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# **Inflation is always and everywhere ... a conflict phenomenon: post-Keynesian inflation theory and energy price driven conflict inflation, distribution, demand and employment**

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Transition‘, Berlin, 19 – 21 October 2023

# 1. Introduction

- Empirical studies: rise in inflation in the course of Covid crisis and the war in Ukraine has been associated with rising profits/profit shares (Bivens 2022, Ferguson/Storm 2023, Konczal/Luisiani 2022, Stiglitz/Regmi 2022, Weber/Wasner 2023, Ragnitz 2022, Tölgyes/Piecek 2023)
- Profit-driven inflation or ‘sellers’ inflation’ (Weber/Wasner 2023) as opposed to (government spending driven) aggregate excess demand or excess money-supply driven inflation
- Underlying causes: higher import prices, higher energy prices, higher mark-ups of firms, lower labour force participation due to Covid, changes in the structure of demand (from services to goods), bottlenecks due to disruptions in global value chains in the production of goods, ...
- Weber/Wasner (2023): three stages
  - (1) Rising prices in systemically significant upstream sectors create windfall profits and provide an impulse for further price hikes.
  - (2) To protect profit margins, downstream sectors propagate, or amplify price pressures.
  - (3) Labour responds by trying to defend real wage in the conflict stage.

➤ **Relationship with post-Keynesian theory of inflation?**

- 1. Introduction**
- 2. Post-Keynesian theory of inflation I: The Keynes, Kaldor, Robinson, Marglin tradition**
- 3. Post-Keynesian theory of inflation II: The Kalecki, Rowthorn, Dutt tradition**
- 4. Two basic Kaleckian modelling frameworks**
- 5. Effects of imported energy price increase and policy implications in the two basic Kaleckian frameworks**
- 6. Conclusions**

## 2. Post-Keynesian theory of inflation I: Keynes, Kaldor, Robinson, Marglin

- **Keynes (1930, Chpt. 10): The fundamental equations for the value of money**
  - **Income inflation:** changes in the rate of efficiency earnings (unit labour costs, unit normal profits)
  - **Profit inflation:** excess demand, i.e. inequality of saving and investment (due to deviation of money rate of interest from Wicksellian real rate → monetary policy as a remedy)
- **Keynes (1936, Chpt. 21): The theory of prices**
  - **Semi inflation:** discontinuous increase in wage unit below full employment, determined by psychology of workers and by policies of employers and trade unions
  - **Absolute (true) inflation:** increase in effective demand at full employment causes rise in prices and money wages

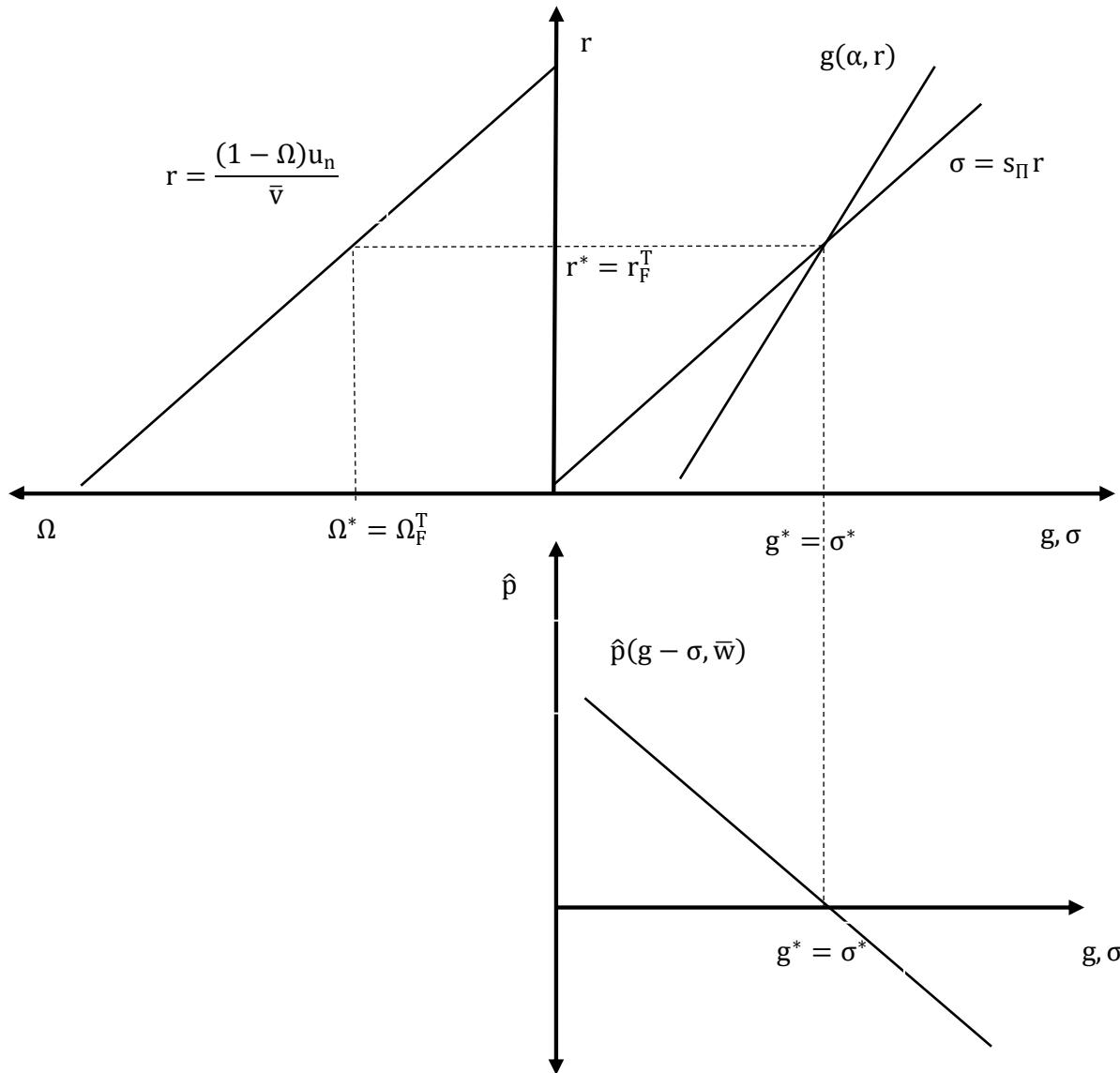
## Post-Keynesian growth and distribution theory – Kaldor and Robinson

- Flexible prices in the goods market relative to sticky nominal wages adjust saving to investment (in the long run)
- Without real income resistance of any social group, an increase in prices is a temporary equilibrium adjustment phenomenon

‘Without a continued rise in money wages inflation could not go on as a *process* in time-since whatever forces were present in the economy making for a rise in prices, they could only have caused a once-and-for-all rise in prices which would in itself have served to eliminate the excess demand that gave rise to it.’ (Kaldor 1959, p. 292, emphasis in original)

➤ Inflation arises if any group resists re-distribution

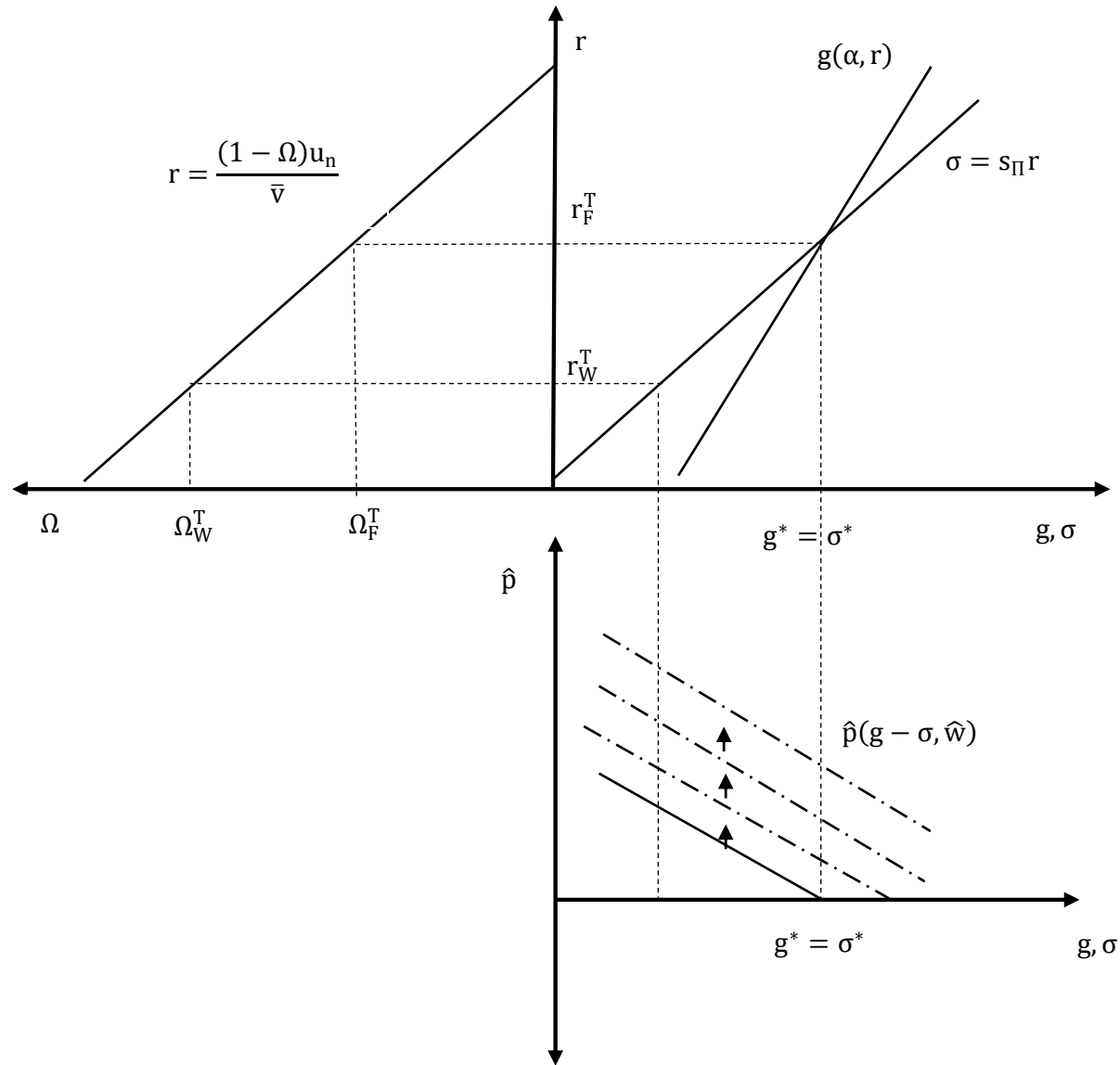
**Figure 1: The post-Keynesian Kaldor-Robinson distribution and growth model**



