

Final Exam. Econ520. Spring 2016

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Instructions:

- Answer all questions.
- Clearly number your answers. Write legibly.
- Do *not* write your answers on the question sheets.
- *Explain* your answers – do not just state them.
- *Show* your derivations – do not just state the final result.
- Do not refer to any notes or books. You may use a calculator.
- The total time is **90** minutes.
- The total number of points is 100.

1 Short Questions

- [10 points] Consider two assets. A pays a dividend that is positively correlated with GDP. B pays a dividend that is negatively correlated with GDP. Which asset do you expect to pay a higher expected return? *Explain* the economic intuition.
- [15 points] The Phillips Curve asserts that changes in inflation and unemployment are negatively related.
 - Explain the economic mechanism underlying this link.
 - In light of the Phillips Curve, what are the implications of permanently changing the growth rate of the money supply? Would this permanently increase output? Explain.
- [10 points] “We could achieve balanced trade by imposing the Scaled Tariff upon those countries with which we have sizeable trade deficits ... This would be a single-country-variable tariff that rises as our trade deficit increases, falls as our trade deficit goes down, and disappears when trade becomes balanced.” (“Can We Trump the Record U.S. Trade Deficit with China?” American Thinker, September 30, 2015)
Do you agree? Explain.

Be sure to explain your answers.

2 Open Economy AS/AD Model

Recall the equations for the open economy AS/AD model with fixed exchange rates:

- IS: $Y = C(Y - T) + I(Y, i) + G + NX(Y, Y^*, \bar{E}P/P^*)$
- LM: $M/P = YL(i)$.
- AS: $Y = F(\frac{P}{P^e} \frac{1}{1+m}, z)$ with $P^e = P$ in the medium run.
- UIP: $i = i^*$

Consider an economy starts in the medium-run equilibrium where $P = P^e$. Consider the effects of a foreign contraction ($Y^* \downarrow$).

- [20 points] Explain what happens in the short run.
- [15 points] Explain what happens in the medium run.

Illustrate your answers in a diagram (P against Y). Explain what happens to C, I, NX, M for each case. Also explain the economic mechanism (the “story”) underlying these results.

3 Consumption

Consider the two period household problem illustrated in Figure 1. Young income is $y - t$. Old income is $y' - t'$. The straight line is the lifetime budget constraint:

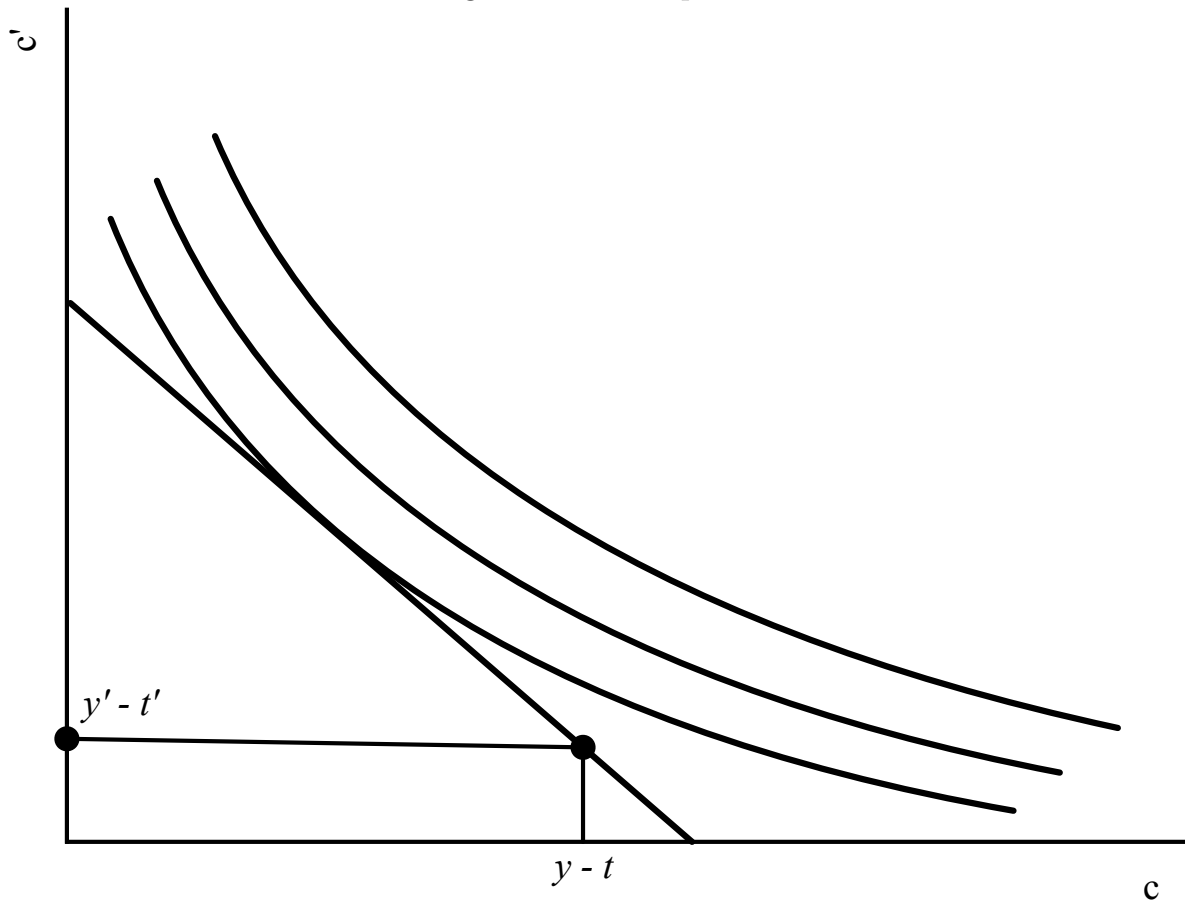
$$y - t - c + \frac{y' - t' - c'}{1 + r} = 0 \quad (1)$$

