ECN320 Exams and summary solutions: May 2018 – Jan 2020

2019 Exam retake (Jan 2020)

Part 1. Explain whether the statements are true, false, or whether it depends. Defend your answer. If depends is your answer, be sure to explain upon what it depends. (25 points)

1.1 The Marshall-Lerner condition does not have any direct relationship to the J-curve effect.

1.2 The theoretical possibility of exchange rate overshooting brings into question the validity of interest-rate and purchasing power parity.

1.3 In a world of low real interest rates, a central bank is less likely to coordinate its policy actions with fiscal policy when responding to weakening aggregate demand, helping to ensure the central bank's independence.

1.4 The euro-zone's financial crisis of 2009-15 was characterized by a "doom loop" where weak banks and sovereigns (governments) pulled each other down. To break the doom loop monetary union has to be backed by a banking union.

1.5 In an open economy, for the central bank to bring down the rate of inflation, it must accept pursuing a negative output gap (the difference between the actual output of the economy and the natural rate of output) by raising interest rates.

Part 2. Answer each of the following questions or respond to the specific statements. Relate your answers to concepts discussed in class and avoid unnecessary information! (45 points)

2.1 John Maynard Keynes, at the Bretton Woods Conference of July 1944, was concerned with trade imbalances and the dangers of asymmetric adjustment between countries with a balance-of-trade surplus or deficit (i.e., +/– BOT). A country with a +BOT might not address their imbalance while one with a –BOT might require a more immediate and bigger policy adjustment. After the global financial crisis, concerns resurfaced about countries running large persistent BOT imbalances. One proposal was to limit +/– BOT to a target of 4% of GDP, requiring a policy adjustment if the target was exceeded. Think about BOT imbalances when answer the following:

  2.1.1 Explain how foreign exchange markets are supposed to bring external accounts into equilibrium. (5 points)

  2.1.2 Why might a BOT target be the wrong policy? Be specific. (10 points)

2.2 Historically, an international currency (sterling in the 19th century) or a metal (gold) has been dominant in the international monetary system. Now, the US dollar anchors the current monetary system (accounting for about 60% of foreign exchange reserves, foreign currency liabilities and bank deposits, despite the US economy only having a 15% share of global GDP and 10% of global trade) and most countries have flexible exchange rates. Keep in mind the role an international reserve currency and flexible exchange rates when answering the following:

  2.2.1 In a world in which most goods are invoiced in dollars and with the dollar as the dominant (reserve) currency explain whether a currency depreciation by a country is effective or ineffective. Be specific. (10 pts)

  2.2.2 The current IMF chief economist, Gita Gopinath, has challenged the idea that flexible exchange rates have benefits over fixed exchange regimes. While she accepts that one benefit of a flexible exchange regime is to allow a country to have its own monetary policy, she argues that the other benefits are often overstated. *List*

other potential benefits of a flexible exchange rate and explain how they might be overstated. (5 pts)

2.3 Across the rich world, jobs abound because of forces that probably have little to do with any specific government policy. Nevertheless, the boom is broad based. Unemployment among unskilled workers and the young has fallen, as has long-term joblessness. However, for much of the post-global-financial-crisis period lower unemployment has not translated into higher wages. Think about the relationship between employment (unemployment), wages and prices in macroeconomics when answering the following:

2.3.1 A well-functioning labor market is characterized by mobility and flexibility. Do the data in the charts provide insight into mobility and flexibility? Explain. (5 pts)

2.3.2 How does the behavior characterized in the wage-setting (WS) and price-setting (PS) model relate to the Phillips curve (PC) in general? Does the given information on the post-crisis period support the Phillips curve? Be specific. (10 pts)
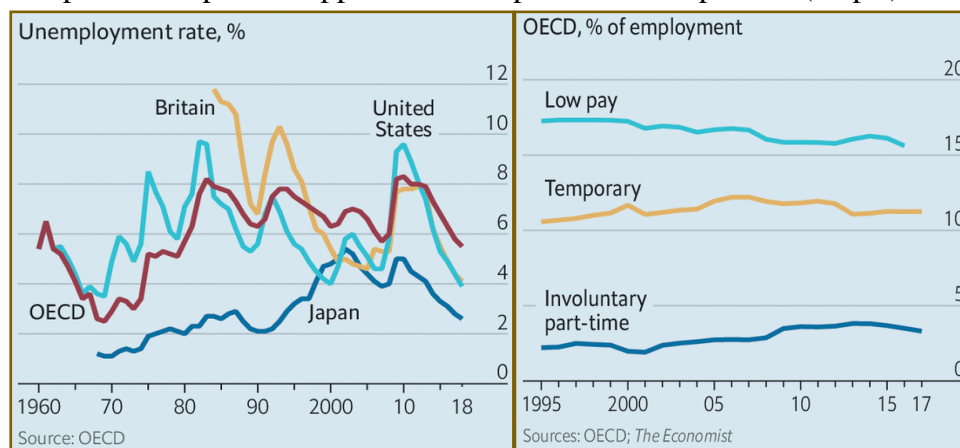
Part 3. Answer the questions related to the macroeconomic scenario described. Be specific and explain your answers to the best of your ability. Label and explain your graphs clearly. Define concepts you think will support your answer and make explicit your assumptions. (30 points total)