**Kaldor (1955/6, 1957), Robinson (1956, 1962):**

- Long-run normal utilisation of capacity given by the capital stock ( $u_n$ )
- Given capital potential output ratio ( $v$ )
- Equilibrium of accumulation rate ( $g$ ) and saving rate ( $\sigma$ ) determine equilibrium distribution, i.e. normal profit rate ( $r^*$ ) and wage share ( $\Omega$ )
- Higher desired accumulation rate leads to higher equilibrium accumulation and profit rate and to lower wage share.
- Paradox of saving in the long run
- Adjustments to equilibrium through inflation or deflation relative to rigid nominal wages ( $w$ )
- Inflation/deflation as equilibrium adjustment phenomenon

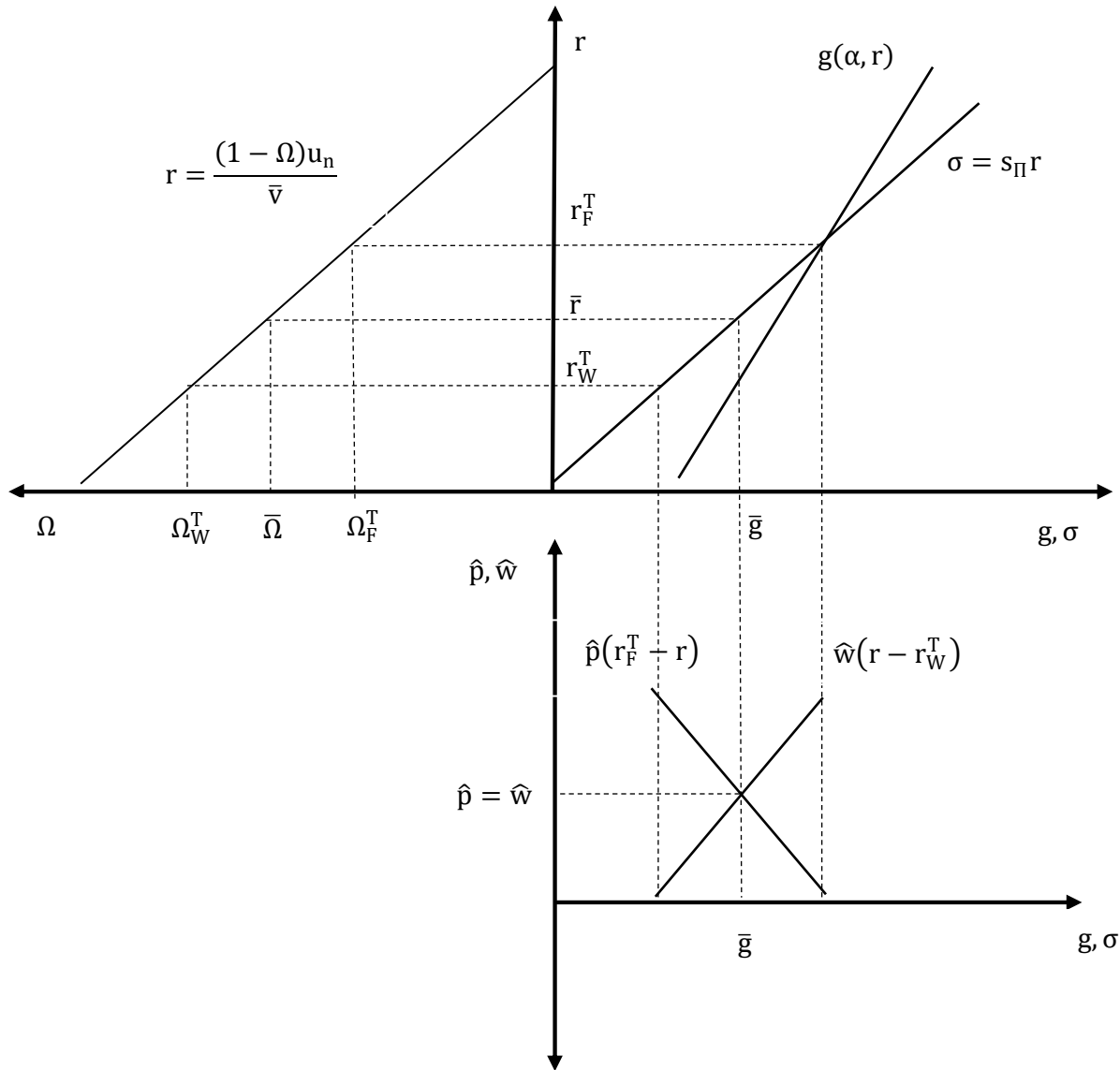
**Figure 2: The post-Keynesian Kaldor-Robinson distribution and growth model: the inflation barrier**



### Inflation barrier (Robinson 1956, 1962)

- Workers' resist lowering the real wage rate/wage share below some level
  - Goods market equilibrium rate of profit cannot be attained
  - Target profit rate of firms ( $r_F^T$ ) and target profit rate of workers ( $r_W^T$ ) are inconsistent
  - Price-wage-price spiral fed by excess demand and real wage resistance of workers → cumulative rise in inflation
  - Way out: dampen firms desire to invest (restrictive monetary policy?) and/or increase propensity to save out of profits (encourage higher retention ratio)
- 
- Robinson (1938): currency devaluation induced price-wage-price spiral as explanation for great German inflation (1922-23)
  - Kaldor (1959): profit-wage-price spiral: workers' desire to share in rising profits drives wage inflation
  - Kaldor (1976): imported commodity price-price-wage-price spiral in early/mid 1970s, associated with recession (buffer stocks to dampen inflation)

