The Cost of Living Crisis from a Post-Keynesian Perspective

11th PKES Summer School
23 June 2022

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Outline

Introduction

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- Inflation (re)emerges as a central economic issue
- Currently: high inflation rates plus wave of strike action to protect real wages
- UK Prime Minister and Bank of England Governor ask for wage restraint
- Unions say years of below inflation pay rises are enough
- What can a simple Post-Keynesian model teach us about the current situation?
  - Do nominal wage demands fuel inflation?
  - What is the role of firms and firms' profits?
  - What can/should the government do?

The model

The model

- We will introduce a static, closed economy Post-Keynesian short run model, similar to Setterfield (2006) or Lavoie (2014, ch. 5)
- Short run: capital stock is fixed
- What is Post-Keynesian about it?
  1. Principle of effective demand holds
  2. Paradox of thrift and paradox of cost hold
  3. The (functional) distribution of income matters

Aggregate Accounting Relationships

- The first two equations are simple aggregate accounting relationships (no behavioural assumptions)

$$Y = C + I \tag{PK I}$$

$$Y = W + \Pi \tag{PK II}$$

- where Y is real output, C is aggregate real consumption and I is aggregate real investment

- W is the real wage bill and Π is the real profit bill

Consumption Behaviour

- Our first behavioural assumption is to distinguish between workers and capitalists and their consumption behaviour
- Workers earn wages and consume all their income: $C_W = W$
- Capitalists earn profits and save part of their income: $C_\Pi = (1 - s)\Pi$
- Aggregate consumption is the sum of workers' and capitalists' consumption:

$$C = W + (1 - s)\Pi \qquad \text{(PK III)}$$

- Since only workers earn wage income we have:

$$W = wL \qquad \text{(PK IV)}$$

- w is the real wage rate and L is the number of employed workers.

Wages and employment

- The real wage (w) is defined as the nominal wage (w') relative to the price level (P):

$$w = \frac{w'}{P} \qquad \text{(PK V)}$$

- The number of workers employed is directly related to the level of output (Okun's Law):

$$L = aY \qquad \text{(PK VI)}$$

- where a is a technological production coefficient representing (inverse) labour productivity.

Wage and Price setting I

- Next we need to say something about how wages and prices are set in this economy
- We stick to mark up pricing which is standard in PK theory (and you can find as the standard pricing approach in accounting textbooks):

$$P = (1 + \theta)\frac{w'L}{Y} \qquad \text{(PK VII)}$$

- Firms set prices (P) as a multiple $(1 + \theta)$ of unit labor costs (i.e. wage costs per unit of output): $\frac{w'L}{Y}$
- As we will see because firms set prices, they can defend profits against higher nominal wages

Wage and Price setting II

- Finally we specify workers' nominal wage demands:

$$w' = w_A + \Omega_1 P + \Omega_2 Y \qquad \text{(PK VIII)}$$

- where w_A are autonomous wage demands and Ω_1 and Ω_2 indicate how strongly workers wage demands react to increases in prices and overall economic conditions.

- The $\Omega_2 Y$ term represents the idea that higher output levels imply low unemployment and thus high bargaining power of workers which manifests in higher wage demands.

The model: Summing up

$$Y = C + I \tag{PK I}$$

$$Y = W + \Pi \tag{PK II}$$

$$C = W + (1 - s)\Pi \tag{PK III}$$

$$W = wL \tag{PK IV}$$

$$w = \frac{w'}{P} \tag{PK V}$$

$$L = aY \tag{PK VI}$$

$$P = (1 + \theta)\frac{w'L}{Y} \tag{PK VII}$$

$$w' = w_A + \Omega_1 P + \Omega_2 Y \tag{PK VIII}$$

8 endogenous variables ($Y, L, W, \Pi, C, w, w', P$) and
7 exogenous parameters and variables ($s, a, I, \theta, w_A, \Omega_1, \Omega_2$).