"Modern monetary theory", a recent macroeconomic framework, claims that government deficits do not matter in countries that have their own currency. Government spending can occur without taxation (or without having to raise more taxes) either by borrowing in the market or directly from the central bank (i.e., creating money to finance debt). Moreover, proponents of such thinking argue that the economy and inflation should be managed by policy intervention, such as finding jobs for the unemployed.

3.1 Orthodox macroeconomic theory suggests that public debt accumulated by government spending that exceeds revenue collection results in a crowding out of private activity. Explain crowding out. Use the Mundell-Fleming model (IS-LM-BP framework), and the asset market equilibrium (foreign exchange and money market) and the AA-DD framework to show crowding out under a flexible exchange regime. In your explanation state whether the degree of international capital mobility matters. (20 pts)

3.2 Use a simple aggregate supply-demand (AS-AD) model to show the macroeconomic implications of the crowding out. How do the results of this model relate to those in 3.1? Explain. (5 pts)

3.3 What does the Fisher effect say about the relationship between prices and interest rates? Would it have any relation to government spending as modern monetary theorists propose it? (5 pts)

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1.1 The Marshall-Lerner condition does not bare any direct relationship to the J-curve effect.

> F. Define the M-L condition and explain the J-curve to help identify the relationship between the two concepts. The M-L condition states: $dBOT/dE$ is improved when ξ_{ED} and ξ_{ES} w.r.t. E > 1 (elasticities of ES and ED w.r.t. a ΔE). The J-curve states that because prices are slow to change (but import prices increase faster in local currency terms) the BOT worsens in the short run. The existence of a J-curve effect implies that a depreciation cannot improve the BOT in the short run because changes in ES and ED are inelastic w.r.t. ΔE.

1.2 The theoretical possibility of exchange rate overshooting brings into question the validity of interest-rate and purchasing power parity.

> F/D. Define PPP and i-rate parity. Overshooting is a direct consequence of short-run rigidity of the price level. Given that prices are slow to change, expectations on future prices changes can cause PPP or i-partity to deviate from L-R exchange rate. Both $E = P_H/P_F$ and $i_H = i_F + (E^e - E^o)/E^o$ are affected by expectations which can cause E to deviate from PPP. A risk premium can be added to the interest parity relation to account for additional risk not captured in E^e (as happened with Greek bonds vs German bond during the euro crisis).

1.3 In a world of low real interest rates, a central bank is less likely to coordinate its policy actions with fiscal policy when responding to weakening aggregate demand, helping to ensure the central bank's independence.

> F. When real interest rates are low, the CB has little scope with which to use traditional MP. CBs have used QE and negative i-rates, non-traditional forms of MP, as a means of helping asset prices and providing liquidity (facilitating the supply of credit). It has been brought into question how effective future rounds of QE could be. One the CB gets into purchasing debt (and sovereign debt), a strong case can be made that QE is essentially monetizing debt, blurring the distinction between MP and FP. However, FP is the only direct instrument available to stimulate the economy during a recession (weakening of AD) when i-rates are at zero. The use of FP has remained politically unpopular. Thus, non-traditional MP acting as a backdoor to FP does mean that the CB can lose monetary policy independence.

1.4 The euro-zone's financial crisis of 2009-15 was characterized by a "doom loop" where weak banks and sovereigns (governments) pulled each other down. To break the doom loop monetary union has to be backed by a banking union.

> T/D. The euro-zone financial crisis exposed the unfinished business in the institutional framework of the euro. There was a supra-national central bank responsible for common MP, but there was a no bail-out clause and the ECB could not legally act as lender of last resort. Banking supervision, resolution and deposit guarantees were done at the national level not at the supranational level. "Banks are international in life, but national in death." This arrangement made clear that monetary union needed to be supported by both banking union (and also a fiscal union). In the aftermath of the crisis, the ECB was formally given supervision responsibilities over the largest banks, and steps have been taken toward "common backstopping of banks", but less progress has been made on common deposit insurance. Fiscal union was a step toward supranational oversight of budgets and national government deficits and debt levels to ensure a more sustainable FP of each member state.

1.5 In an open economy, for the central bank to bring down the rate of inflation, it must accept pursuing a negative output gap (the difference between the actual output of the economy and the natural rate of output) by raising interest rates.