**Figure 3: Marglin's (1984) reconciliation of real wage resistance and the principle of effective demand**

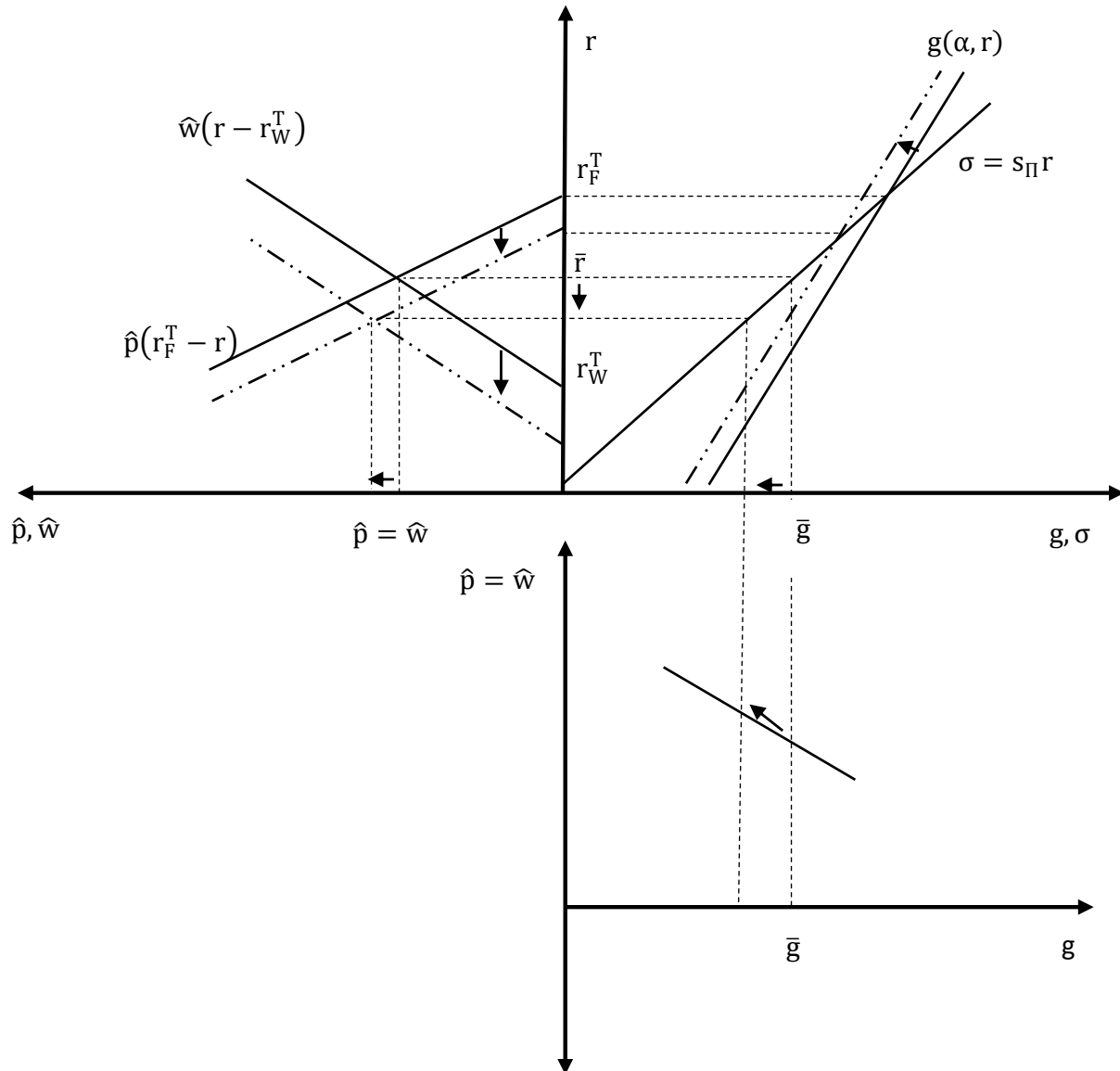


### Marglin's (1984) hybrid model

- Marxian and Kaldorian/Robinsonian features
- Overdetermined model
- Wage inflation depends positively on deviation of wage share from workers' target, price inflation on deviation of rate of profit from firms' target
- Distribution equilibrium at  $p^{\wedge}=w^{\wedge}$ : neither workers attain their target wage share nor can capitalists realise their investment plans
- A higher propensity to accumulate leads to higher inflation, a higher profit rate and a higher accumulation rate.
- A higher target wage share of workers leads to higher wage and price inflation, lower profit rate and lower accumulation rate
- The paradox of thrift is not generally valid
- No explicit role for inflation expectations



**Figure 4: An increase in imported energy prices in Marglin's (1984) model**



**Effects of an increase in (imported) energy prices:**

- Harcourt (2006, Chpt. 6): application to post-WWII growth episodes
- Lower animal spirits (or export surplus) dampen excess demand in the goods market and lower firms target profit rate
- Higher imported energy prices increase workers' target wage share in domestic production to keep real wages constant
- Case 1: lower accumulation, lower profit rate/share and higher inflation (as shown) → stagflation
- Case 2 (not shown): lower accumulation, lower profit rate/share and lower inflation → disinflationary/deflationary slowdown/recession

**Problems:**

- Model assumes permanent normal utilisation
- Increase in workers' target wage share is always contractionary, wage-led demand/growth impossible
- Increase in energy prices has no direct effect on firms' target profit share or rate, indirect effect is negative
- Rising energy prices and rising profit rate/share impossible
- What about inflation expectations?

# 3. Post-Keynesian theory of inflation II: Kalecki, Rowthorn, Dutt

## Basic framework (Kalecki 1954)

- Flexible prices only in the primary sector → changes in demand trigger changes in prices
- Mark-up pricing on unit variable costs in industry and services → changes in demand trigger changes in capacity utilisation, which is endogenous beyond the short run
- Mark-up is determined by degree of price competition, overhead costs and bargaining power of trade unions
- Profit share (including overheads) and wage share of direct labour are determined by: Mark-up, ratio of unit raw material costs to unit direct labour costs (ratio  $z$ ), and sectorial composition

## Basic Kaleckian open economy model (Hein/Vogel 2008)

- Raw materials are imported, output competes in international markets
- Domestic distribution depends on: Mark-up and ratio between unit imported raw material costs and unit wage costs (ratio  $z$ ), i.e. on nominal exchange rate, foreign price (inflation) and domestic wage (inflation)
- Real devaluation (falling nominal wages, rising foreign prices, nominal devaluation) raise domestic profit share even with a constant mark-up

## **Inflation and distribution: Kaleckian perspectives**

### **Kalecki (1971, chpt. 14): *Class struggle and distribution of national income***

- Increase in money wages may squeeze the mark-up
- ‘A redistribution of national income from profits to wages will take place then. But this redistribution is much smaller than that which would obtain if prices were stable. The rise in wages is to a great extent „shifted to consumers“. ... (T)he day-by-day bargaining process is an important co-determinant of the distribution of national income.’ (Kalecki 1971, pp. 162-164)

### **Sylos-Labini (1979)**

- Differentials in unit labour costs (growth) within industries are precondition for nominal wage variations to affect distribution.
- With nominal wage growth rising only most productive firm can fully pass wage increases to prices – average mark-up falls.
- With nominal wage growth falling, only least productive firm has to fully pass this on to prices – average mark-up rises.

## Rowthorn (1977)

- Inconsistent targets generate ***unanticipated inflation***, hence accelerating inflation, and a Philips curve for ***unanticipated inflation***, with taxes and import prices as shift factors, and incomplete pass through of wage inflation to price inflation, hence effects on distribution.
- **low inflation regime:** inflation expectations do not feed into wage inflation → Phillips curve for unemployment and inflation
- **high inflation regime:** high compensatory wage inflation, i.e. unanticipated inflation will be positive and inflation will accelerate → Phillips curve for unanticipated inflation

## Dutt (1987)

- Critique of Marglin (1984), includes **below full capacity regime and wage-led growth**
- Inconsistent targets generate **inflation** and have an impact on **equilibrium distribution**
- Rise of workers' powers leads to higher wage share, higher inflation and higher demand/growth in a wage-led economy → Phillips curve
- Fall of capitalists' power will lead to higher wage share, lower inflation and higher demand/growth in a wage-led economy → opposite of Phillips curve
- No inclusion of inflation expectations.

## 4. Two basic Kaleckian modelling frameworks

### 1. Dutt (1987), Blecker/Setterfield (2019), Lavoie (1992, 2014, 2022)

- See also Dutt (1992), Casetti (2002, 2003), Palley (2007), Rochon/Setterfield (2007), Setterfield (2007, 2009, 2022), ...
- No or incomplete effect of inflation expectations ('indexation') in wage/price inflation equations
- Inconsistent claims generate constant inflation/deflation and distribution at any rate of employment, no inflation barrier
- Consistent claims generate zero inflation

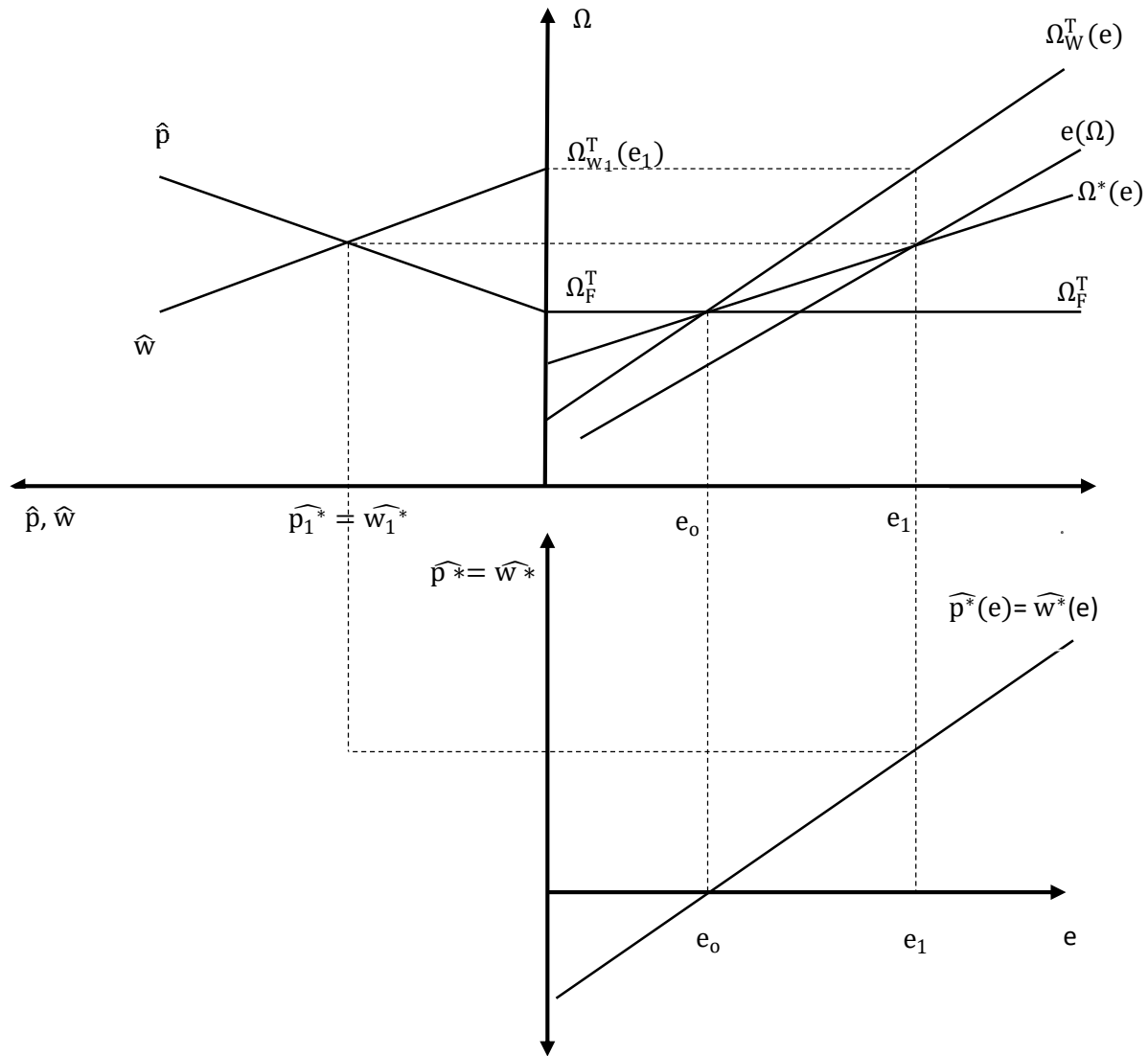
### 2. Rowthorn (1977), Hein/Stockhammer (2011), Hein (2023)

