Tutorial letter 204/1/2015
Macroeconomics

ECS2602

Department of Economics
Semester 1

Answers to Assignment 04
Answers to Self-assessment Assignment 05

BAR CODE

Dear student

In this tutorial letter you will find the answers to assignment 04 and self-assessment assignment 05. The fact that assignment 05 does not contribute to your semester mark does not mean that these two study units/chapters in the prescribed textbook are not important in the examination. You will find compulsory questions on this work!

1. ANSWERS TO ASSIGNMENT 04 (Unique number: 656870)

This assignment was based on study units 5 to 7 of the study guide. If you experience any problems with these sections, work through the activities in TL102 again.

The correct answers are:

Question		***Question***		***Question***	
1	4	**13**	5	**25**	1
2	4	**14**	5	**26**	5
3	5	**15**	2	**27**	3
4	4	**16**	4	**28**	1
5	1	**17**	3	**29**	4
6	1	**18**	4	**30**	2
7	2	**19**	5	**31**	2
8	5	**20**	3	**32**	1
9	3	**21**	4	**33**	2
10	2	**22**	2		
11	1	**23**	3		
12	5	**24**	3		

Questions 34 to 48 were used to gather information on student profiles and did not count for any marks.

1. The correct option is 4. All the statements refer to the section regarding a depreciation or an appreciation of the nominal exchange rate. See section 5.1 in the study guide (MO001). Statements a, d and f are correct. These are examples of an increase or appreciation in the nominal exchange rate because the rand is worth more in terms of dollars than before. Statements b, c and e are examples of a depreciation of the rand in terms of a dollar.

2. The correct option is 4. Statements b, c and d are correct. Statement a is incorrect since an appreciation in the nominal exchange rate in the case of South Africa means that we must give less rand for one USA dollar since the rand is now stronger. Statement e refers to the real exchange rate. The factors that will impact on the real exchange rate are the nominal exchange rate, the domestic price level of goods and the foreign price level of goods.

3. The correct option is 5. The real exchange rate is the relative price of domestic goods in terms of foreign goods. An increase in the relative price of SA goods compared with USA goods increases the real exchange rate and vice versa. See section 5.1 in the study guide. Statement a is incorrect. In this case the nominal exchange rate will be lower because of the depreciation of the rand against the dollar, the real exchange rate decreases and a real depreciation takes place. Therefore, the USA goods will be relatively more expensive than before the change in the nominal exchange rate. Statement b is correct while statement c is incorrect. Statement d is correct. A real depreciation takes place; therefore USA goods are relatively more expensive.

4. The correct option is 4. See the diagram “Real exchange rate for South Africa” in TL101. From 2005 to 2008 the real exchange rate decreased and then from 2008 to 2010 it moves upwards and therefore increased.

5. The correct option is 1. During 2010 the rand appreciated against the dollar since the rand was worth more in terms of dollars than before. During 2013 the rand depreciated since South Africans had to pay more rand for one dollar.

6. The correct option is 1. If you compared the two inflation rate diagrams, it is clear that the inflation rate in South Africa was higher than in the USA.

7. The correct option is 2. See the discussion of the current account of the balance of payments in the study guide, section 5-2 and section 18.2 in the textbook. Statement a is correct. Statement b is incorrect. If imports exceed exports a trade balance deficit occurs. Statements c and d are correct. Statement e is incorrect. The rand value of net gold exports is excluded in the exports figure. Owing to the importance of gold to the SA economy, net gold exports are shown as a separate category.

8. The correct option is 5. Statements a is correct. Brazil comes close to a trade balance very briefly in early 2009, for the rest of the period both countries suffer from a very obvious current account deficit. Statement b is correct. Statement c is incorrect. The diagram given refers to the current account and not the financial account of the balance of payments.

9. The correct option is 3. Statements a, d and e refer to the financial account of the balance of payments. See the discussion of the financial account in the textbook, section 18.2. Statement a is incorrect. A financial account deficit occurs when the outflow of investment to the rest of the world exceeds the inflow of investment from the rest of the world. Statement b is correct. In the textbook on page 469 it states that “In principle, the change in net gold and other foreign reserves constitutes the balancing item for the overall balance of payments” however it goes on to say that this is true in principle but not practice and that due to statistical discrepancies the “unrecorded transactions” is the balancing item. The SARBs definition of unrecorded transactions is: "*Unrecorded transactions, a double-entry accounting system is used for the recording of balance of payments transactions. In principle, therefore, the net sum of all credit and debit entries should equal the change in the country’s net gold and other foreign reserves (see below). In practice, however, this does not happen since errors and omissions occur in compiling the individual components of the balance of payments. The net effect of these errors and omissions (including differences in coverage, timing and valuation), are entered as unrecorded transactions. In practice, therefore, the unrecorded transactions, which pertain to the current, capital transfer and financial accounts, serve to ensure that the overall balance of payments actually balances."*
   (Source: http://www2.resbank.co.za/internet/Glossary.nsf/0/b7b16cfe93bb024a42256b4300307c89?OpenDocument)
   Statement c is correct. See section 18.2 of the textbook under the heading: "The change in net gold and other foreign reserves". Statement d is correct. Statement e is incorrect. The three main components are direct investment, portfolio investment and other investments (not foreign reserves investment).