> T. The central bank would have to accept a negative output gap, slowing down the economy from the natural rate of output and would do so by raising i-rates. Higher rates would discourage investment and the higher i-rate would strengthen the value of the local currency (as investors seek higher i-rates) and the country would export less and import more.

Part 2.

2.1
  2.1.1 Explain how foreign exchange markets are supposed to bring external accounts into equilibrium. (5 points)

> Focus on BOT and BOP. $BOT = (S^P – I) – (G – T)$ suggests that the BOT is determined by private domestic macroeconomic decisions based on prices and interest rates. The $BOP = BOT –$ net K-acct also reflects that BOT is directly related to K-acct. Thus, a BOT imbalance is the result of private domestic decisions by households, firms and investors related to preferences on consumption, saving and investment which are determined by i-rates. Consider a -BOT situation. This can be the result of private HH saving-consumption decisions, saving-investment decisions, and savings-gov't spending patterns. The exchange rate is the mechanism by which savings should be brought into balance with investment, and should express foreigners' willing to finance the gov't's budget deficit.
>
> Discuss how depreciation are supposed to affect trade (X, M) and K-mkts to correct the imbalances.

  2.1.2 Why might a BOT target be the wrong policy? Be specific. (10 points)

> Focus on what a -BOT represents and what is the underlying cause. +/-BOT are the result of private and gov't decision making. The argument is that macro policy objectives should be defined and the BOT left to do what it does, especially in a flexible E regime. Gov't tax and spending decisions should reflect national priorities (employment, output, income, income distribution, infrastructure, ed, health, etc.). The BOT is a consequence of the policies and programs to that end.
>
> Targeting BOT imbalances is not a direct policy to address a particular problem, for example a -BOT. The -BOT situation could reflect the country's need to import K, which might be scarce in the country, in order to develop. Limiting the -BOT could effectively limit the K-inflow hurting economic development and growth. In general, however, if a -BOT reflects borrowing for investment in productive capacity that leads to increase prodvty and output, then the country will be in a position to repay the debt from the K inflow. A BOT target could curb productive private behavior. If the -BOT reflects private consumption (HH spending), then such debt can be more problematic/unsustainable in long run. However, gov't policy should be aimed at encouraging saving or discouraging spending rather than worry about -BOT. If debt is to fund gov't spending, then increasing debt and worries over default could affect mkt expectations. Gov't should reconsider the planned spending rather than worry about -BOT.

2.2
  2.2.1 In a world in which most goods are invoiced in dollars and with the dollar as the dominant (reserve) currency explain whether a currency depreciation by a country is effective or ineffective. Be specific. (10 pts)

If trade occurred a in country's lc a depreciation would be more effective because the price of the good would reflect the price of the currency more directly.

Consider a country that is a commodity net-importer (oil or some other natural resource) of a dollar-denominated good on the int'al market. The country's CB can affect the lc price relative to the dollar, but has it less influence over what the dollar price of a good is on the international market. A depreciation will shift the ED curve in the mkt denominated in $ (upper graph). In lc terms, the depreciation causes domestic price to increase. If area 'a' is smaller than area 'b', then import payments increase and the depreciation is less effective.

On the export side, the good is denominated in $ and reducing the lc value does not change the price in $. Thus, a depreciation does not cause ES to shift to the right.
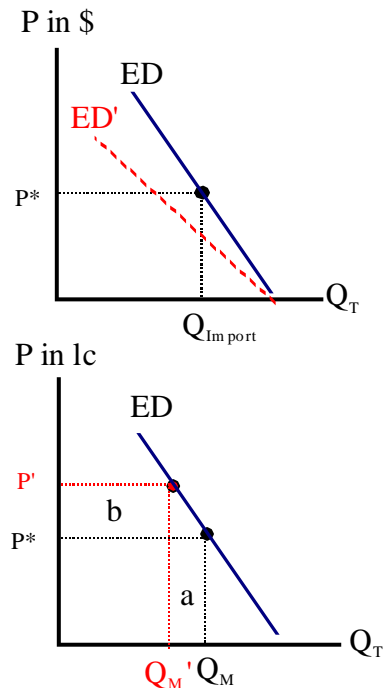
P in $

ED
ED'
P*
Q_T
Q_{Import}

P in lc

ED
P'
b
P*
a
Q_T
Q_M' Q_M

  2.2.2 The current IMF chief economist, Gita Gopinath, has challenged the idea that flexible exchange rates have benefits over fixed exchange regimes. While she accepts that one benefit of a flexible exchange regime is to allow a country to have its own monetary policy, she argues that the other benefits are often overstated. *List* other potential benefits of a flexible exchange rate and explain how they might be overstated. (5 pts)