- See also Arestis/Sawyer (2005), Hein/Stockhammer (2010), Lavoie (2006), Sawyer (2002), Stockhammer (2008), ...
- Adaptive inflation expectations of workers in wage inflation equation
- Inconsistent claims generate unexpected (dis-)inflation and changes in distribution at any rate of employment deviating from the inflation barrier (NAIRU, SIRE)

'... there is a NAIRU at any point in time, but it is neither exogenous nor is it a strong attractor for actual unemployment.'  
(Stockhammer 2008, p. 500-501)

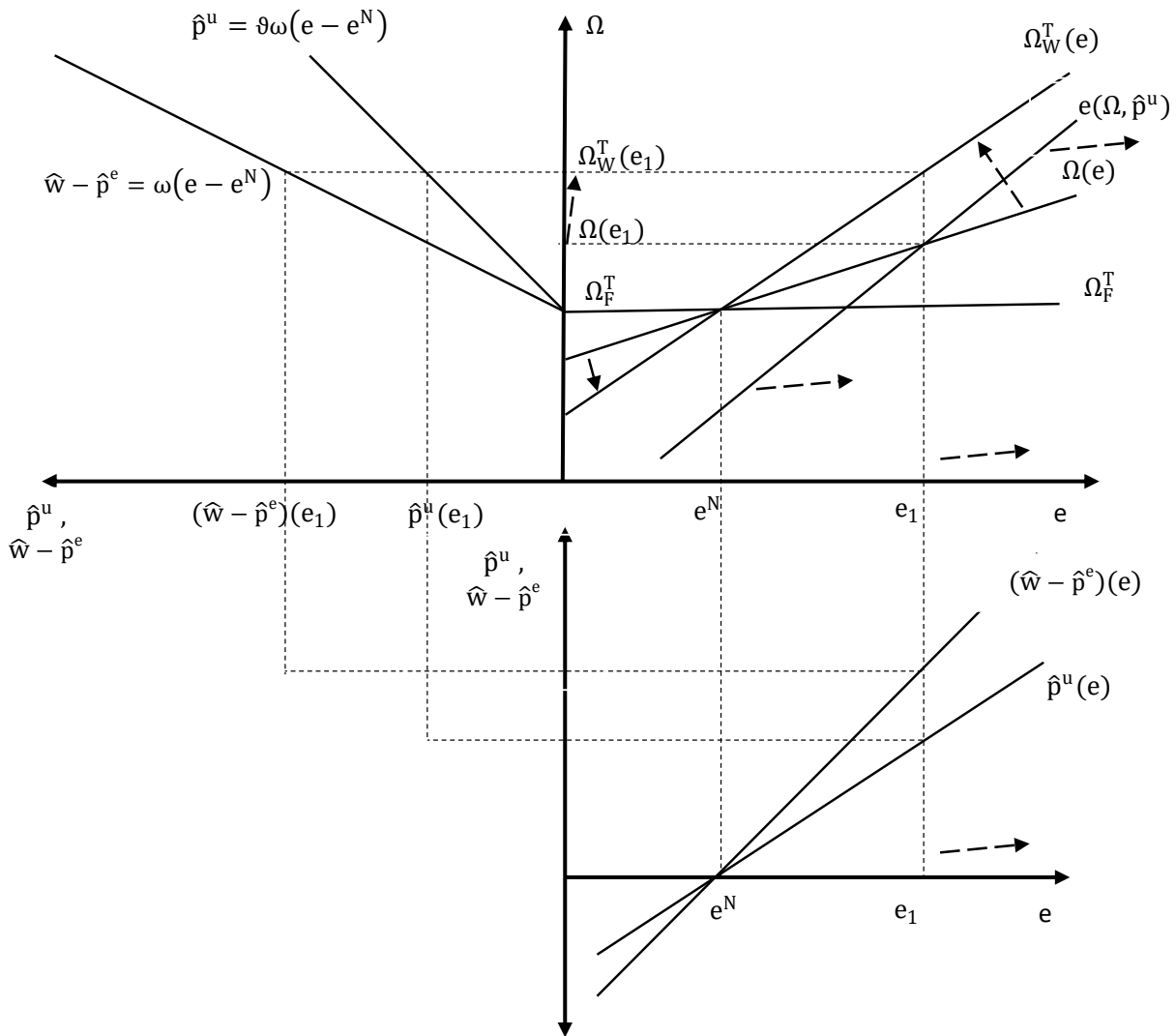
- Only consistent claims generate constant rate of inflation and constant income distribution
- Consistent claims equilibrium is endogenous to aggregate demand and economic policies (endogenous aspirations, labour market persistence, capital stock effects, real interest rate, tax rate and real exchange rate effects on targets, ...)

**Figure 6: Conflicting claims, distribution and inflation in the Dutt, Blecker/Setterfield, Lavoie framework**



- Workers' target wage share ( $\Omega_W^T$ ) depends on structure of the labour market and the employment rate ( $e$ )
- Firms' target profit/wage share ( $\Omega_F^T$ ) given by constant mark-up
- Wage inflation ( $\hat{w}$ ) and price inflation ( $\hat{p}$ ) with incomplete indexation
  - Stable upwards sloping Phillips curve
  - Stable profit squeeze distribution curve ( $\Omega(e)$ )
- Wage-led demand and employment regime ( $e(\Omega)$ ) (with constant labour productivity)
  - Overall stability requires employment curve to be steeper than distribution curve
- Higher workers' target wage share
  - higher inflation, higher wage share, higher employment rate
- Higher firms' target profit share
  - higher inflation, lower wage share, lower employment rate

**Figure 7: Conflicting claims, changes in distribution and unexpected inflation in the Rowthorn, Hein/Stockhammer framework**



- Workers' target wage share ( $\Omega_W^T$ ) depends on structure of the labour market and the employment rate ( $e$ )
- Firms' target profit/wage share ( $\Omega_F^T$ ) given by constant mark-up
- Wage inflation ( $w^\wedge$ ) with adaptive expectations/full indexation
- Price inflation ( $p^\wedge$ ) with only partial pass-through of excess wage inflation
- Unexpected price inflation  $p^{\wedge u}$  falls short of excess wage inflation
- Profit squeeze distribution curve
- Wage-led demand and employment curve (given labour productivity) with real debt effects
- Around the stable inflation rate of employment (SIRE =  $e^N$ )
- No stable Phillips curve, positive or negative unexpected inflation
- No stable profit-squeeze distribution curve, rotation towards workers' target curve
- Wage-led demand and employment curve is shifting outwards because of real debt effect (normal case of real interest rate variations, debt burdened regime)
- SIRE/NAIRU is 'not a strong attractor' (Sawyer 2002)

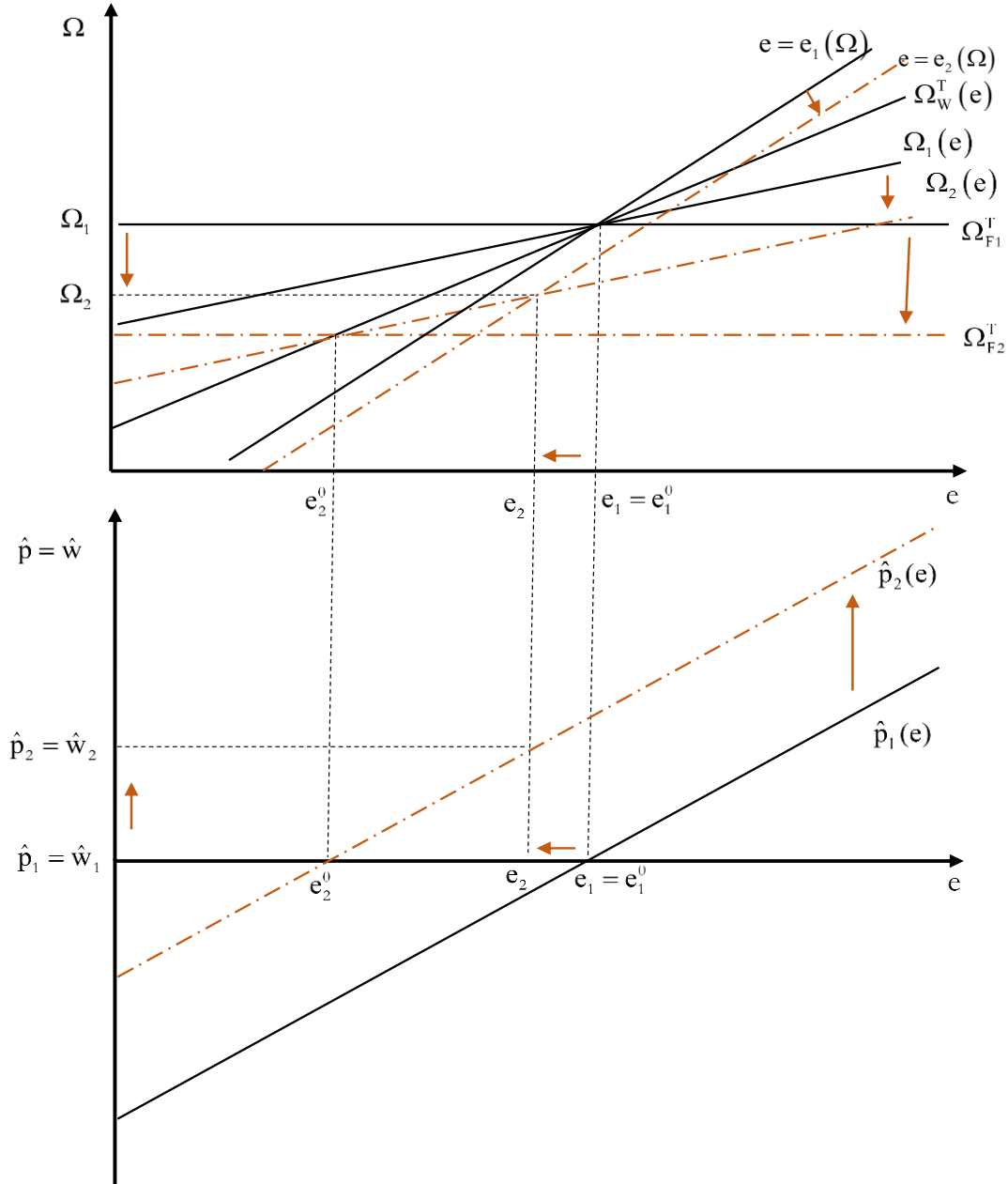
## 5. Effects of imported energy price increase and policy implications in the two Kaleckian frameworks