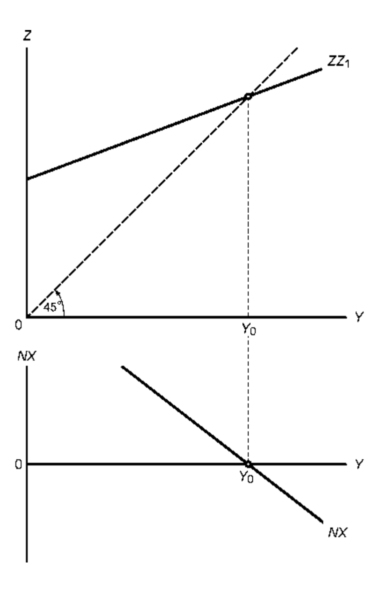
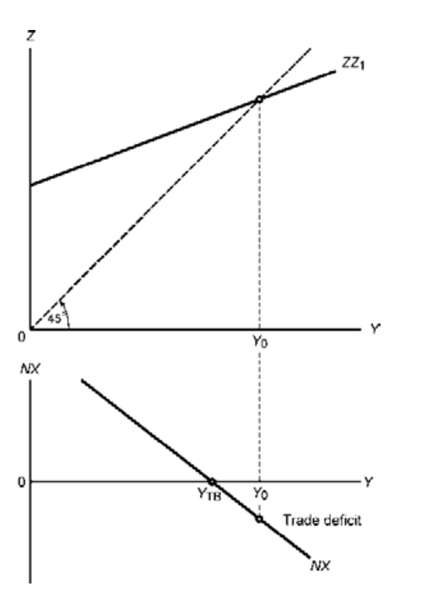
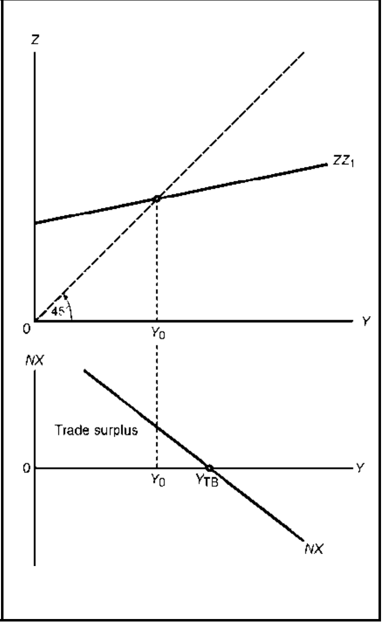
10. The correct option is 2. Whether financial market participants will buy RSA or USA bonds, depends on the difference in the interest rate and also the expected changes in the exchange rate. Although the interest rate is higher on RSA bonds, it does not necessarily follow that RSA bonds are a better investment. The difference between the RSA interest rate and the USA interest rate in this case is 2% (6% – 4%). Thus, if the expected depreciation of the rand is more than 2% (e.g. 3%) financial market participants will buy USA bonds. Why? By holding RSA bonds, the investor will get higher interest payments, but the dollar value of the investment (principle and interest) will be worth less at the end of the period because of the depreciation, making investment in RSA bonds less attractive than investing in USA bonds. Also work through activity 5.8 in TL102.

11. The correct option is 1. Statement a is incorrect. The domestic level of output does not influence exports and exports can thus be regarded as exogenous.

The change in the output of our trading partners (Y*) has an important effect on our level of exports. See section 6.1 of the study guide. Statement b is therefore correct. Statement c is correct. See the study guide: section 6.1. Statement d is correct. See diagram 6.1 of the study guide. The domestic level of output in the economy (Y) is one of the determinants of imports and a positive relationship exists between the domestic level of output and imports. Statement e is incorrect. It is the change in the output of our trading partners (Y*) that impact on our level of exports and not the domestic output in the economy.

12. The correct option is 5. Statement a is correct since imports are R80m while exports are R50m. Statements b and c are incorrect. At an income level of R100m a trade surplus occurs because exports (R50m) are higher than imports (R20m). Statements d and e are correct.

13. The correct option is 5. Equilibrium output is where Y = Z (the intersection point between the ZZ curve and the 45^0 line). Equilibrium output can be associated with three different position as indicated in the diagrams below.

Diagram **Trade balance**	**Diagram** **Trade deficit**	**Diagram** **Trade surplus**
		

Statement c is correct while statements a and b are incorrect. Do you know what the difference is between the demand for domestic goods and the domestic demand for goods? The demand for domestic goods (it is produced in South Africa) excludes imports while the domestic demand for goods (can be produced in South Africa or in any other country) includes imports. Therefore, the goods market is in equilibrium when domestic output is equal to the demand for domestic goods. See diagram 6.4 in the study guide for the difference between the DD curve and the ZZ curve. Statement d is therefore correct and statement e incorrect.

14. The correct option is 5. At any income level lower than R80 million the level of output and income decreases, imports will be lower and a trade surplus will occurs.

15. The correct option is 2. The correct chain of events is as follows: a decrease in government spending will lead to a decrease in the demand for goods and the level of output and income. Since the level of output and income is lower, less will be imported and the trade balance will improve.

16. The correct option is 4. Statement 1 is incorrect. An increase in the real exchange rate implies that SA goods are relatively more expensive than the goods produced in the rest of the world. A more expensive price for exports will usually result in a decrease in exports. Statement 2 is incorrect. Exports are recorded on the current account of the balance of payments. Statement 3 is incorrect.

A trade surplus (or a decrease in a trade deficit) will occur when exports increase. Statement 4 is correct. It can be presented by the following chain of events: X↑ → Z↑ → Y↑.

17. The correct option is 3. If exports increase, the ZZ curve will shift upwards. The demand for goods will increase as well as the level of output and income. This increase in output and income causes a rise in imports. The positive effect of an increase in exports on the trade balance, however, outstrips the negative effect of an increase in imports. The NX curve will shift to the right. The trade balance thus improves.