Benefits of a flexible regime:
  • Not only allows a country to have its own MP, but MP is more effective
  • International capital mobility need not be restricted to keep E fixed
  • E serves as the mechanism by which to keep int'al transactions in balance (-BOT should imply weakening of local currency which serves to reduce the -BOT in the next period).
  • Flexible E can promote international trade because there is no need for exchange restrictions
  • Eliminates/reduces the need for R and intervention in official exchange reserves
  • Reduces speculation over fixed rates
  • Central bank behavior is more transparent
  • CB are more independent and have discretion over MP used (can target P)

Depends on what is listed:
The benefits are overstated because traditional MP is currently impotent (low real i-rates); the case for international capital mobility is weaker than free trade and a case can be made for K controls; countries have amassed unsustainable imbalances questioning E's role as a mechanism for establishing equilibrium; CB behavior is becoming blurred with FP with the use of QE and there has been a loss in CB independence; CB have inflation targets and they have been unable to meet the targets; the case for K mkt liberalization is weaker than trade liberalization (K controls might be justified)

2.3

2.3.1 A well-functioning labor market is characterized by mobility and flexibility. Do the data in the charts provide insight into mobility and flexibility? Explain. (5 pts)

Mobility refers to ability of labor to move from region to region or from job to job in response to higher wages. The steady employment levels in the OECD suggest that labor is not particularly mobile among those with low pay, temporary employed and the involuntary part timers. This is happening despite the low level of unemployment since say 2000. Flexibility refers to wages being above to move up and down in response to market conditions. The paragraph notes that despite low unemployment it has not translated into higher wages (perhaps due to firms having too much power, low L productivity, weaker unions, L being unwilling to push too hard for wage ↑). Rather than raise wages, firms could reduce the margin earned from workers.
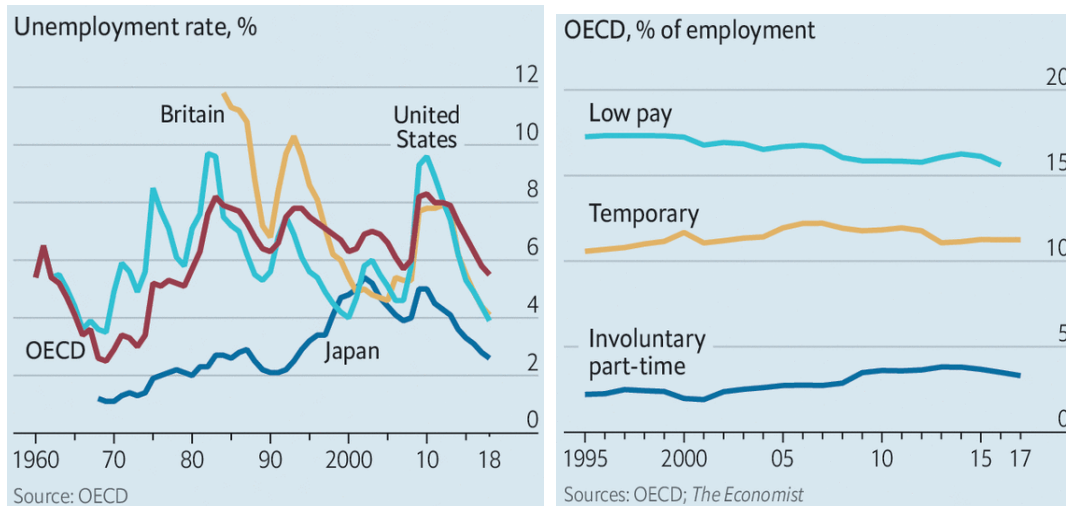

2.3.2 How does the behavior characterized in the wage-setting (WS) and price-setting (PS) model relate to the Phillips curve (PC) in general? Does the given information on the post-crisis period support the Phillips curve? Be specific. (10 pts)

