Introduction to Macroeconomics · M5 · 2015-16
Problem set 6

1. Policy in the AS-AD model. Consider Exercise 14 from Problem Set 5. (i) Identify in each case the kind of monetary policy (expansionary or contractionary) that may offset the change in the inflation rate caused by the event described in the case. (ii) Identify in each case the kind of fiscal policy (expansionary or contractionary) that may offset the change in real GDP caused by the event described in the case.

2. Policy in the AS-AD model. Let E be an economy and E′ the economy given by the rest of the world.

(i) Analyse graphically by means of the AS-AD model the effect on the macroeconomic equilibrium of both E and E′ of the return to E′ of all the unemployment immigrants currently in E.

(ii) Considering E, explain if it is possible to offset, by means of the fiscal policy, the effect on real GDP found in (i). If so, list two fiscal policy measures that could achieve this goal.

(iii) If the fiscal policy in (ii) is expansionary, suppose it is financed by the issuance of government bonds. Explain if this issuance could have some effect on the equilibrium real GDP.

3. Policy in the AS-AD model. (i) Analyse graphically by means of the AS-AD model the effect on the macroeconomic equilibrium of the closure of all the factories owned by foreigners. (ii) Which type of economic policy could offset the effect on the equilibrium inflation rate of the closure? Analyse the effects of this policy on the AS-AD model.

4. Fiscal and monetary policy. (i) Find two differences between an expansionary monetary policy and an expansionary fiscal policy. (ii) Find two characteristics they have in common.

5. Goodhart's law. Consider Example 7.2 from the lecture notes. Explain why attendance is no longer a good measure of the students' performance when the teacher announces that attendance determines the final mark.

6. Goodhart's law. Exams are indicators of knowledge: the more one knows on a subject, the higher the mark one is expected to obtain in an (unannounced) exam on the subject. Goodhart's law predicts that, once it is publicly known that exams become the instrument to test one's knowledge, exams may turn out to be a less reliable indicator of knowledge. Explain why. [Hint: Ask yourself whether you study Macroeconomics to master the subject or to pass exams.]

7. Goodhart's law. Explain if Goodhart's law has a bearing on the following situation. The Catalonian law 18/2007, on the right to housing, "dota les administracions actuants d'instruments per a aconseguir que els habitatges desocupats injustificadament, en àmbits d'acreditada necessitat d'habitatges, s'incorporin al mercat immobiliari per mitjà de tècniques de foment, però també de tècniques d'intervenció administrativa". Article 41 refers to "Detecció d'utilitzacions i situacions anòmales dels habitatges" and declares permanent vacancy an anomalous situation. Point 5 in the article asserts that, to verify the existence of an anomalous situation, the competent civil service may request information concerning "abnormal water, town gas, or electricity consumption".

8. Policy effectiveness. A teacher makes the following proposal to a student that, though being near a borderline pass, has not passed Macroeconomics: "You will pass the course if you devote a couple of days in holidays to looking over your lecture notes". In connection with the factors determining the effectiveness of economic policies, does this situation illustrate the concept of lag, the concept of temporal inconsistency, or Goodhart's law?

9. Simultaneous policies. Suggest a justification for simultaneously implementing: (i) an expansionary fiscal policy and a contractionary monetary policy; (ii) a contractionary fiscal policy and an expansionary monetary policy. (iii) Is there any difference between applying only an expansionary fiscal policy and applying both an expansionary fiscal policy and an expansionary monetary policy?

10. Monetary policy. Does Fig. 1 suggest that, in the period 1970-2000, monetary policy has been more expansionary in the US than in Bolivia? Explain your answer.