Four step qualitative graphical description for both modelling frameworks:

1. Increase in imported energy prices and hence in real exchange rate starting from distribution equilibrium
2. Firms take advantage of supply constraints and increase mark-ups
3. Inflation targeting central bank drive long-term real interest rate up
4. Post-Keynesian alternative policy approach



**Figure 8a: An increase in imported energy prices in the Dutt, Blecker/Setterfield, Lavoie framework**



### Open economy

- Increase in energy prices leads to a permanently higher real exchange rate
- Workers only buy from domestic firms, no direct effect of change in real exchange rate on workers' target wage share
- Firms' target profit/wage share is affected by real exchange rate even with a constant mark-up
- Profit squeeze distribution curve affected by real exchange rate, too
- Wage-led demand and employment curve is positively affected by real exchange rate (Marshall Lerner)

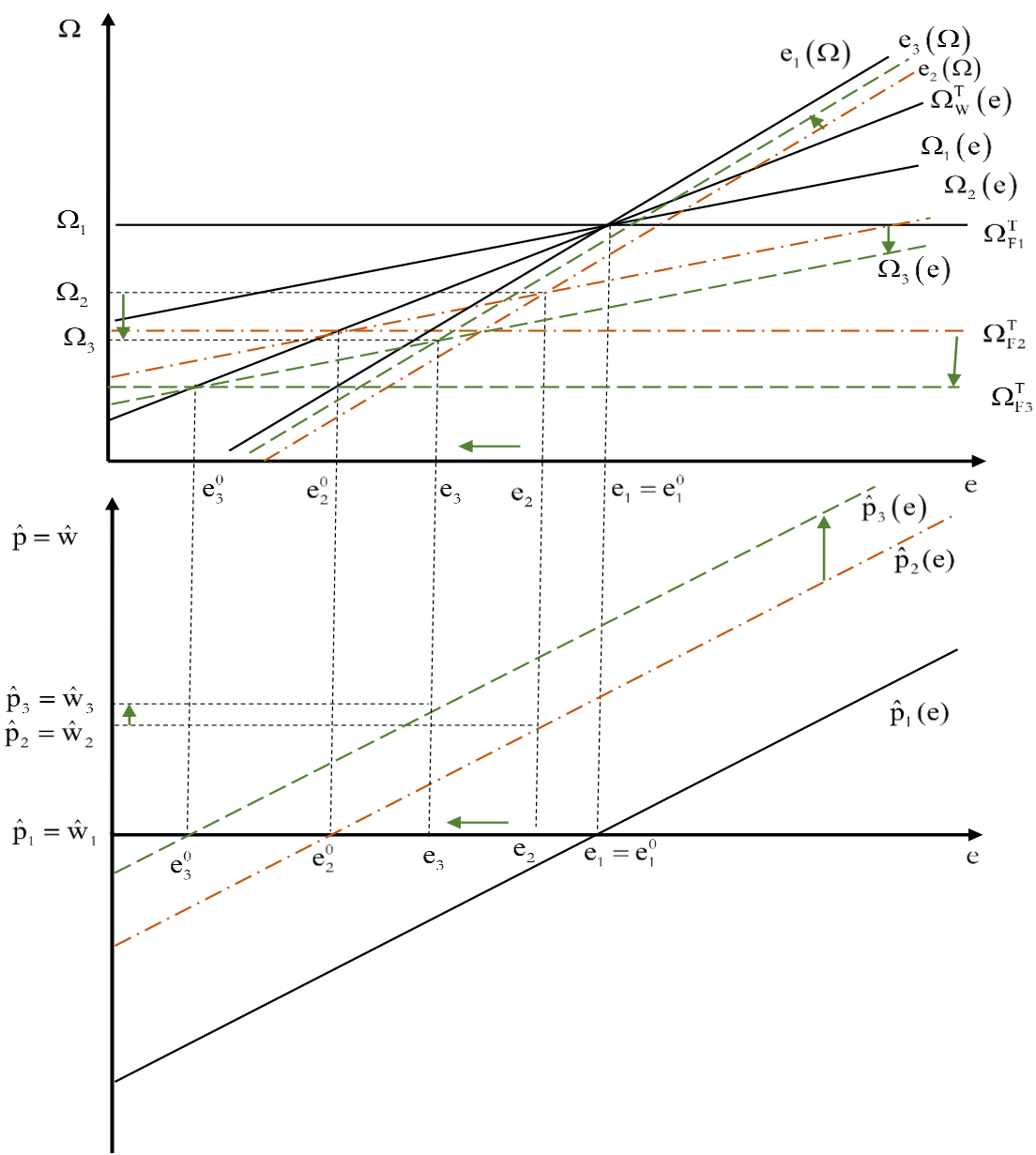
### Effects of an increase in imported energy prices and hence real exchange rate (orange)

- lower target wage share curve of firms
- lower profit squeeze distribution curve
- shifts of employment curve to the right (higher price competitiveness)
- Phillips curve shifts upwards

### New equilibrium (no. 2)

- lower wage share (with a constant mark-up)
- lower employment rate
- higher wage and price inflation

**Figure 8b: Firms take advantage of supply constraints and raise the mark-up in Dutt, Blecker/Setterfield, Lavoie framework**



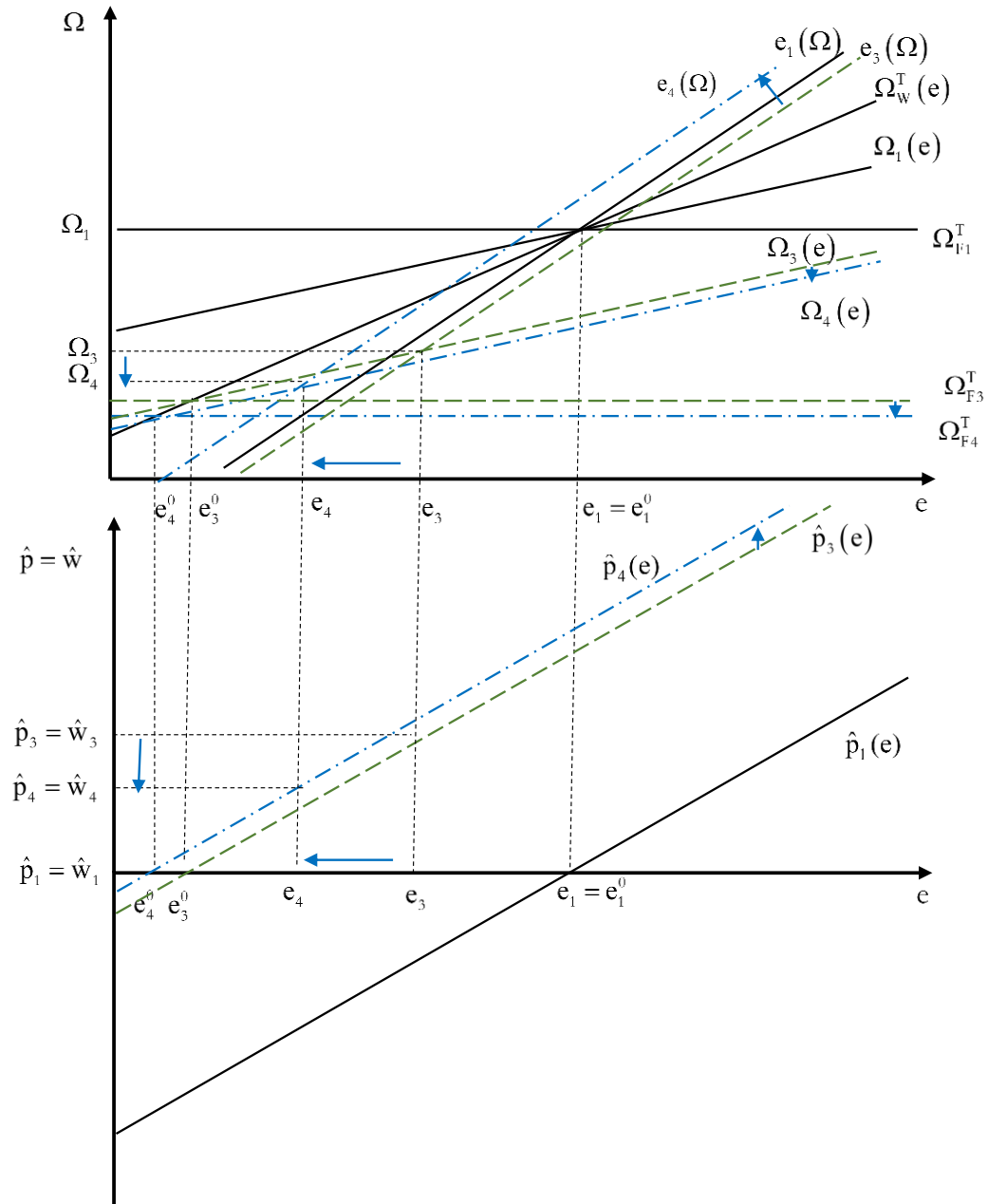
### Higher mark-up due to bottlenecks and supply constraints (green)

