

Economics 222
Exercise B
due Friday 14 October

1. A commentator writes: “Everyone should be in favour of a poll tax, for it would increase labour supply by lowering marginal tax rates.” Briefly comment on this opinion.

2. Prove that

$$1 - u = \frac{er}{pr}$$

where er is the employment ratio and pr is the participation rate.

3. According to the labour force survey, in June 2005 there were 17.329 million people in the labour force. The participation rate was 67.2% while the unemployment rate was 6.7%.

(a) What was the employment ratio?

(b) How many people were unemployed?

(c) How many people were not in the labour force?

4. In answering this question, you will collect your own evidence on trends in wage inequality in Canada. From Cansim II, collect two series: (a) average weekly earnings in retail trade (V1597116) and (b) average weekly earnings in professional, scientific, and technical services (V1597126). Both series are at monthly frequency from 1991 to 2005. Use a spreadsheet to find the ratio of the second series to the first series, which will be an indicator of the gap between skilled and unskilled earnings, roughly speaking.

(a) Graph the ratio series against time. (Follow the guidelines on the 222 web pages for designing a legible graph.)

(b) Comment briefly on whether there is evidence here of a trend to increasing wage inequality.

(c) Use labour supply-demand diagrams to briefly outline the two main explanations for a trend to wage inequality.

(d) Can you think of further information you might collect that would shed light on the underlying causes of such a trend?

5. This question studies the present-value budgeting introduced in appendix 4A. Suppose that life is divided into two blocks of time, for simplicity. The lifetime budget constraint is:

$$c + \frac{c^f}{1+r} = y - t + \frac{y^f - t^f}{1+r}.$$

Each person tries to smooth consumption over time, so that $c = c^f$. The real interest rate is 4 percent.

- (a) Suppose that $y = y^f = 100$ and $t = t_f = 30$. Find optimal consumption and savings.
- (b) Suppose that a conservative government decides to reduce government spending, and so also reduces taxes to $t = 20$, with no change in future taxes. What happens to consumption, private saving, and national saving?
- (c) Suppose instead that the government decides to cut current taxes to $t = 20$ with no change in spending. The government goes into debt to finance the tax cut, but they plan to retire the debt in the next period by raising t^f . What will the new value of t^f be?
- (d) What are the predicted effects of the tax cut on consumption, private saving, and national saving?
- (e) Would your predictions about the tax deferral change if the tax collection were deferred beyond the lifespan of current taxpayers?

6. A firm faces this production function relating capital to output:

$$Y = 2K^{0.5}.$$

The depreciation rate of capital is 10 percent, the real interest rate is 2 percent, and the price of capital is 1.

- (a) Find the firm's target capital stock K^* .
- (b) If the firm's current capital stock is $K_t = 55$ then what should be its investment plan?
- (c) How would its plan change if instead r were 3 percent?

7. If the US reduces federal government spending to try to balance its budget, what will be the effect on the real interest rate? To begin to answer this question, imagine that the US is a closed economy, with

$$I = 90 - 30r,$$

and

$$S = 20 + 10r - G.$$

Then find a formula for the real interest rate as a function of the level of government spending.