < 0$, m is the best response to A . Since $\omega_E > \omega_L$, A is the firm's best response to m ; since $\theta_C < 0$, a is the best response to M . Hence (M, a) and (m, A) are mutual best responses, and both are strict because every comparison above is strict. The profiles (M, A) and (m, a) are not equilibria. In the mixed equilibrium, each player is indifferent between pure strategies, which gives y^* and x^* above (with $p^* = x^*$ and $q^* = y^*$). Since $\theta_W, \theta_C < 0$, we have $\Gamma_W = \Delta_W + |\theta_W| > \Delta_W > 0$ and $\Gamma_C = \Delta_C + |\theta_C| > \Delta_C > 0$, so $x^*, y^* \in (0, 1)$.

Corners. From the table, at $(1, 0)$ the eigenvalues are $-\Delta_W < 0$ and $\theta_C < 0$; at $(0, 1)$ they are $\theta_W < 0$ and $-\Delta_C < 0$. Both are sinks. At $(0, 0)$ they are $\Delta_W > 0$ and $\Delta_C > 0$; at $(1, 1)$ they are $-\theta_W > 0$ and $-\theta_C > 0$. Both are sources.

Interior point. At (x^*, y^*) both brackets in (54)–(55) vanish, so the diagonal of the Jacobian is zero and

$$J = \begin{pmatrix} 0 & -x^*(1-x^*)\Gamma_W \\ -y^*(1-y^*)\Gamma_C & 0 \end{pmatrix}, \quad \lambda^2 = x^*(1-x^*)y^*(1-y^*)\Gamma_W\Gamma_C > 0.$$

The eigenvalues are real and of opposite sign, so (x^*, y^*) is a saddle. (A center would require $\Gamma_W\Gamma_C < 0$, the matching-pennies structure, which is excluded here.) The mixed equilibrium is also not strict, so it is not an ESS. The stable manifold of the saddle separates the basins of attraction of $(1, 0)$ and $(0, 1)$. $\square$

A.3 Proof: dominance regime

Proposition 6. *Suppose $\omega^* - c_W > \omega_L$ and $\omega_H > \omega^* + c_F$ (that is, $\theta_W > 0$ and $\theta_C > 0$). Then (M, A) is the unique Nash equilibrium of the stage game, it is strict, and hence an ESS. In the replicator dynamics it corresponds to the corner $(1, 1)$, which attracts every trajectory starting in the interior of the unit square, and there is no interior fixed point.*

Proof. Stage game. Against A , the worker earns $\omega^* - c_W$ from M and ω_L from m , and $\theta_W > 0$; against a , M earns ω_H and m earns ω_E , and $\Delta_W > 0$. Hence M is strictly dominant. Against M , the firm earns $1 - \omega^* - c_F$ from A and $1 - \omega_H$ from a , and $\theta_C > 0$; against m , A earns $1 - \omega_L$ and a earns $1 - \omega_E$, and $\Delta_C > 0$. Hence A is strictly dominant. Therefore (M, A) is the unique Nash equilibrium, and it is strict, hence an ESS.

Corners. From the table, at $(1, 1)$ the eigenvalues are $-\theta_W < 0$ and $-\theta_C < 0$, so $(1, 1)$ is a sink. At $(0, 0)$ they are $\Delta_W > 0$ and $\Delta_C > 0$ (a source). At $(1, 0)$ they are $-\Delta_W < 0$ and $\theta_C > 0$, and at $(0, 1)$ they are $\theta_W > 0$ and $-\Delta_C < 0$ (both saddles).

No interior fixed point. For $y \in [0, 1]$, the bracket $F(y) = (1 - y)\Delta_W + y\theta_W$ is a convex combination of the positive numbers Δ_W and θ_W , hence strictly positive. Likewise $G(x) = (1 - x)\Delta_C + x\theta_C > 0$ on $[0, 1]$. An interior fixed point would require $F(y) = 0$ and $G(x) = 0$, which is impossible.

Global convergence. In the open square, $\dot{x} > 0$ and $\dot{y} > 0$. Hence along any interior trajectory $x(t)$ and $y(t)$ are strictly increasing and bounded by 1, so they converge to some $(\bar{x}, \bar{y})$ with $\bar{x} \geq x(0) > 0$ and $\bar{y} \geq y(0) > 0$. The limit is a fixed point, and a fixed point with $\bar{x}, \bar{y} > 0$ must satisfy $\bar{x} = 1$ or $F(\bar{y}) = 0$, and $\bar{y} = 1$ or $G(\bar{x}) = 0$. Since $F, G > 0$, this forces $(\bar{x}, \bar{y}) = (1, 1)$. $\square$

A.4 Remarks

1. The two regimes use the same system (54)–(55); only the signs of θ_W and θ_C differ. When the two signs differ, one class is dominant, and the equilibrium is unique and asymmetric: (M, a) if $\theta_W > 0 > \theta_C$ and (m, A) if $\theta_C > 0 > \theta_W$.
2. All inequalities are assumed strict (genericity). The knife-edge cases $\theta_W = 0$ or $\theta_C = 0$ produce non-strict equilibria and continua of fixed points, and are not covered.