WS: $W/P = F(u;z)$ where u is unemployment and z is a catch all variable for factors that affect real wages (gov't policy and L-related regs) and labor's bargaining power. Upward shift in WS implies real wages are positively affected).
PS: $W/P = [1/1+ \mu]$; horizontal PS reflects constant prodvty; firm is able to extract surplus value of labor from workers; the constant margin of value, μ, reflects bargaining power of the firm. Downward shift in PS implies increased bargaining power by firms. N* corresponds with real wage rate and non-accelerating rate of unemployment and full employment level of output.
PC: the relation between inflation and unemployment. Historically, high inflation was associated with low levels of unemployment and low inflation was associated with higher levels of unemployment. CBs are still concerned with inflation and unemployment, but expectations on prices are related to the output gap (as measured as the natural rate of output against the actual level). The post-crisis period has shown low unemployment, low wages and low inflation (below the target). Could provide a graph of WP-PS and PC
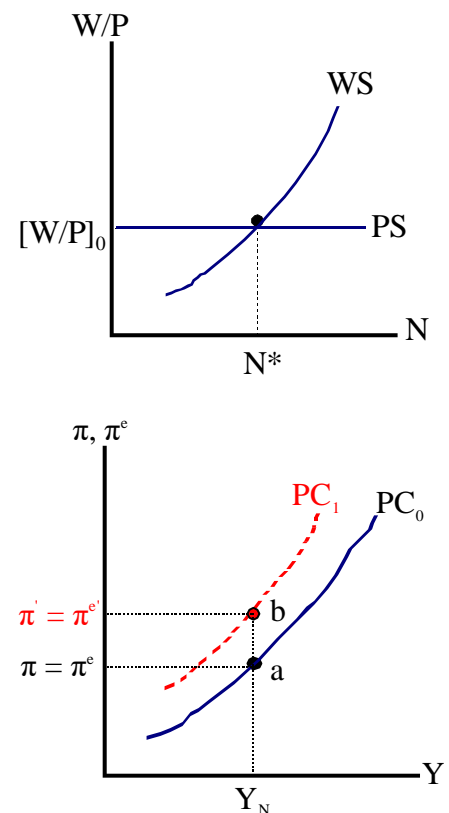
Part 3. (30 points total)

3.1 Orthodox macroeconomic theory suggests that public debt accumulated by government spending that exceeds revenue collection results in a crowding out of private activity. Explain crowding out. Use the Mundell-Fleming model (IS-LM-BP framework), and the asset market equilibrium (foreign exchange and money market) and the AA-DD framework to show crowding out under a flexible exchange regime. In your explanation state whether the degree of international capital mobility matters. (20 pts)

An increase in gov't spending thru borrowing can crowd out the private sector in two ways: the gov't's borrowing makes it more difficult for firms/investors to borrow and increased borrowing will strengthen the currency, reducing exports and increasing imports. Crowding out of investment is normally associated with fixed E and are possible regardless of K-mobility. The cases shown are for a flexible regime as most countries that borrow in their own currency have flexible E regimes. The permanent increase in spending does not result in a BOP crisis in this example.

Using the foreign exchange-money market and the AA-DD framework:

Since borrowing in local currency does not present a problem, MMT would argue for permanent $\uparrow G \rightarrow$ DD curve shift to the right and $\downarrow E$. MP does not change. AA curve shifts to the left because $\downarrow E^e$. (expected fc assets earn relatively less).

Using the IS-LM-BP framework:
$\uparrow G \rightarrow$ IS curve shift to the right but the strengthening currency shifts IS back and the BP curve shifts left too (strengthening currency and net imports increase). BP shows K to be relatively mobile but there is a small increase in i-rate and $Y > Y_N$. This is not consistent with the AA-DD because the IS-LM-BP framework does not take into account the Δ expectations. Under the perfectly mobile K, BP is horizontal and IS shifts back to eqlbm at Y_N.
FP is not useful under a flexible regime, ΔG is crowded out (offset) by Δprivate activity.
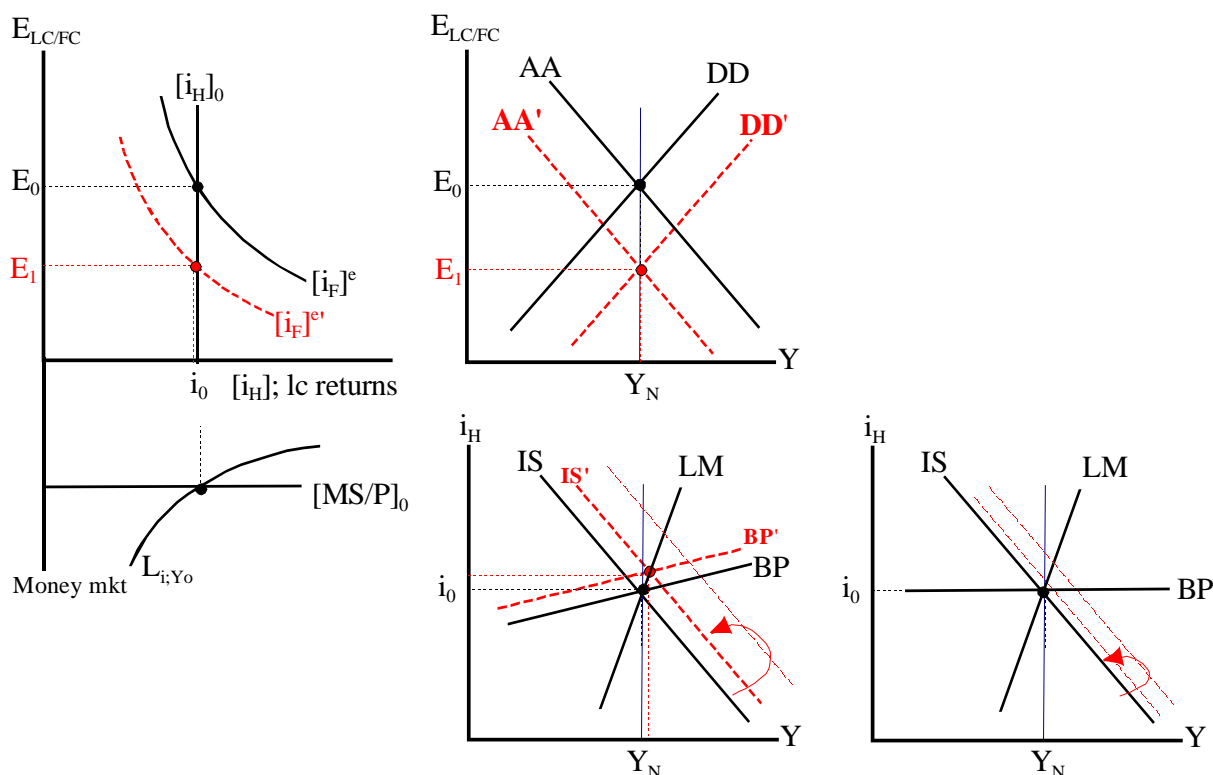
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3.2 Use a simple aggregate supply-demand (AS-AD) model to show the macroeconomic implications of the crowding out. How do the results of this model relate to those in 3.1? Explain. (5 pts)