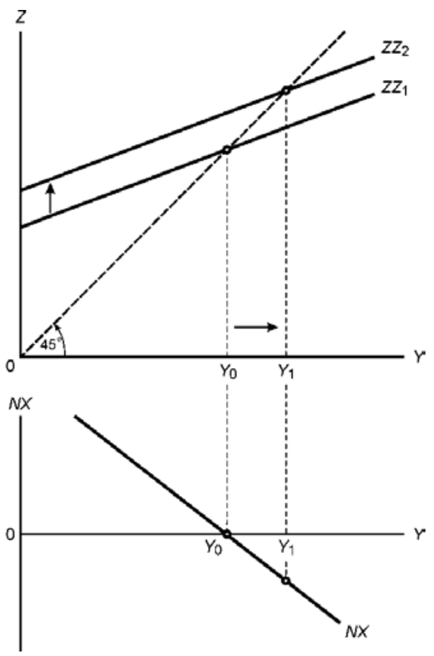
18. The correct option is 4. A contractionary monetary policy, in other words a decrease in the nominal money supply shifts the LM curve upwards and the chain of events will be as follows:
M↓ → M/P↓ → i↑

An expansionary fiscal policy (G↑ and/or T↓) will shift the IS curve to the right. If we use an increase in government spending, the chain of events will be as follows:
G↑→ Z↑ → Y↑
Y↑ → M^d↑ → i↑

Both policies lead to an increase in the interest rate.

19. The correct option is 5. An increase in government spending will shift the ZZ_1 curve upwards and the level of output and income increases.

20. The correct option is 3. Graphically it can be illustrated as follows:



21. The correct option is 4. Revise the meaning of the Marshall Lerner condition in section 6.4 of the study guide.

22. The correct option is 2. A depreciation will reduce the price of exports therefore exports increase, and the ZZ curve will shift upwards. Simultaneously the price of imports increases so imports decrease whist the import bill increases. The demand for goods will increase as well as the level of output and income. This increase in output and income causes a rise in imports. If the Marshall-Lerner condition holds, the positive effect of an increase in exports on the trade balance, outstrips the negative effect of an increase in imports. The NX curve will shift to the right. The trade balance thus improves.

By using a chain of events, it can be represented as follows:

The lower price of exports causes an increase in exports which, in turn, increases the demand for domestic goods as well as the level of output and income.

$P_{exports}\downarrow \rightarrow X\uparrow \rightarrow Z\uparrow \rightarrow Y\uparrow$

The increase in the relative price of imports causes a switching of expenditure from foreign goods (which are now more expensive) to domestically produced goods. This results in a higher demand for domestic goods and a higher level of output and income.

$P_{imports}\uparrow \rightarrow IM\downarrow \rightarrow Z\uparrow \rightarrow Y\uparrow$

This combination of higher exports and lower imports causes an improvement in the trade balance.

$X\uparrow$ and $IM\downarrow \rightarrow$ NX improves

23. The correct option is 3. Statement a is incorrect. Goods market equilibrium implies that output and income depends negatively on both the nominal interest rate and the nominal exchange rate. See the relationships under section 7.1 of the study guide:
$i\uparrow \rightarrow I\downarrow \rightarrow Z\downarrow \rightarrow Y\downarrow$ and $E\downarrow \rightarrow X\uparrow \rightarrow NX\uparrow \rightarrow Z\uparrow \rightarrow Y\uparrow$. Statement b is correct. The IS curve is related to the goods market. Revise study unit 5 in the study guide. See also section 7.3 in the study guide. Statement c is correct. The chain of events is represented as follows:
$i\downarrow \rightarrow I\uparrow \rightarrow Z\uparrow \rightarrow Y\uparrow$. See also section 7.3 in the study guide. Statement d is correct. The chain of events is represented as follows: $E\downarrow \rightarrow X\uparrow \rightarrow Z\uparrow \rightarrow Y\uparrow$.

24. The correct option is 3. Statements a and d are correct. A decrease in the domestic interest rate relative to the interest rate in the rest of the world will cause domestic bonds to be less attractive and a capital outflow occurs. This capital outflow decreases the demand for the domestic currency and the exchange rate depreciates.

25. The correct option is 1. Statements a and d are correct. The rand appreciated against the dollar in this case from R1 = \$0.25 to R1 = \$0.30. The rand is worth more in terms of dollars than before because fewer rands are needed to buy one dollar. The cause of this can be (a) and (d). I.e. either the demand for dollars falls or the supply of dollars increases. Think of it in terms of a normal demand and supply curve representing the demand and supply of dollars in South Africa. The price of a dollar in terms of rands would be measured on the vertical axis and the quantity of dollars demanded is on the horizontal axis. A decrease in the quantity demanded for dollars lowers its price in terms of rands which means that one rand buys more dollars, i.e. the rand's value has appreciated.

26. The correct option is 5. None of the options 1 to 4 is correct since statements a, c and e are correct. The chain of events in this case is represented as follows:
$i\uparrow \rightarrow E\uparrow \rightarrow X\downarrow \rightarrow Z\downarrow \rightarrow Y\downarrow$ and $i\uparrow \rightarrow I\downarrow \rightarrow Z\downarrow \rightarrow Y\downarrow$.