Solving the model

Solving the goods market I

- Combining PK I to PK VI yields $Y = I/s + \frac{w'}{P}\frac{Y}{v}$ and adding equation PK VII yields equilibrium output

$$Y^* = \frac{I}{s}\frac{1+\theta}{\theta} \tag{1}$$

- We have the first set of major result
  - Note that we have not used PK VIII yet ($w' = w_A + \Omega_1 P + \Omega_2 Y$). So we don't need to specify nominal wage demand to obtain equilibrium output. Output determination is independent of nominal wage determination!
  - Equilibrium output is determined by: investment spending (I), capitalists' savings rate (s) and the market power of firms given by the mark up (θ)
  - An increase in the savings rate reduces equilibrium output (paradox of thrift)
  - An increase in the mark up reduces output: $\frac{\partial Y^*}{\partial \theta} = -\frac{1}{\theta^2}\frac{I}{s}$ (translates into paradox of cost)

- Some additional useful results:
- Equilibrium profits: $\Pi^* = \frac{I}{s}$
  (Robinson's "workers spend what they get and capitalists get what they spend")
- Profit share: $\frac{\Pi}{Y} = \frac{\theta}{1+\theta}$
- Real wage rate: $w^* = \frac{1}{a(1+\theta)}$

Equilibrium prices

- Combining PK VI to PK VIII yields:

$$P^* = \frac{(1+\theta)(w_A + \Omega_2 Y^*)}{\frac{1}{a} - (1+\theta)\Omega_1} \tag{2}$$

- which provides the second set of major results:
  - The price level depends on firms' market power (θ), workers nominal wage demands (w_A, Ω_1, Ω_2), labour productivity (a) and equilibrium output.
  - The attempt of workers to gain a higher income share by demanding higher wages (w_A) is inflationary.
  - So is the attempt of firms to increase their income share by increasing the markup (θ)
  - $\rightarrow$ inflation is the result of unresolved conflicts over income distribution; conflict inflation literature: Sawyer (1982), Taylor (1985; 1991), Sarantis (1990-91), Smithin (1994, ch. 9), Cassetti (2003), Setterfield (2007; 2009), and Godley and Lavoie (2007)
  - In addition: level of technology (productivity)

The Cost of Living Crisis

Using the model for the Cost of Living Crisis

- We want to evaluate three claims:
  - Nominal wages are inflationary
  - Inflation is driven by raw materials (oil)
  - Inflation is driven by firms hiking prices (and making higher profits)
- Let's use our model

The role of nominal wages

- An increase in autonomous nominal wage demands (w_A) will lead to a higher equilibrium price level while leaving equilibrium output unchanged $P^* = \frac{(1+\theta)(w_A+\Omega_2 Y^*)}{\frac{1}{a}-(1+\theta)\Omega_1}$
- Workers cannot increase their real wage by **only** increasing their nominal wage
- We assume firms are fully able to pass on higher wage costs into prices
- Good approximation to reality. Increasing real wages requires a reduction of mark ups (profit margins)

The role of raw material prices (oil)

- Proper analysis would require two sector (two country) model
- We will assume oil is produced domestically (UK, US) but prices determined in global market
- Then an increase in oil price represents an incrase in the mark up (θ): Higher mark up for BP means average mark up increases
- An oil price shock (in the form of increase in θ):
  - Increases prices and reduces equilibrium output ("stagflation")
  - Reduces real wages and the wage share
  - $\rightarrow$ conflict over who bears the cost of this negative supply shock

Firms hiking prices

- A high inflation environment allows firms to increase prices (because everybody expects prices to rise) and the media is full of inflation hysteria
- In our model this would mean in addition to the initial increase in θ due to higher oil prices we have a further increase in the mark up.
- The effect is an amplification of the initial oil price shock:
  - Lower real wages and a lower wage share
  - A decline in equilibrium output (fighting over a shrinking pie)

Conclusion

What have we learned?

- Higher raw material prices reduce real wages and trigger a distributional conflict over who bears the cost and whose living standards fall
- In order to defend their real wage workers need to succeed in reducing firms' profit margins (mark ups). High nominal wage demands have the potential to further contribute to inflation
- A high inflation environment might allow (other) firms to raise their markup, leading to a second round of price increases and real wage declines.

What can governments (and unions) do?

- Urging workers to keep nominal wage demands low is equivalent to uring them to accept a fall in living standards (poverty for some)
- In the short term income support (transfers) can cushion the blow
- In the medium term governments need to put pressure on businesses to reduce markups (share burden) and prevent second round mark up increases:
  - Tax (excess) profits
  - Support workers' bargaining power and ability to reduce mark ups: scrap anti union legislation, increase minimum wages, restrict agency work, strengthen employment protection laws, enforce labour laws, enforce regulation and competition laws, effective anti-trust policies

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