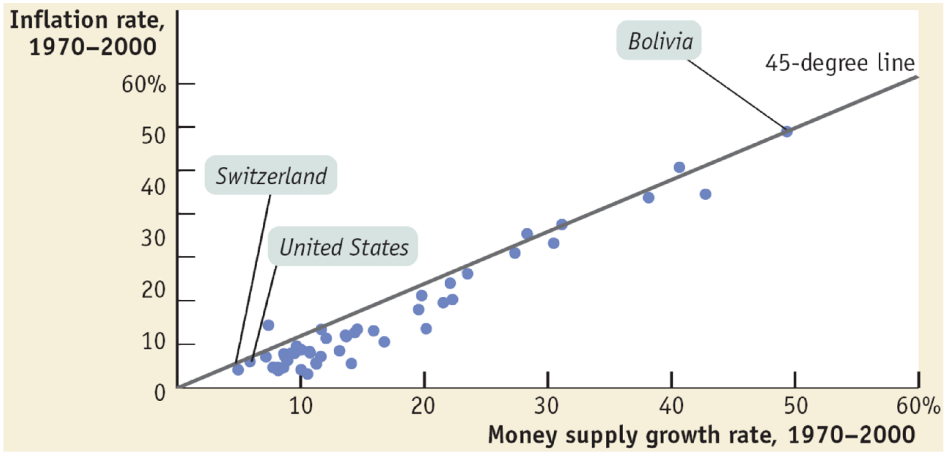

Fig. 1. Inflation rate and money growth rate

http://www.worthpublishers.com/krugmanwellsnew/main.htm

11. Monetarism. Is Fig. 2 providing evidence for the monetarist view?

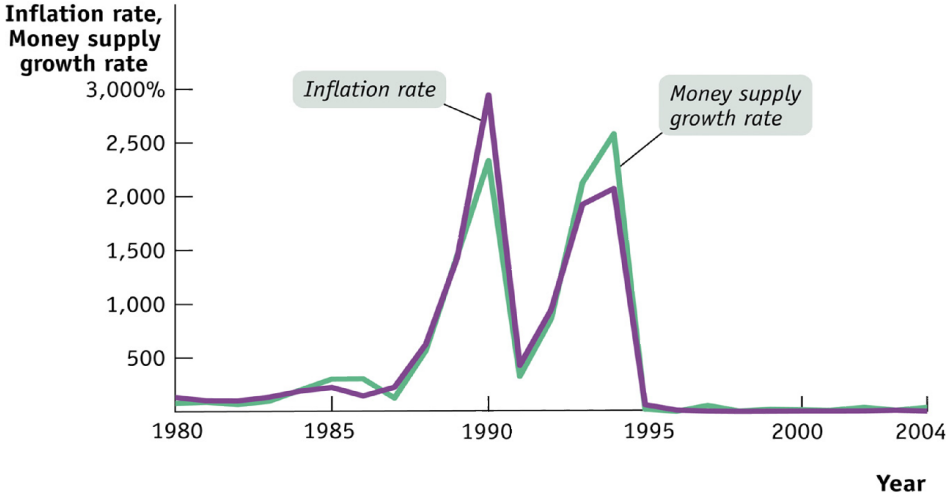

Fig. 2. Inflation rate and money supply growth rate in the US

http://www.worthpublishers.com/krugmanwellsnew/main.htm

12. Monetary policy. Consider Fig. 3. (i) During which periods monetary policy can be considered expansionary? Why? (ii) During which periods monetary policy can be considered contractionary? Why?