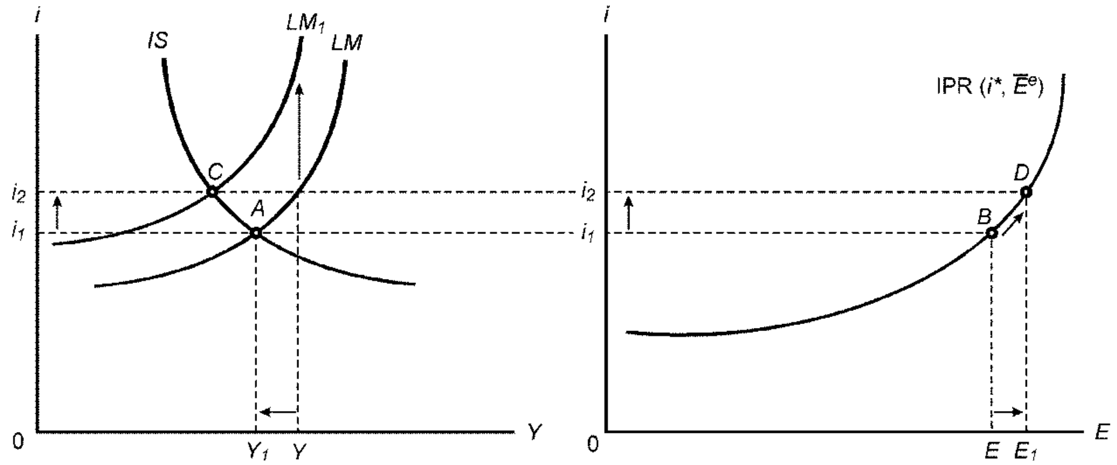
27. The correct option is 3. The shift to the left of the IS curve implies fiscal contraction in other words a decrease in government spending and/or an increase in taxation. A decrease in government spending leads to a decrease in the interest rate (vertical axis of the IS-LM model). The fall in the interest rate causes a decrease in capital inflows; the nominal exchange rate decreases and the domestic currency depreciates. Work thoroughly through the example of an increase in government spending under section 7.4 in the study guide. Note that this question (question 27 in TL101) has referred to the opposite direction, namely a decrease in government spending. Statements 1 and 2 are incorrect since a change in money supply implies a shift of the LM curve. If you cannot remember the factors that will cause a shift of or a movement along the IS or LM curves, please revise study unit 5 of the study guide.

28. The correct option is 1. The shift to the left of the IS curve implies fiscal contraction (or contractionary fiscal policy) in other words a decrease in government spending and/or an increase in taxation on the exchange rate.

29. The correct option is 4. An increase in government spending is the same as fiscal expansion. Work thoroughly through the example of an increase in government spending under section 7.4 in the study guide and diagram 7.3. Note that the trade balance deteriorates as exports decrease.

30. The correct option is 2. This question refers to the effect of contractionary monetary policy in an open economy, for example a decrease in the money supply. Work thoroughly through the example of a decrease in the money supply under section 7.4 in the study guide and diagram 7.4.

31. The correct option is 2. The effect of contractionary monetary policy in an open economy is illustrated as follows:



32. The correct option is 1. An increase in the interest rate leads to an appreciation of the exchange rate. See the diagram under question 31.

33. The correct option is 2. As the exchange rate appreciates, exports decrease and the current account worsens. The appreciation of the currency also causes imports to be less expensive and consequently imports increase although the decrease in output due to decreased exports will also decrease imports. If the Marshall-Lerner condition holds then an appreciation will lead to a worsening of the current account.

2. ANSWERS TO SELF-ASSESSMENT ASSIGNMENT 05

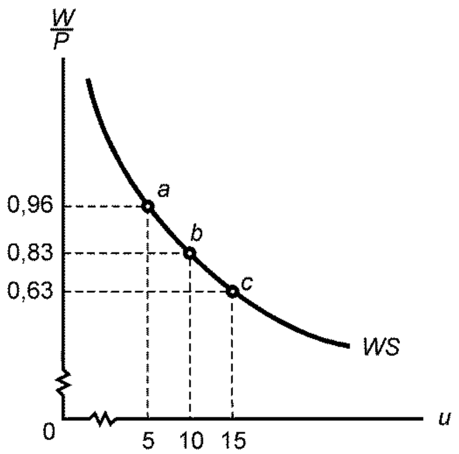
Assignment 05 was based on study units 8 and 9. If you experience any problems with these sections, work through the activities in TL102 again.

The correct answers are:

Question		Question		Question	
1	1	**12**	5	**23**	1
2	1	**13**	4	**24**	3
3	5	**14**	5	**25**	5
4	3	**15**	3	**26**	5
5	1	**16**	2	**27**	2
6	4	**17**	3	**28**	4
7	5	**18**	3	**29**	5
8	4	**19**	5	**30**	2
9	3	**20**	1	**31**	3
10	4	**21**	1	**32**	1
11	3	**22**	3	**33**	5

1. The correct option is 1. These assumptions are set out in section 6.4 of the prescribed textbook and section 8.4 of the study guide. In our analysis of the labour market we assume that labour is the only factor of production used in the production of output, labour productivity is constant, the price of oil and other raw material stays constant and that the price of products set by firms is based on cost plus a mark-up. We look at the impact of a change in the oil price in section 9.6 of the study guide (MO001).

2. The correct option is 1. Statements a and c are correct. See section 8-5 in the study guide. Note the negative relationship between the targeted real wage and the unemployment rate in the diagram below:



Statements b and d are also correct. See section 8.1 in the study guide.

3. The correct option is 5. Factors a, b, d and e are correct. The more expensive it is to dismiss workers, a higher level of output and a lower unemployment rate, an increase in unemployment benefits and labour laws that protect workers from being dismissed are factors that will increase the bargaining position of workers. Statement c is incorrect. A lower level of output and a higher unemployment rate ($Y\downarrow \rightarrow N\downarrow \rightarrow u\uparrow$) will decrease the bargaining position of the workers.

4. The correct option is 3. Statements a, c and d are correct. Statement b is incorrect. An increase in the nominal wage for a given general price level will increase the real wage. Real wage = W/P. Therefore if W increases, and P stays constant, W/P will increase.

5. The correct option is 1. Statements a to d are correct. All the mentioned institutional factors play an important role in the way wages are determined in a country.