> The permanent $\uparrow$AD ($\uparrow$G) $\rightarrow$ P^e increase because $Y > Y_N$. P catches up with $\uparrow P^e$ at $Y = Y_N$, intersection of AS=AD, restoring Y to the natural rate of output at a higher rate of inflation.
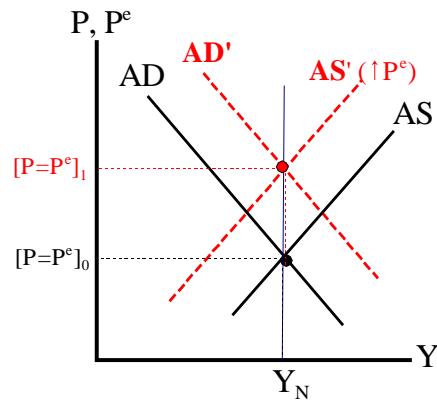
3.3 What does the Fisher effect say about the relationship between prices and interest rates? Would it have any relation to government spending as modern monetary theorists propose it? (5 pts)

> Fischer effect is about the relationship of prices and interest rates. $i_{real} = i_{nominal} -$ inflation. Nominal interest rates follow inflation as a means of keeping the real i-rate the same. Most economists would still expect that deficit spending is likely to result in inflation and the deficits and debt levels still matter. Once inflation picks up again, interest rates will follow making debt more expensive and more of a burden for private and public actors alike.

End of 2019 retake

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Part 1. Explain whether the statements are true, false, or whether it depends. Defend your answer. If depends is your answer, be sure to explain upon what it depends. (25 points)

1.1 Expansionary fiscal policy can result in a crowding out effect (when lower investment levels offset the effect of higher government spending). Such crowding out is a feature of both the degree of capital mobility and type of exchange rate regime (fixed or flexible).

1.2 Consider an external shock affecting Home's macroeconomy. For Home's balance of payments to be in equilibrium, all internal prices will need to adjust to the external shock regardless of the type of exchange regime (fixed or flexible) used by Home.

1.3 Dollarization (accepting a foreign currency, usually the US dollar, as the legal means of settling domestic transactions) would make more sense for the economy of a small, open country rather than for a large economy.

1.4 Consider a country with a history of both budget deficits and current account deficits (negative balance of trade). Policy aimed at reducing the budget deficit would only reduce the value of the local currency.

1.5 The possibility of exchange rate overshooting is one reason for the enhanced effectiveness of monetary policy under flexible exchange rates.