The curved lines are, of course, indifference curves.

Questions: [30 points]

1. Consider a *transitory* income shock that increases only today's income, $y - t$. Illustrate its effect on consumption and saving.
2. Now consider a *permanent* income shock that also affects $y' - t'$. Illustrate its effects in the same graph. It helps to use the indifference curves already drawn.
3. Explain how the marginal propensity to consume and save out of current income differs between the two cases. Provide economic intuition.
4. What does your analysis imply for the effectiveness of temporary tax cuts as a tool for stimulating aggregate demand.
5. In a similar graph, illustrate how two households that differ in their current and future incomes ($y - t$ and $y' - t'$) end up with the same consumption (because they receive the same lifetime income).

Figure 1: Consumption



End of exam.

4 Answers

4.1 Short Questions

1. Phillips Curve:
 - (a) From the discussion of the AS/AD model we know that unanticipated price changes have real effects. In the Phillips Curve, the change in inflation proxies for deviations from expected inflation. If inflation is higher than expected, the aggregate supply of goods increases. In our model, the specific mechanism is that workers set labor supply based on W/P^e . When P is higher than expected, workers work more hours. The more general mechanism is that some prices are sticky and set based on price expectations.
 - (b) Permanently increasing money growth would not increase output. Once inflation expectations catch up, any inflation rate is consistent with full employment.
2. Trade deficit: The assertion is that we could achieve balanced trade by imposing tariffs. The response has two parts.
 - (a) Yes, we can achieve balanced trade with any particular country by imposing a tariff on that country's goods.
 - (b) No, we cannot reduce our overall trade deficit this way. Recall that $I = S^p + S^G - NX$ (S^p is private saving, S^G is government saving). Tariffs have no clear effects on either investment or saving.

4.2 AS/AD Model

4.3 Answer: Open Economy AS/AD Model

The diagram is that for a negative demand shock.

1. SR: AD shifts left. Y, P falls (see diagram). Therefore, C, I fall. From the math, the effect on NX is actually ambiguous, but the economics tells us that NX must have fallen (this is the source of the shock). $M/P = YL(i)$ must have fallen, too.
Mechanism: It starts with the decline in NX as foreigners buy less from us. That reduces AD. The price setting mechanism embedded in AS implies that P falls (lower employment implies lower wage demands, which firms pass on as lower prices). The interest rate wants to fall, but that is prevented by foreigners dumping our currency. The Fed responds by buying dollars, so that M falls.
2. MR: AS shifts towards Y_n . Thus, $Y = Y_n$ again. P falls some more. M/P must be the same as at the start (from LM). C and I are also the same as at the start. Therefore, in the MR, all we have is a decline in prices.

Mechanism: Price expectations decline, shifting AS down. Workers demand lower wages, so prices can fall. That effectively undoes the shock (NX improves via the real exchange rate). Once the RER has declined enough, NX returns to its original value and the shocks has been undone.

End of answers.