6. The correct option is 4. Only the unemployment rate, according to the wage-setting relationship, is **not** an institutional factor (indicated by z in the formula below) that may affect the outcome of wage setting. The wage-setting relationship is as follows:

$$W = \underset{+}{P^e} \underset{-,+}{F(u,z)}$$

7. The correct option is 5. Statement a is incorrect. Workers are not able to determine the real wage through nominal wage bargaining. The wage-setting relationship does not tell us what the actual real wage will be. Workers can try to achieve a desired or targeted real wage by bargaining for a nominal wage, but whether the desired or targeted real wage is achieved will depend on what happens to the price level. And the price level is determined by the mark-up used by firms. Therefore statement b is also incorrect. Through an increase in their nominal wages workers are not able to increase their real wages. Statement c is correct. An increase in the mark-up by firms causes a decrease in real wages. See the following example:

Say for instance the mark-up is 5 %, then the implied real wage is

$$\frac{W}{P} = \frac{1}{1+m} = \frac{1}{1+0.05} = 0.95$$

If the mark-up increases to 10%, the implied real wage decreases to

$$\frac{W}{P} = \frac{1}{1+m} = \frac{1}{1+0.1} = 0.90$$

Statement d is correct. A positive relationship exists between the mark-up and the price per unit:

$$P = (1 + \underset{+}{m})\underset{+}{W}$$

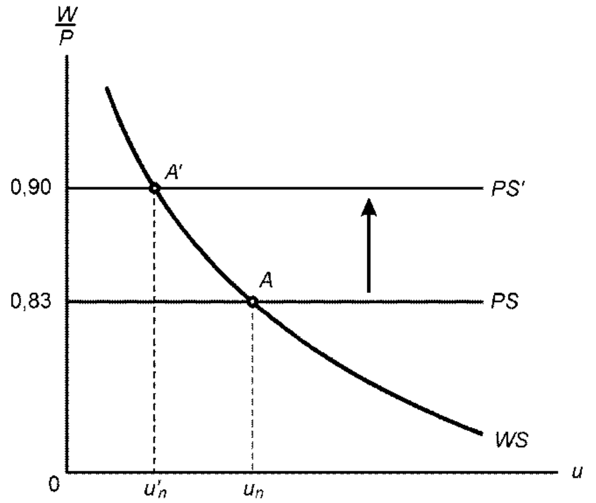
8. The correct option is 4. All the statements are correct. This question is based on section 8.4 in the study guide. Note that statements a and b mean the same thing. Statement c, d and e are captured in the following equation: P = (1 + m)W.

9. The correct option is 3. Statement a is correct since it is captured in the following equation: P = (1 + m)W. Statement b is incorrect. Workers can try to achieve a desired or targeted real wage by bargaining for a nominal wage, but whether it is achieved will depend on what happens to the price level. And the price level is determined by the mark-up used by firms.

   Statement c is correct. A decrease in firms' mark-up, will cause a lower price level, and for a given nominal wage (W), a higher real wage (see the numerical example under section 8.5 "The price-setting relation" in the study guide). Labours' claim is now higher and that of the firm lower.

   Statement d is correct. For example: W/P = 1/1 + m
   Say the mark-up = 20%, thus 1/1+ 20% = 1/1.2 = 0.83
   The mark-up decreases now to 10%, thus 1/1+ 10% = 1/1.1 = 0.90
   The PS curve therefore will shift upwards if the mark-up by firms decreases.

Graphically it can be presented as follows:



10. The correct option is 4. A positive relation means that if one variable increases (or decreases) the other variable also increases (or decreases).
    Statements a, b and e are based on the following equation:
    $W = P^eF(u,z)$
    $\quad\;\; + \quad -,+$

    Statement a is therefore correct, statement b is incorrect and statement e is correct.

    Statements c and d are based on the following equation:

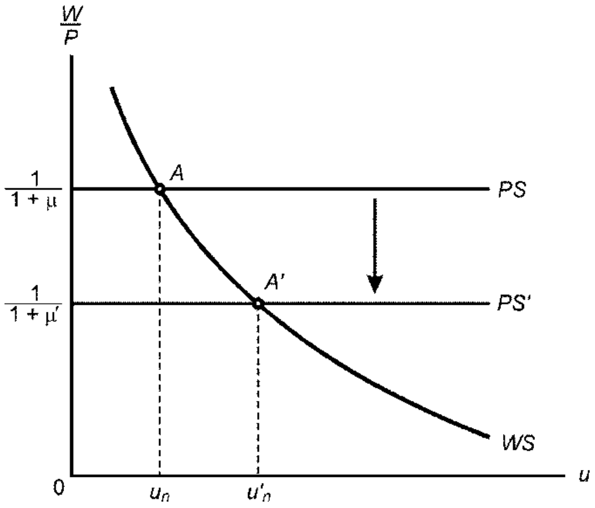
    $P = (1 + m)W$
    $\qquad\;\; + \;\; +$
    Both statements c and d are correct.

11. The correct option is 3. The factors that will shift the WS curve to WS^1 are an increase in unemployment benefits, labour laws that protect workers from being dismissed and a better bargaining position of workers. Statements a and b are incorrect since a higher unemployment rate and a higher level of output will cause a movement along the WS curve.

12. The correct option is 5. The factors that will cause a shift of the WS curve are any factor that changes the bargaining position of workers other than the unemployment rate. A change in the unemployment rate will cause a movement along the WS curve. See also section 8.5 in the study guide.

    Factors that will increase the bargaining position will shift the WS curve upwards while a factor that hampers/worsens the bargaining position will shift the WS curve downwards. Statement a is incorrect. A lower mark-up will shift the PS curve. Statement b is incorrect. A lower unemployment rate will cause a movement along the WS curve. Statement c is incorrect. A lower nominal wage is not a factor that will shift the WS curve. Statement d is correct. Labour laws that provide workers with less protection against layoffs will shift the WS curve downwards. Statement e is incorrect. Better unemployment benefits will shift the WS curve upwards.