Part 2. Answer each of the following questions or respond to the specific statements. Relate your answers to concepts discussed in class and avoid unnecessary information! (45 points)
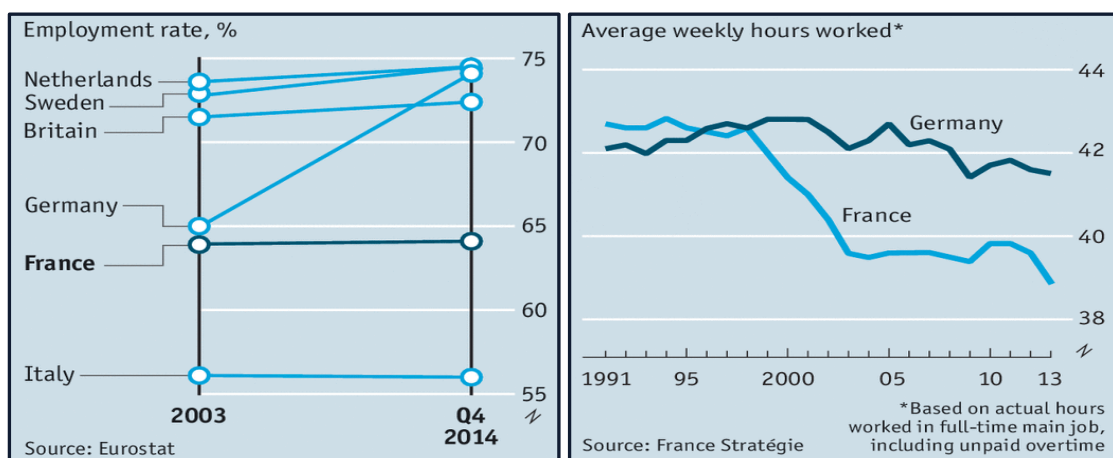
2.1 A question facing a country choosing to fix the value of its currency to a foreign currency (or a basket of currencies) must be how it will defend the exchange rate target. In doing so, the country has various options: (a) loosening the peg (fix), gradually devaluing or revaluing; (b) intervening by buying/selling currencies; (c) imposing foreign exchange controls; (d) altering monetary policy to change the supply-demand position affecting export supply, import demand and/or international capital flows; and (e) altering fiscal policy to change the supply-demand position affecting export supply, import demand and/or international capital flows. Use this information to answer the following:

  2.1.1 Suppose there is pressure for the exchange rate ($E_{lc/fc}$) to increase. *List* reasons why the equilibrium exchange rate might be affected. Be specific. (5 points)
  2.1.2 Consider your list in 2.1.1 and rank the policy options from best to worst. Explain your ranking of the policy responses. If it helps, provide a simple model to help illustrate the changes in the exchange rate equilibrium. (10 pts)

2.2 The global financial crisis of 2007 exposed the excessive debt buildup and brought a lack of confidence in financial institutions, resulting in a liquidity crisis. A reluctance of firms to borrow and invest and households to spend was a feature of the macroeconomic situation. The central banks of many mature economies (UK, US, Japan and the Eurozone area) responded with unorthodox monetary policy. Keep in mind the macroeconomic conditions that existed and why unorthodox monetary policy was necessary when answering the following:

  2.2.1 Why do some argue that unorthodox monetary policy blurs the distinction between monetary and fiscal policy and affects central bank independence? Explain. (8 pts)
  2.2.2 Some argued that unorthodox monetary policy would be a "first shot fired" in a currency war. How could unorthodox monetary policy in mature economies affect

global currency markets and what evidence could point to its negative effects? Be specific. (7 pts)

2.3 The wage-setting (WS) and price-setting (PS) behavior describes how labor markets work by providing a model that links prices, wages, employment (unemployment) and output. Keep in mind the underlying processes that help determine wages in the WS-PS model when considering the following:

 2.3.1 Describe the features of the WS-PS model. (5 pts)
 2.3.2 During 2008-16, wages in France increased in real terms by 1% per year while the unemployment rate increased. In Germany (and many other countries), by contrast, unemployment decreased and wages remained unchanged. The graphs below highlight other differences in France and Germany's labor markets. How could the WS-PS model be useful in explaining these differences in the labor market situations in France and Germany? [Hint: You do not need to know anything about the actual processes of the French or German labor markets – it is enough to identify possible factors causing these differences.] (10 pts)

Part 3. Answer the questions related to the macroeconomic scenario described. Be specific and explain your answers to the best of your ability. Label and explain your graphs clearly. Define concepts you think will support your answer and make explicit your assumptions. (30 points total)

3.1 Consider how the macroeconomic situation in a country called Home changes with a permanent expansion of fiscal policy by Home's government. Use the AA-DD model from Krugman, Obstfeld and Melitz (and developed in class) to show the effects of the permanent increase in fiscal policy on output, exchange rates and interest rates. [Note: this is a permanent increase in G-T rather than successive increases in G-T over time.] Be sure to link the AA-DD model to the model of interest parity (the interest-exchange rate relationship or the asset market equilibrium). Explain the short- and long-term changes in equilibrium. (10 pts)

3.2 Use a simple aggregate supply-demand (AS-AD) model to show the macroeconomic implications of the permanent increase in fiscal policy expansion. How do the short- and long-run macroeconomic results of this model relate to those in 3.1? Explain. (10 pts)

3.3 Use the three-equation model (i.e., investment-spending, Phillips curve, monetary rule, or the IS-PC-MR curves) developed in class to show the effects of a permanent increase in aggregate demand. Discuss the changes in equilibrium. In your discussion, explain the underlying assumptions and the policy objectives driving the policy responses. How might the results differ from the situation(s) in 3.2 and 3.3? (10 pts)

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1.2 Expansionary fiscal policy can result in a crowding out effect (when lower investment levels offset the effect of higher government spending). Such crowding out is a feature of both the degree of capital mobility and type of exchange rate regime (fixed or flexible).