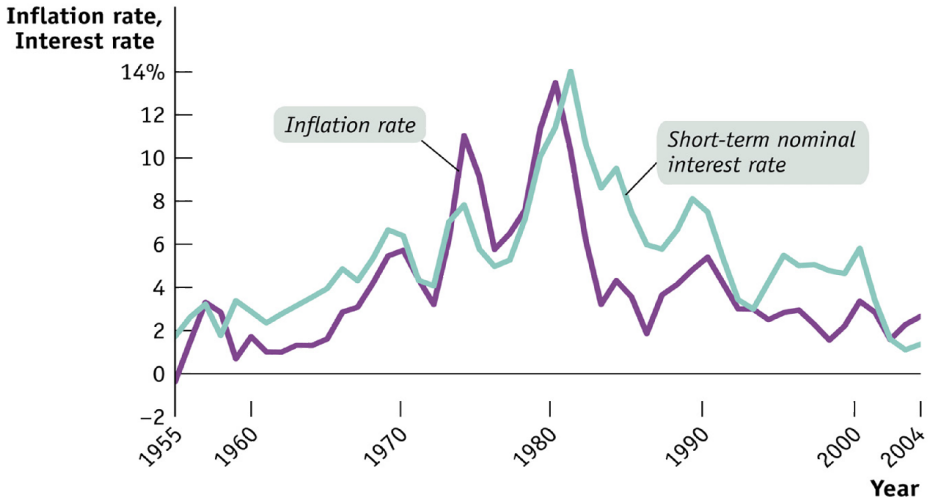

Fig. 3. Inflation rate and nominal interest rate

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13. Goodhart's law. Taking for granted that students report their opinions honestly, each academic year the university invites students to fill in a questionnaire to assess the teachers' performance. Before the 2010-11 academic year teachers were informed of the students' assessment after the end of the academic year. Since the 2010-11 academic year the questionnaire must be filled in at the moodle website and the teacher can know the students' opinions even before he or she marks the students. (i) Why is Goodhart's law relevant to this situation? In particular, do students have an incentive to report truthfully their opinions under the new evaluation policy? (ii) Would you recommend going back to the traditional evaluation policy? If so, why? If not, why not?

14. Simultaneous policies. What combination of monetary policy and fiscal policy leads, simultaneously, to a fall in the inflation rate and an increase in production?

15. Expansionary monetary policy. Explain four ways by means of which a central bank can increase the liquidity of an economy.

16. Stopping deflation. (i) What kind of fiscal policy can put deflation to an end? (ii) And what kind of monetary policy?

17. Simultaneous policies. Find the effect on the macroeconomic equilibrium of implementing, at the same time: (i) an expansionary fiscal policy and a contractionary fiscal policy; (ii) an expansionary fiscal policy and a contractionary monetary policy; (iii) a contractionary fiscal policy and a contractionary monetary policy; (iv) an expansionary monetary policy and a supply-side policy; and (v) a supply-side policy and a contractionary fiscal policy.

18. Taylor's rule. Using the simple version of Taylor's rule, explain if having the inflation rate above the target inflation rate leads the central bank to (by modifying the nominal interest rate) set the real interest rate above, below, or at the same level as the economy's long-term real interest rate.

19. Policy externalities. Policymakers in the US want the US economy to boom. Explain if the fact that the eurozone is already booming contributes positively or negatively to achieve that goal.

20. Fiscal policy. (i) What side effects are associated with an expansionary fiscal policy consisting of a rise in the government expenditure that is financed by a rise in taxes? (ii) What if the additional government expenditure is financed by issuance of government bonds?

21. AS-AD model. In order to curtail its debt, the government decides to increase the income tax and, simultaneously, to cut public spending. At the same time, the government decrees a labour reform that solely amounts to a fall of all wages by 10%. (i) Using the AS-AD model, explain the foreseeable effect of all those measures on the inflation rate, real GDP, and the unemployment rate. (ii) Indicate a monetary policy measure that could revert the inflation rate to its original value.

22. Monetary policy. (ii) Analyse the effect on the interest rate of an increase in reserve requirements combined with an open market operations in which the central bank sells financial assets. (iii) Answer the same question if the central bank carried out a purchase of financial assets instead of a sale.

23. Taylor's rule. Consider the simple version of Taylor's rule in which $A = 1/2$, $\bar{r} = 4$ (the long-run equilibrium real interest rate), and $\bar{\pi} = 3$ (the central bank's target inflation rate). (i) Explain the meaning of $A = 1/2$ by means of an example. (ii) Find the nominal interest rate i set by the central in each of the case shown in the table below. (iii) Indicate the cases in which the real interest rate is above $\bar{r}$ and explain why it is above. (iv) In each period, how does the decision on the interest rate by the central bank affect aggregate demand, real GDP, and the unemployment rate?

period	π	$\bar{r}$	$\pi - \bar{\pi}$	i	$r = i - \pi$
1	9%				
2	7%				
3	1%				
4	−1%				
5	3%				
6	5%				
7	0%				