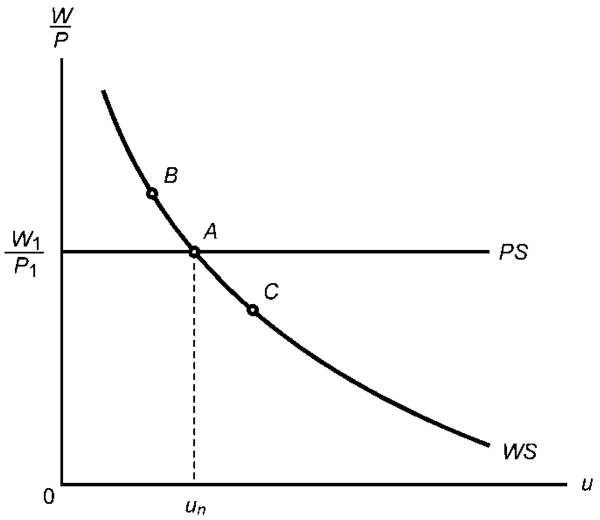
13. The correct option is 4. The diagram below illustrates a higher mark-up (a higher mark-up will shift the PS curve downwards), a decrease in the real wage accompanied by an increase in the natural rate of unemployment from point u_n to u'_n and an increase in the actual price level (if P increases W/P will decrease).



Statement b is incorrect since a lower mark-up will shift the PS curve upwards. Statement d is incorrect. An increase in the workers' bargaining position will shift the WS curve and not the PS curve.

14. The correct option is 5. Only statement b is correct. Statement a is incorrect. A lower mark-up will shift the PS upwards. Statement c is incorrect. A lower unemployment rate will cause an upward movement along the WS curve. Statement d is incorrect. A higher unemployment rate will cause a downward movement along the WS curve.

15. The correct option is 3. See the diagram below. Statement a is correct. At point C the unemployment rate is higher which decreases the bargaining position of workers and the nominal wage they can bargain for decreases. Statement b is incorrect. The unemployment rate is higher which decreases the bargaining position of workers and the targeted real wage implied by price setting decreases. Statement c is correct. The targeted real wage is lower than the implied real wage. Statement d is therefore incorrect.



16. The correct option is 2. A decrease in the level of output (Y) will cause the level of unemployment to increases (because Y decreases, N will decrease and u will increase) which causes a decline in the bargaining position of workers resulting in a lower bargained nominal wage: Y↓ → N↓ → u↑ → W↓.

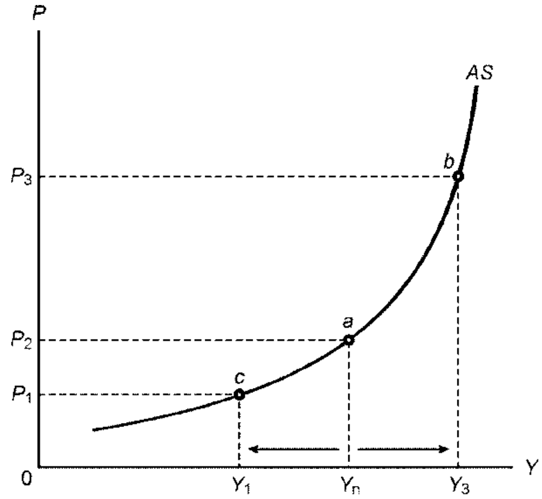
17. The correct option is 3. The chain of events that describes the impact of an increase in output on the labour market is: Y↑ → N↑ → u↓ → W↑. As the level of output increases, employment rises and unemployment decreases. A decline in unemployment strengthens the bargaining power of workers, and nominal wages increase. Note that this is the opposite of question 16.

AS-AD model

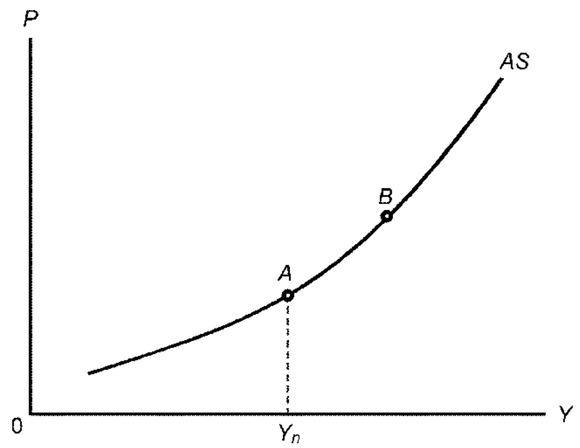
18. The correct option is 3. The AS curve is represented by the following chain of events:
$Y\downarrow \rightarrow N\downarrow \rightarrow u\uparrow \rightarrow W\downarrow \rightarrow P\downarrow$
The opposite is also true. See question 19 below.

19. The correct option is 5. The AS curve has a positive slope because of the following chain of events: $Y\uparrow \rightarrow N\uparrow \rightarrow u\downarrow \rightarrow W\uparrow \rightarrow P\uparrow$. An increase in Y leads to an increase in prices, there is a positive relationship between the two variables.

20. The correct option is 1. All the statements are correct. This question refers to the properties of the AS curve and the factors that will shift the AS curve. Remember that the aggregate supply curve is derived from the wage-setting and price-setting relationships, where it was assumed that the expected price level is given. A given AS curve passes through a point (point a in the above diagram) where the level of output is equal to the natural level of output ($Y = Y_n$) and the actual price level = the expected price level ($P = P^e$). Therefore in this case is $P_2 = P^e$.