- firms' target wage share curve shifts down
- profit-squeeze distribution curve shifts down,
- wage-led demand employment curve shifts to the left (loss of international price competitiveness)
- upwards shift of the Phillips curve

### New equilibrium (no. 3)

- lower wage share,
- lower employment rate,
- higher wage and price inflation rate

**Figure 8c: An increase in the long-term real interest rate in Dutt, Blecker/Setterfield, Lavoie framework**



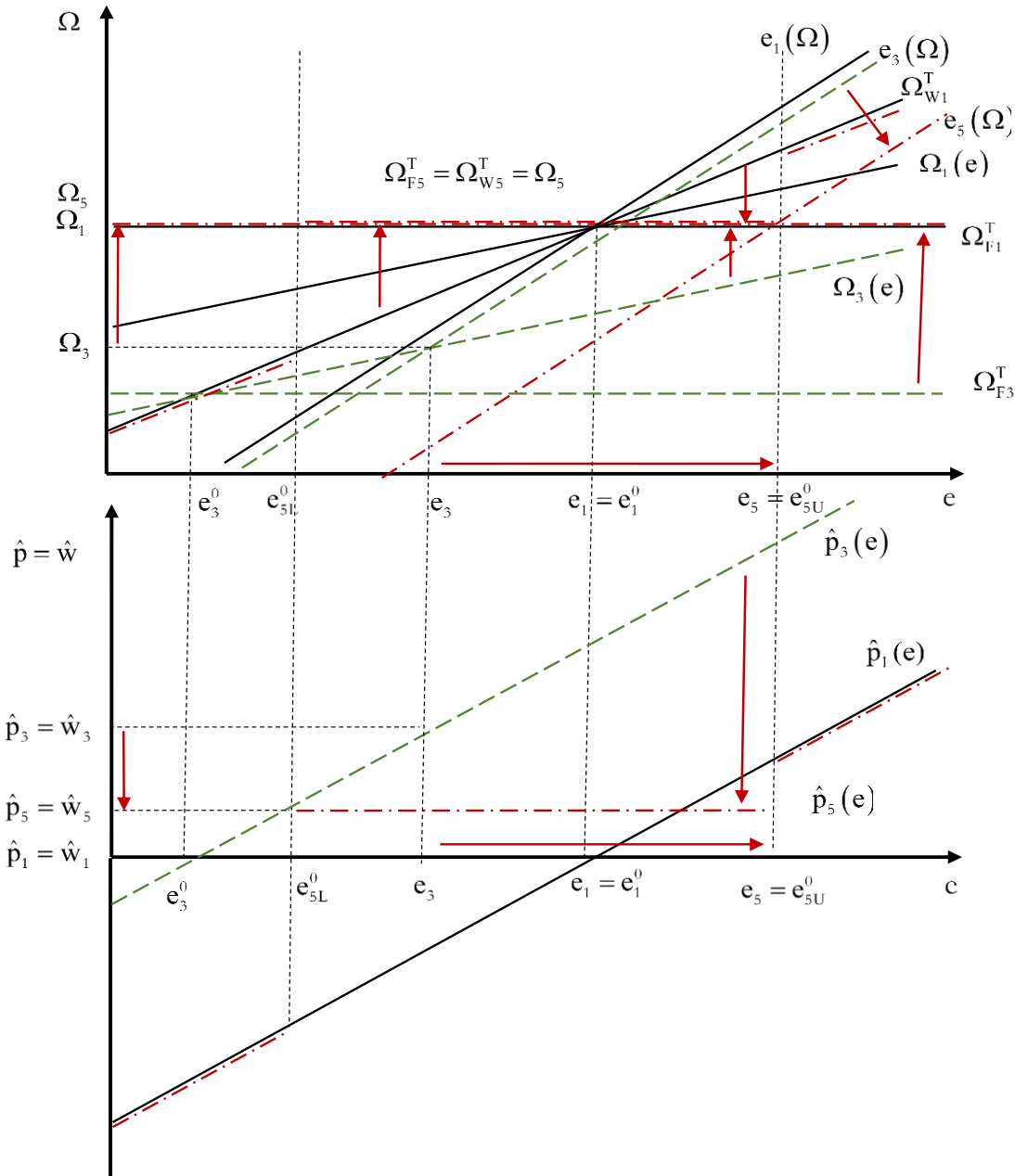
**Inflation targeting central bank policies drive up long-term real interest rates (blue)**

- Firms' target wage share shifts down (interest cost channel)
- Profit squeeze distribution curve shifts down
- Wage-led demand and employment curve shifts to the left, assuming normal case effects of real interest rate on aggregate demand
- Phillips curve shifts up

**New equilibrium (no. 4)**

- lower employment rate
- lower wage share
- lower inflation, but not necessarily down to initial rate
- Further interest rate hikes required

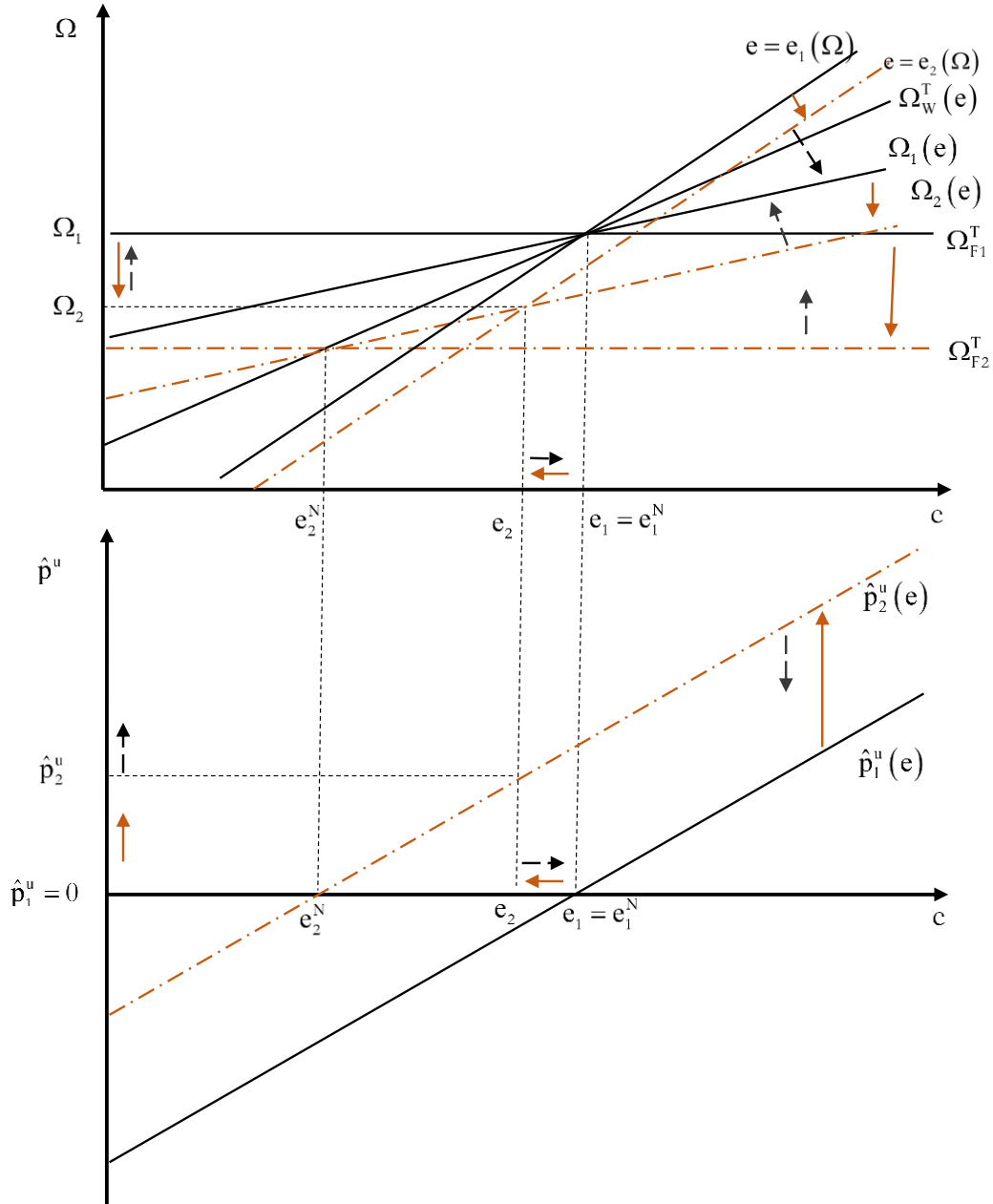
**Figure 8d: An alternative policy approach in the Dutt, Blecker/Setterfield, Lavoie framework**



