Economics 2B
Suggested Solutions - Tutorial 4

Max Schroder

February 7, 2020

Abstract

This guide is supposed to be complementary to the official solutions supplied by the lecturer. All errors are my own.

Question 1

a)

This model is mainly about the medium run, so we believe that expectations have to be consistent with what is really happening: $P^e = P$.

Firms set prices as a markup over wages: $P = (1+m)W$ so with $m = 0.05$ we have

$$\frac{W}{P} = \frac{1}{1+m} = \frac{1}{1.05} = 0.95$$

Note that the real wage effectively measures what fraction of the value of their production workers are paid.[1]

b)

Rewrite the wage-setting equation:

$$W = P(1-u)$$
$$\frac{W}{P} = (1-u)$$

then equate wage setting and price setting equations:

$$\begin{aligned} \frac{1}{1+m} &= (1-u) \\ u &= \left(1 - \frac{1}{1+m}\right) \end{aligned}$$

hence:

$$u = \left(1 - \frac{1}{1.05}\right) = 0.0476$$

[1] Sounds a lot like Marxism to me...

c)

Similarly

$$u = \left(1 - \frac{1}{1.1}\right) = 0.091$$

Note what this question is telling you: The real wage is solely determined by the capitalis...errr monopolists profit considerations and the unemployment rate follows these considerations, **in the medium run.** In the short run, things might look different, as we will see soon.

Question 2

b)

Rather than talk about the specific labour market conditions, I want to talk a little about the wage setting equation in it's general form: $W = P^e F(u, z)$

Here $F(u, z)$ represents the *bargaining power* of workers vis-a-vis their employers.[2] Effectively, it summarizes how much workers can demand from their employers. In our formulation F has two arguments, u and z. Unemployment is singled out from all other factors, because we think that the level of unemployment has a huge impact on the ability of workers to bargain for higher wages, and because it is the equilibrium object that we are trying to study. Now z is a catch-all term that collects all the other factors (societal, institutional and cultural) that also affect bargaining power. Essentially, z represents a ceteris paribus condition: "we might not know exactly what z is, but as long as z doesn't change fundamentally, F is a decreasing function in u."

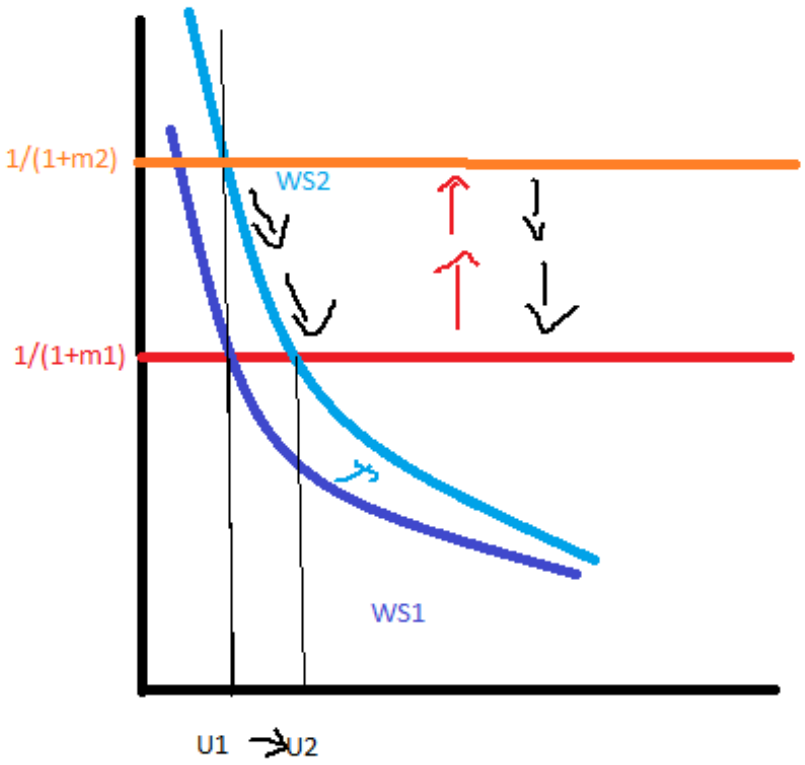
c)

I think the answer to this question is very confusing, so here is my take on it: Suppose that the wage setting curve shifts outward, due to some institutional change. Now in the short run, prices are "sticky", i.e. firms cannot change them immediately, so they face two options: 1. Fire enough workers so that workers bargaining power drops back down to what it was before. 2. Bite the bullet and actually increase real wages by reducing the markup. In most countries there are big hurdles to firing employees, so at least in the short run, option 2 will have some effect. Over time, as firms can adjust prices and start laying off workers, we will see a slow return to the old markup and a now higher level of unemployment.

I have illustrated this with the following diagram:

Initially Wage Setting curve moves up (blue arrow). In the short run, prices and employment are fixed, so markup reduces and real wage increases (red

[2] Btw. bargaining is a huge field in game theory.


1/(1+m2)
WS2
1/(1+m1)
WS1
U1
U2

arrows). Over time, we return back to the old markup and experience falling real wages and rising unemployment (black arrows).

Question 3

a)

You can answer this question by considering the slope of the slope of the WS curve. As you can see thes slope gets very steep at low levels of unemployment, suggesting that the value of workers rises dramatically at these levels of scarcity.

b)

Again a graphical interpretation is uesfull here. Think about the lowest markup that firms are willing to accept. Clearly, that minimum level of profit is $m = 0$. Now this depends on the shape of $F(u, z)$, but it is unlikely that it will meet the price setting curve exactly at $u = 0$.[3] This means that there is always going to be some unemployment, in the long run.

[3] Curiously, if F has the form it has in Question 1, then it does.

Figure 1: Illustrator: Tony Biddle