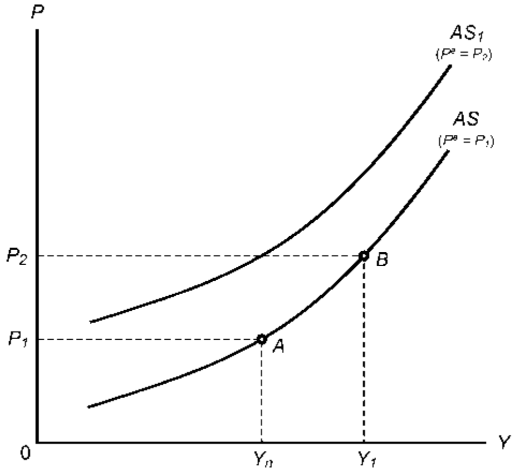


Questions 21 and 22 are based on the following AS curve:



21. The correct option is 1. As already indicated in question 20, an important property of the AS curve is that a given AS curve passes through a point where the level of output is equal to the natural level of output ($Y = Y_n$) and the actual price level = the expected price level ($P = P^e$). Therefore in this case at point A the actual price level = the expected price level ($P = P^e$). At point B compared to point A the expected price level is therefore lower than the actual price level.

22. The correct option is 3. See the diagram below. Since the expected price level P_1 is lower than the actual price level P_2, at point B workers will in the medium to long run respond to this by increasing their nominal wage demands and the AS curve shifts upwards showing that at each output level the price level is higher.



23. The correct option is 1. See section 9.1 of the study guide for the factors that will shift the AS curve versus the factors that will cause a movement along the AS curve. It is only an increase in the expected price level that will cause an upwards shift of the AS curve.

24. The correct option is 3. See the section "Derivation of the AD curve" in the study guide. The AD curve shows a negative relationship between the price level and the level of output and represents combinations of the price level and the level of output and income where the goods and financial markets are in equilibrium. In terms of a chain of events, the derivation of the aggregate demand curve can be represented as follows:

    P↑ → M/P↓ → i↑ → I↓ → Z↓ → Y↓. Therefore only statement 3 is correct. The opposite will also be true: P↓ → M/P↑ → i↓ → I↑ → Z↑ → Y↑.

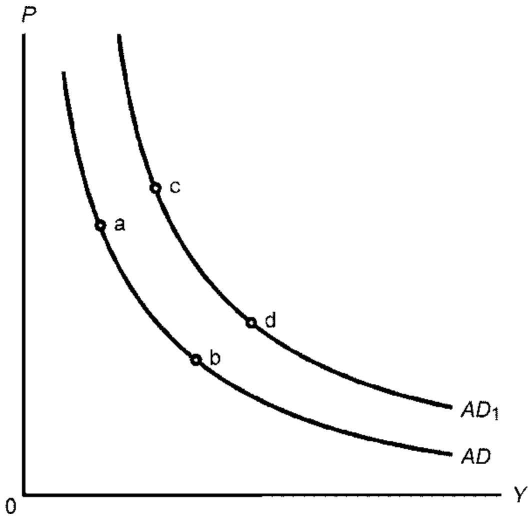
25. The correct option is 5. Note that statements a and d are the opposite of each other. The AD curve is represented by the following chain of events:

    P↓ → M/P↑ → i↓ → I↑ → Z↑ → Y↑
    and
    P↑ → M/P↓ → i↑ → I↓ → Z↓ → Y↓

    See also the derivation of the AD curve.

26. The correct option is 5. See the section "Shifts of the AD curve" in the study guide. A shift in the AD curve is caused by a change in any of the autonomous (or exogenous) variables, such as taxes, government spending or the nominal money supply. Exogenous variables include factors such as autonomous consumption and autonomous investment. Statements a and b are therefore incorrect while statements c and d are correct.

27. The correct option is 2.



To answer this question you must use the following chain of events since when comparing point a with point b on curve AD in the diagram above there was a decrease in the price level:
$P\downarrow \rightarrow M/P\uparrow \rightarrow i\downarrow \rightarrow I\uparrow \rightarrow Z\uparrow \rightarrow Y\uparrow$

Therefore the real money supply is higher at point b, the interest rate is lower at point b, investment spending is higher at point b and the demand for goods is higher at point b.
Statement d is incorrect since a change in government spending will shift the AD curve.

28. The correct option is 4. Statement a is correct and statement b is incorrect. Read the question again. The assumption was that the rightward shift of the AD was due to an expansionary fiscal policy, in other words, an increase in government spending and/or decrease in taxes. Therefore, comparing point b on curve AD with point d on curve AD_1 the level of government spending is higher at point d but the level of taxation must be lower at point d.

The chain of events will be as follows:

$G\uparrow(\text{or } T\downarrow \rightarrow Y_D\uparrow) \rightarrow Z\uparrow \rightarrow Y\uparrow \rightarrow M^d\uparrow \rightarrow i\uparrow$

Therefore statements c and d are also correct. The demand for goods (Z) and the interest rate (i) are higher at point d.
Statement e is incorrect. There will be no change in the nominal money supply.

29. The correct option is 5. Read the question carefully. It refers to the events that describe the adjustment from the short to the medium run to long in the case of an expansionary monetary policy, in other words, $M\uparrow$. The same example will be found under section 9.4 in the study guide and figure 7. in the textbook.
In the short term the initial events will be in the financial market: $M\uparrow \rightarrow M/P\uparrow \rightarrow i\downarrow$; then in the goods market: $i\downarrow \rightarrow I\uparrow \rightarrow Z\uparrow \rightarrow Y\uparrow$ and then in the labour market:
$Y\uparrow \rightarrow N\uparrow \rightarrow u\downarrow \rightarrow W\uparrow \rightarrow P\uparrow$. In the AS-AD model, this is indicated by an upward movement along the AS curve and a **short-run equilibrium** position is reached at point A' in figure 7.7 in the textbook. (But the question does not refer to the short run!)