24. Definitions. (a) Explain the following relationships: (i) Okun's law; (ii) Phillips curve; (iii) Laffer curve; (iv) Taylor's rule. (b) Explain the following concepts: (i) Ricardian equivalence; (ii) crowding-out effect; (iii) monetary policy transmission channels; (iv) quantity equation; (v) neutrality of money. (c) Is there any difference between government debt monetization and issuance of government bonds? (d) What have the following concepts in common and what differentiates each one from the rest: government debt, government deficit, government primary deficit? (e) What is a monetary policy transmission channel? (f) Is there any relationship between the Tinbergen precept and Mundell's principle of effective market classification?

25. Financing deficits. The government wonders whether to finance an unexpected public deficit by increasing taxes or by issuing T-bills. (a) Using the liquidity market model, show graphically the effect of each option on the interest rate. (b) For each option, explain the kind of monetary policy that the central bank should carry out to neutralize the effect on the interest rate established in (a).

26. Taylor's rule. A central bank follows the Taylor's rule $i = \pi + \bar{r} + (\pi - \bar{\pi})/2$, where $\bar{\pi}$ is the bank's inflation target and $\bar{r}$ is the real interest rate to which the economy converges in the long run. Calculate by how much the actual real interest rate differs from $\bar{r}$ if $\pi = 2 \cdot \bar{\pi}$.

27. Macroeconomic policy. The government knows that, whenever a domestic big bank is in trouble, it will come to the rescue and bail out the bank. Despite this, the government has announced that under no circumstance banks will be rescued. Now, a very big bank is in trouble and the government decides that it will be rescued. What limitation of economic policy is this situation illustrating? Explain your answer.

28. Policy effectiveness. University rectors (vice-chancellors) stood up the Spanish Education Minister, J. I. Wert, on the 23rd of May, 2012. It was an unprecedented case. It was claimed that this was expression of a protest against the minister's bad governance, since the decree-law on cuts on the higher education sector then recently passed had been drafted without consulting those in charge of implementing the cuts: the rectors themselves. What limitation of economic policy is this situation illustrating? Explain your answer.

29. Policy. (i) Suggest a macroeconomic variable that typically grows in a booming economy, another one that typically falls, and, for each variable, indicate a policy measure that could neutralize the change in the variable. (ii) Do the same for a slumping economy.

30. Fiscal and monetary policies. Indicate some feature that an expansionary fiscal policy and an expansionary monetary policy have in common. Indicate a difference.

31. Side/revenge effect. Explain if each event represents a side or a revenge effect (WA Sherden, 2011, *Tyranny of unintended consequences and how to avoid them*). (i) Minimum wages increase unemployment. (ii) Imposition of trade barriers to protect industries has resulted in the decline of those industries. (iii) The use of GPS to enhance safety has caused accidents by creating new hazards as users become overreliant on these devices. (iv) Efforts to prevent riots have precipitated them. (v) Hotheaded neighbors silence malfunctioning car alarm systems by trashing cars. (vi) Compulsory public education has allowed women to take on employment.

32. Taylor's rule. Using the Taylor's rule, prove that, when the economy's inflation rate is above the central bank's target, the current real interest rate is above the long-run equibrium real interest rate.

33. Policy comparison. Is there any sense in which, to help the economy expand, it is preferable to conduct an expansionary monetary policy rather than an expansionary fiscal policy? If so, why?

34. Fighting deflation. (i) Explain three ways by means of which a deflationary process may become self-sustained (persist in time). (ii) Indicate two policy measures that could help to revert a deflationary process.

35. Intertemporal budget constraint. Imagine a government that exists for only two periods, 1 and 2. The interest rate between the two periods is 10%. In period 1, the government spends 20 and collects 10 in taxes. In period 2, the government spends 10 and collects 20 in taxes. Does the intertemporal budget constraint hold?