**PK alternative policy approach (red, no. 5)**

- Induce firms' target wage share to return to initial equilibrium by lowering the aggregate mark-up according to the rise in ratio  $z$
- Central bank policies targeting low long-term real interest rate, taxing extra profits, price caps, competition policies, reducing bottlenecks via public investment
- Share the burden of a higher real exchange rate and stabilise domestic distribution: constant wage share with constant labour productivity and rising import prices means lower real wages – and lower real profits
- Align workers' target wage share with the feasible wage share given by firms' pricing, i.e. make Phillips curve horizontal in a relevant range
- Wage bargaining coordination requires strong trade unions and employer associations, government involvement (minimum wage policies, extension clauses, ...).
- Follow wage norm in the medium to long run: nominal wage rate should rise at target rate of inflation plus trend productivity growth for the economy as a whole
- Target rate of inflation should be in line with inflation rate of main trading partners, to contribute to constant nominal and real exchange rates → international coordination
- Fiscal policy demand management can shift wage-led demand and employment curve to maximum employment rate consistent with the target rate of inflation
- Tax and social policies should reduce inequality and support lower income households carrying the burden

**Figure 9a: An increase in imported energy prices in the Rowthorn, Hein/Stockhammer framework**



### Open economy

- Workers' distribution target does not change, firms' target profit/wage share is affected by (expected) real exchange rate
- Real exchange is affected by unexpected inflation
- With constant expected real exchange rate, unexpected price inflation will fall short of excess wage inflation, wage share moves towards workers' target
- Profit squeeze distribution curve
- Wage-led demand and employment curve & positive unexpected inflation/real debt effects and positive effects of real exchange rate on net exports

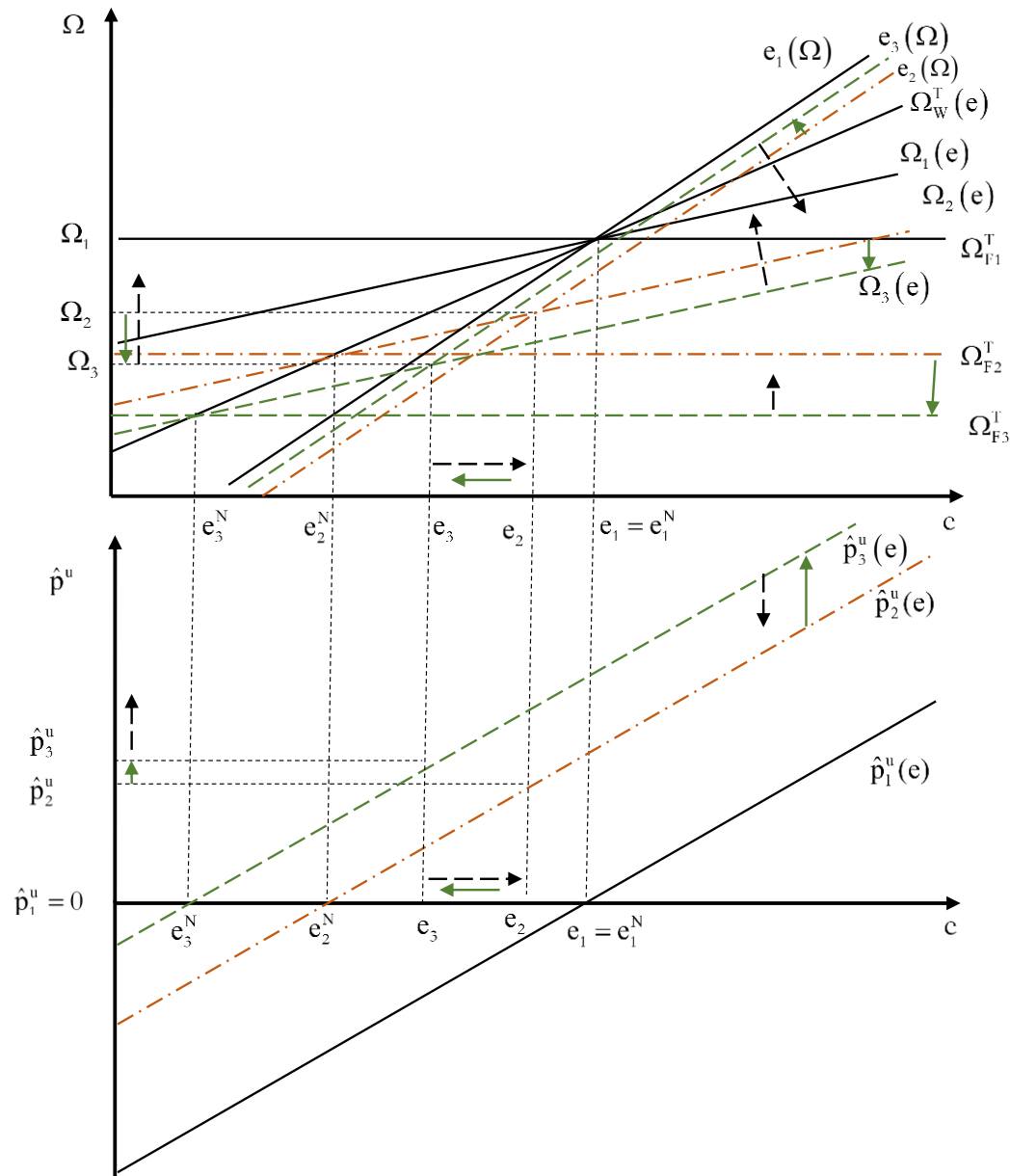
### Increase in imported energy prices and hence real exchange rate (orange)

- lower target wage share curve of firms
- lower profit squeeze distribution curve
- shift of wage-led demand and employment curve to the right (higher price competitiveness effects on net exports, lower real debt effect on investment)
- Unexpected inflation Phillips curve shifts upwards

### New unstable temporary 'equilibrium' (no. 2)

- lower wage share (with constant mark-up)
- lower employment rate
- lower SIRE ( $e^N$ )
- higher unexpected price inflation
- Instability because of rising wage share in wage-led economy, real debt effects of unexpected inflation (broken black arrows)
- Accelerating inflation lowers real exchange rate, raises firms' target wage share curve, dampens unexpected inflation, but shifts distribution curve up, ... (broken black arrows)

**Figure 9b: Firms take advantage of supply constraints and raise the mark-up in the Rowthorn, Hein/Stockhammer framework**



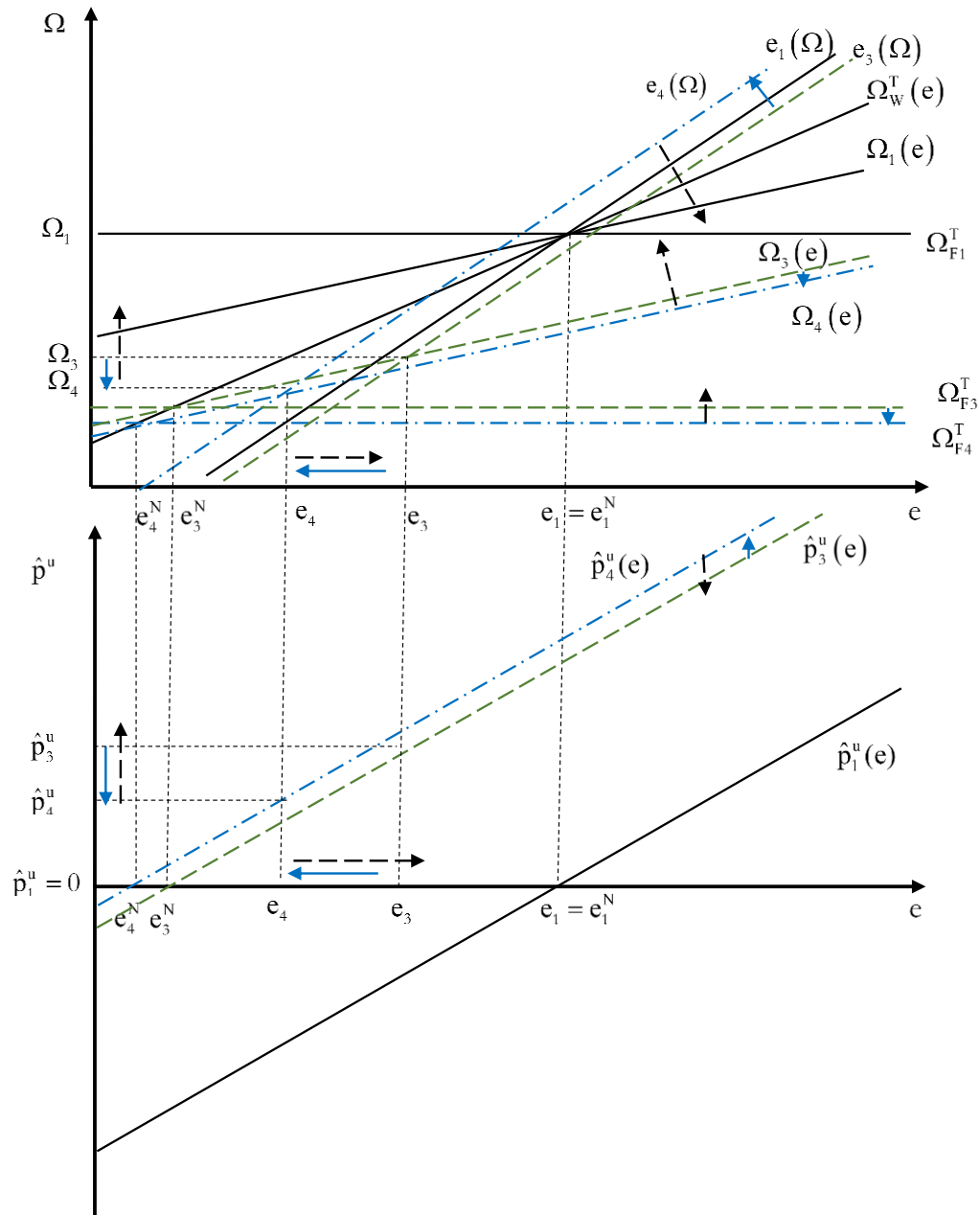
### Higher mark-up due to bottlenecks and supply constraints (green)