In the medium to long run, the following will happen: At point A' in figure 7.7, the expected price level on which workers based their real wage negotiations turned out to be lower than the actual price level ($P^e < P$). Workers revised their expected price level upwards and negotiated for higher wages. In reaction to the higher nominal wages, firms increased the price level. Therefore the chain of events is as follows in the labour market: $P^e\uparrow \rightarrow W\uparrow \rightarrow P\uparrow$.

In the ***financial and goods market the following will happen:*** As the price level increases, the real money supply decreases in the financial market leading to a rise in the interest rate.

The increase in the interest rate causes firms to reduce their investment spending, and aggregate demand and the level of output and income therefore decrease. Therefore the chain of events is as follows: $P\uparrow \rightarrow M/P\downarrow \rightarrow i\uparrow \rightarrow I\downarrow \rightarrow Z\downarrow \rightarrow Y\downarrow$.

Therefore alternative 5 is the correct option.

	Labour market	Financial market	Goods market
5.	$P^e < P$: $W\uparrow \rightarrow P\uparrow$	$M/P\downarrow \rightarrow i\uparrow$	$I\downarrow \rightarrow Z\downarrow \rightarrow Y\downarrow$

30. The correct option is 2. The question refers to the events in the **medium to long run** in the case of an expansionary monetary policy in the labour market.

    In the case of expansionary monetary policy the following chain of events will take place in the *short run*:
    Financial market: $M\uparrow \rightarrow M/P\uparrow \rightarrow i\downarrow$
    Goods market: $i\downarrow \rightarrow I\uparrow \rightarrow Z\uparrow \rightarrow Y\uparrow$
    Labour market: $Y\uparrow \rightarrow N\uparrow \rightarrow u\downarrow \rightarrow W\uparrow \rightarrow P\uparrow$

    But the question refers to the **medium to long** run. In the medium to long run the chain of events will be as follows:

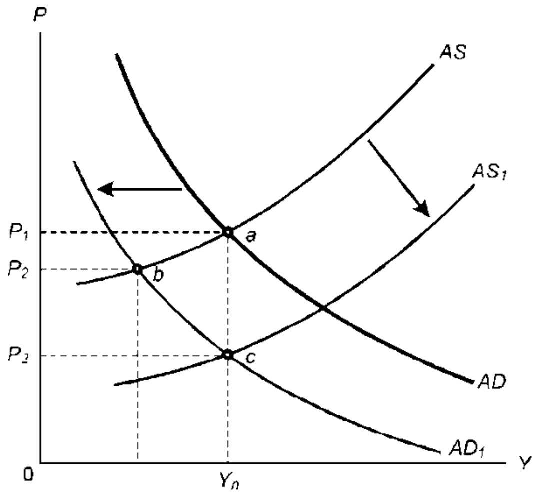
    Labour market: $P^e\uparrow \rightarrow W\uparrow \rightarrow P\uparrow$.
    The expected price level on which workers based their real wage negotiations turned out to be lower than the actual price level. They revised their expected price level upwards and negotiated for higher wages. In reaction to the higher nominal wages, firms increased the price level.

    Therefore, option 2 is correct: $P^e < P$: $W\uparrow \rightarrow P\uparrow$

31. The correct option is 3. Note that this question also refers to **medium to long run** in the case of an expansionary monetary policy, but now in the financial market. The chain of events will be as follows: $M/P\downarrow \rightarrow i\uparrow$. Why? As the price level increases, the real money supply decreases in the financial market leading to a rise in the interest rate.

32. The correct option is 1. Note that this question also refers to **medium to long run** in the case of an expansionary monetary policy, but now in the goods market. The chain of events will be as follows:
    $I\downarrow \rightarrow Z\downarrow \rightarrow Y\downarrow$
    The increase in the interest rate (see answer 31) causes firms to reduce their investment spending, and aggregate demand and the level of output and income therefore decrease.

33. The correct option is 5. The diagram below represents the impact of a contractionary fiscal policy, in other words a decrease in government spending.



Statement a is incorrect since in the short run the interest rate will decrease in the financial market. The complete chain of events will be as follows:

G↓ → Z↓ → Y↓
Y↓ → M^d↓ → i↓

i↓ → I↑
Y↓ → I↓

Statement b is incorrect. The movement along the AD curve from point b to point c is the result of the events in the labour market in the medium to long run and not the short run.

Statement c is correct. In the medium run, the AS curve will shift from AS to AS_1 because of the following chain of events: P^e↓ → W↓ → P↓.

The expected price level on which workers based their real wage negotiations turned out to be higher than the actual price level. Workers revise their expected price level downwards and the nominal wage decreases. In reaction to the lower nominal wages, firms reduce their price levels.

Statement d is incorrect. Comparing the equilibrium point c with the initial equilibrium position a, it is clear that the level of output and income, the level of employment and the unemployment rate are the same as before the decrease in government spending. What is different is that the real money supply is higher (owing to the decrease in the price level), the interest rate is lower (owing to the higher real money supply), investment spending is higher (owing to the lower interest rate) and government spending is lower (by assumption). What has happened in the economy is that the decrease in government spending has been replaced by an increase in investment spending. The real values are therefore different.

3. Examination preparation

This tutorial letter forms part of your study material and so you also need to study its content for examination purposes. It is important that you are able to answer questions like those presented in this tutorial letter as well as in TL102 (Workbook). Test yourself on these questions as preparation for the examination.

All the study material such as the tutorial letters which contain the answers to the assignments (the 200-series of tutorial letters), except the prescribed book, is available on *my*Unisa.

We wish you success in your studies!

Your lecturers

Name of lecturer	**Email address**	**Telephone number (Inside SA)**	**Telephone number (Outside SA)**
Mrs T Uys	uysmd@unisa.ac.za	012 433 4702	+27 12433 4702
Mrs S Kennedy-Palmer	kennes@unisa.ac.za	012 433 4666	+27 12433 4666