36. Debt-to-GDP ratio. The government wants the primary deficit-to-GDP ratio to be -10% in period t. The debt-to-GDP ratio in $t-1$ was 40%. In t, the real interest rate is 4% and the GDP growth rate is -1%. What would the approximate change in the debt-to-GDP ratio be in t?

37. Macroeconomic policy. A tsunami hits the US Pacific coast, penetrating 100 kilometres inland and devastating all major cities.

(i) Show in a graphical representation of the currency market whether the dollar appreciates or depreciates against the euro.

(ii) Explain the reasons for shifthing the functions you claim that are modified.

(iii) Using the AS-AD model for both the US economy and the eurozone, explain the effect of the tsunami in the real GDP and the inflation rate of each economy, indicating the reason(s) for shifting the functions. State both a fiscal policy measure and a monetary policy measure that could help to neutralize the change in the US real GDP.

38. Macroeconomic policy. Explain how monetary policy can influence the exchange rate. Explain how fiscal policy can influence the exchange rate.

39. Quantity equation. Explain with the help of the quantity equation, or some transformation of that equation, if it is possible that the velocity of circulation of money does not change, nominal GDP grows by 2% and the money stock is reduced a 2%.

40. Macroeconomic policy. Indicate some feature that an expansionary monetary policy and an expansionary fiscal policy have in common and another one that differentiates them.

41. Fiscal policy. Explain whether an expansionary fiscal policy could generate some contractionary effect on the economy.

42. Tools. Select two fiscal policy tools and two monetary policy tools.

43. AS-AD model. At the beginning of May 2015 the Danish Finance minister, Bjarne Corydon, made a proposal to eliminate cash payments from retailers and restaurants on the presumption that this will make easier to do business (by reducing costs) and will boost economic growth (by stimulating productivity). For instance, forcing companies to accept cash payments causes them substantial administrative and financial burdens; in addition, retailers have to spend resources on security guards and surveillance systems and also time to make change for customers. In a cashless economy, by comparison, transaction costs are smaller and crime presumed to go down. Using the AS-AD model explain and analyze graphically the effect on the macroeconomic equilibrium of eliminating cash payments (for each function that shifts as a result of this measure, state why the function shifts).
http://qz.com/399531/denmark-hopes-to-boost-its-economy-by-eliminating-cash/
http://www.independent.co.uk/news/world/europe/denmark-moves-closer-to-a-cashless-society-10231995.html

44. AS-AD model. (i) Using the AS-AD model explain and analyze graphically the effect on the macroeconomic equilibrium of an economy of the application in the rest of the world of an expansionary fiscal policy. (ii) Indicate a monetary policy measure that could neutralize the effect on the inflation rate found in (i). (iii) What effect would the measure suggested in (ii) on the macroeconomic equilibrium of the rest of the world?

45. AS-AD model. Using the AS-AD model, explain and analyze graphically the effect on the macroeconomic equilibrium of each of the following pairs of events: (i) the rest of the world is conducting a contractionary monetary policy at a time when the international price of oil is pushing up; (ii) the domestic government duplicates the wage of all civil servants and pays the wage raise by increasing the tax rate on the firms' profits.

46. AS-AD model. Suggests events causing the shifts of the functions indicated below and specificy the effect on the macroeconomic equilibrium (if the effect is not ambiguous).

Events	AS function	AD function	equilibrium inflation rate	equili-brium GDP
	=	←		
	←	→		
	→	→		

47. ? "Vast amounts of money have been shovelled in to the Japanese economy. That has had two big impacts. It has pushed up real estate and stock prices, and it has pushed down the value of the yen. The first has made rich Japanese richer; the second has made big Japanese exporters richer. But there it has stopped. There has been virtually no trickle-down to the rest of Japan. Stagnant wages and rising prices through most of last year mean most Japanese actually feel poorer."
http://www.bbc.com/news/business-31483274

(i) What kind of economic policy is "to shovel in vast amounts of money"?
(ii) Using the appropriate models, justify the two impacts mentioned.
(iii) Why no trickle-down occurred?
(iv) Why stagnant wages and rising prices make people feel poorer?