- Firms' target wage share curve shifts down
- Profit-squeeze distribution curve shifts down
- Wage-led demand employment curve shifts to the left (loss of international price competitiveness)
- Upwards shift of unexpected inflation Phillips curve

### New unstable temporary 'equilibrium' (no. 3)

- Lower wage share
- Lower employment rate
- Lower SIRE
- Higher unexpected inflation rate
- Instability because of rising wage share in wage-led economy, real debt effects of unexpected inflation (broken black arrows)
- Accelerating inflation lowers real exchange rate, raises firms' target wage share curve, dampens unexpected inflation, but shifts distribution curve up, ... (broken black arrows)

**Figure 9c: An increase in the long-term real interest rate in the Rowthorn, Hein/Stockhammer framework**



**Inflation targeting central bank policies drive up long-term real interest rates (blue)**

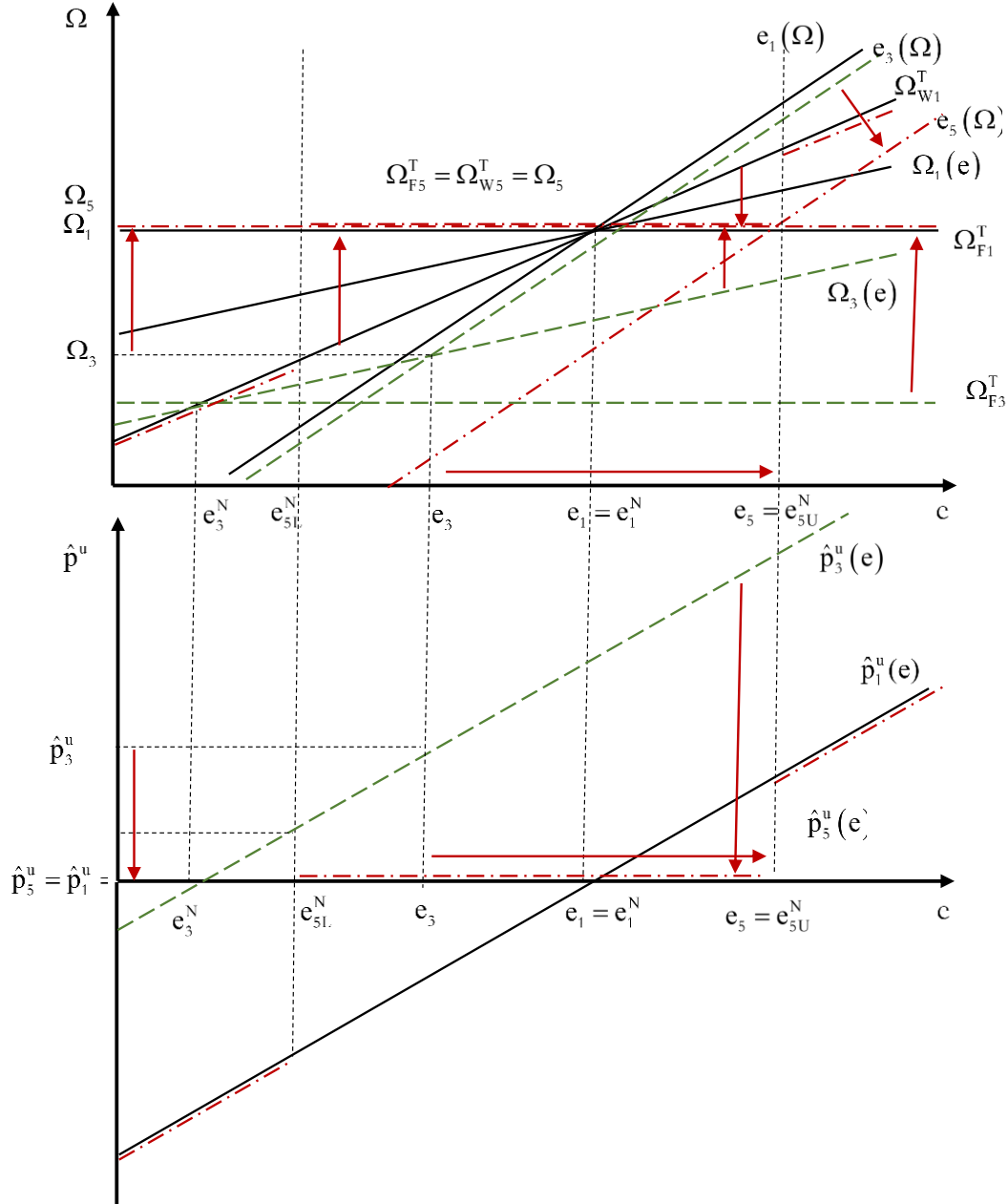
- Firms' target wage share shifts down (interest cost channel)
- Profit squeeze distribution curve shifts down
- Wage-led demand and employment curve shifts to the left, assuming normal case effects of real interest rate on aggregate demand:
- Phillips curve for unexpected inflation shifts up

**New unstable temporary 'equilibrium' (no. 4)**

- Lower wage share
- Lower employment rate
- Lower SIRE
- Lower unexpected inflation rate
- Instability because of rising wage share in wage-led economy, real debt effects of unexpected inflation, which also lowers real exchange rate, raises firms' target wage share curve, dampens unexpected inflation, but shifts distribution curve up, ... (broke black arrows)
- Further interest hikes required to stabilize inflation
- Central bank contributes to stagflation



**Figure 9d: An alternative policy approach in the Rowthorn, Hein/Stockhammer framework**



**PK alternative policy approach (red, no. 5)**

- Induce firms' target wage share to return to initial equilibrium by lowering the aggregate mark-up according to the rise in ratio  $z$
- Central bank policies targeting low long-term real interest rate, taxing extra profits, price caps, competition policies, reducing bottlenecks via public investment
- Share the burden of a higher real exchange rate and stabilise domestic distribution: constant wage share with constant labour productivity and rising import prices means lower real wages – and lower real profits
- Align workers' target wage share with the feasible wage share given by firms' pricing, i.e. make SIRE a corridor and Phillips curve horizontal in a relevant range
- Wage bargaining coordination prevents instability generated by unexpected inflation, redistribution in favour of debtors, and also stabilises functional distribution
- Wage bargaining coordination requires strong trade unions and employer associations, government involvement (minimum wage policies, extension clauses, ...).
- Follow wage norm in the medium to long run: nominal wage rate should rise at target rate of inflation plus trend productivity growth for the economy as a whole
- Target rate of inflation should be in line with inflation rate of main trading partners, to contribute to constant nominal and real exchange rates  
➔ international coordination
- Fiscal policy demand management can shift wage-led demand and employment curve to maximum employment rate consistent with constant inflation at the target rate,
- Tax and social policies should reduce inequality and support lower income households carrying the burden



## 6. Conclusions

- Broad PK agreement: the essence of inflation is distribution conflict (Braga/Serrano 2023) with different potential triggers
- ***Inflation is always and everywhere a conflict phenomenon!***
- distinction between demand-pull, profit-claims-push, wage-cost-push, tax-push, imported goods-push, currency devaluation-push, ... inflation can only relate to the trigger but not to the essence of inflation
- Broad PK agreement: passthrough of wage (dis-)inflation is incomplete (with few exceptions: Hein 2006, Lavoie 2006, Setterfield 2009, Herr 2014) and nominal wage bargaining has not only inflation but also distribution effects
- Broad PK agreement on required policy responses (I hope ...): moderate distribution conflict by incomes policies aligning wage share targets of workers and firms, complemented by low interest rate monetary policies, functional finance fiscal policy & re-distribution policies, international coordination

- Different views on the role of inflation expectations for wage inflation (adaptive expectations vs. no/incomplete ‘indexation’)
- Different views on stable price Phillips curve and on existence of an (***endogenous and unstable!!!***) inflation barrier (SIRE, NAIRU)
- Distinguish different inflation regimes (Rowthorn 1977, Bastian/Setterfield 2015, 2020, Charles et al. 2021)?
- Differences on the relevance and inclusion of real debt effects of unexpected inflation into the model
- Model presentations have relied on profit squeeze distribution curves and wage-led demand and employment regimes
- Frameworks are open for analysing wage squeeze distribution and profit-led demand and employment curves, too, and thus different combinations and regimes

- Modelling distribution conflict, (unexpected) inflation and real exchange rate needs to be refined
  - Exogenous real exchange rate?
  - Real exchange rate targeting by means of nominal exchange rate policies (Blecker 2011, Bastian/Setterfield 2020, Lavoie 2022, Chpt. 8)?
  - Exogenous nominal exchange rate, with exogenous foreign inflation (Hein 2023, Chpt. 5)?
- Limitations of aggregate models when it comes to analysing energy/commodity price shocks
  - Sectoral approaches and models: Kaldor (1976), Wildauer et al. (2023, but only for closed economy), ....
- **Finally:** Correlation of rising inflation and rising profit shares may be due to: rising ratio of material to wage costs and/or rising mark-ups – as shown – and/or also to changes in the sectoral composition, and/or to unit overhead labour /fixed cost digression in an economic expansion ...

**THANK YOU!**