> T. In general, $\uparrow G \to \uparrow i$, which negatively affects I (under both fixed and flexible E regimes), but the issue relates to the net effect on Y. If int'al K is mobile, then it is correct to say i_H will not be affected as much as when K is immobile. However, more importantly for the crowding out effect is that the $\uparrow i \to \downarrow I$ and $\to \downarrow Y$. Under a fixed E, MP might have to contract, making the crowding out effect stronger. Under a flexible regime, the $\uparrow i \to \downarrow E$, which $\to \downarrow (X\text{-}M)$ which instead reduces the effect of Y.

1.3 Consider an external shock affecting Home's macroeconomy. For Home's balance of payments to be in equilibrium, all internal prices will need to adjust to the external shock regardless of the type of exchange regime (fixed or flexible) used by Home.

> F. Recall that $E_{lc/fc} = P_H/P_F$. An external shock affects P_H relative to P_F. Under a fixed E internal prices do need to change in response to an external shock. This relates to the need for internal devaluation (changes in prices and wages) since E is not supposed to change. Under a flexible E regime the external shock can affect E without having all internal prices having to adjust.

1.4 Dollarization (accepting a foreign currency, usually the US dollar, as the legal means of settling domestic transactions) would make more sense for the economy of a small, open country rather than for a large economy.

> T. Dollarization is a type of fixed E regime. $E_{lc/fc} = P_H/P_F$ and a fixed E implies $P_H = P_F$. That is, general inflation is more likely to follow the anchor country when/if a country is small (is a price taker from the anchor country) and open (trade's share of GDP is high, especially with the anchor country). Stability in E will ensure $\%\Delta GDP$ will be more stable. For a large country, it might not make sense for the country to accept P_F or the anchor country's inflation rate. A larger country tends to have smaller share of trade activity and more domestic activity (meaning E stability and trade activity is less important). Thus, dollarization would tend to make sense in the case of a small country.

1.5 Consider a country with a history of both budget deficits and current account deficits (negative balance of trade). Policy aimed at reducing the budget deficit would only reduce the value of the local currency.

> D. The M-F model would predict that a budget deficit would raise i-rates and the value of the local currency to encourage K-inflow (borrowing from abroad). This would especially be the case if savings were also lower than investment. Thus, a reversal of the budget deficit should do just the opposite, i.e., lowering the value of the currency. However, for a country with a history of twin deficits one should also consider the effect of the overall debt position (asset-liability position of the country). At some point, debt levels should affect risks and the willingness of investors to hold lc debt, requiring even higher i-rates. If expectations on a higher likelihood of default take hold then the reduction of the debt by reducing the deficit could strengthen the value of the currency. The point is to say something about expectations resulting from the "history of both the budget and current account deficits". Relate this to overshooting and the cause(s) of the –BOT.

1.6 The possibility of exchange rate overshooting is one reason for the enhanced effectiveness of monetary policy under flexible exchange rates.

> T. If E overshooting is a possibility (under either fixed or flexible E regimes), then MP control over i,P would be a means of preventing overshooting. Overshooting is the result of changes in investor expectations. If MP can curb expectations on P (which might be slow to change) and $[i_F]^e$, then overshooting will be less likely. Under fixed E regimes, MP has less room for maneuver and E can overshoot more easily. Need to relate MP to expectations.

Part 2.

2.1 A question facing a country choosing to fix the value of its currency to a foreign currency (or a basket of currencies) must be how it will defend the exchange rate target. In doing so, the country has various options: (a) loosening the peg (fix), gradually devaluing or revaluing; (b) intervening by buying/selling currencies; (c) imposing foreign exchange controls; (d) altering monetary policy to change the supply-demand position affecting export supply, import demand and/or international capital flows; and (e) altering fiscal policy to change the supply-demand position affecting export supply, import demand and/or international capital flows. Use this information to answer the following:

2.1.1 Suppose there is pressure for the exchange rate ($E_{lc/fc}$) to increase. *List* reasons why the equilibrium exchange rate might be affected. Be specific. (5 points)

> E, the price of one currency in terms of another, is determined by S+D. ΔE will be caused by change is demand, supply and changes expectations.
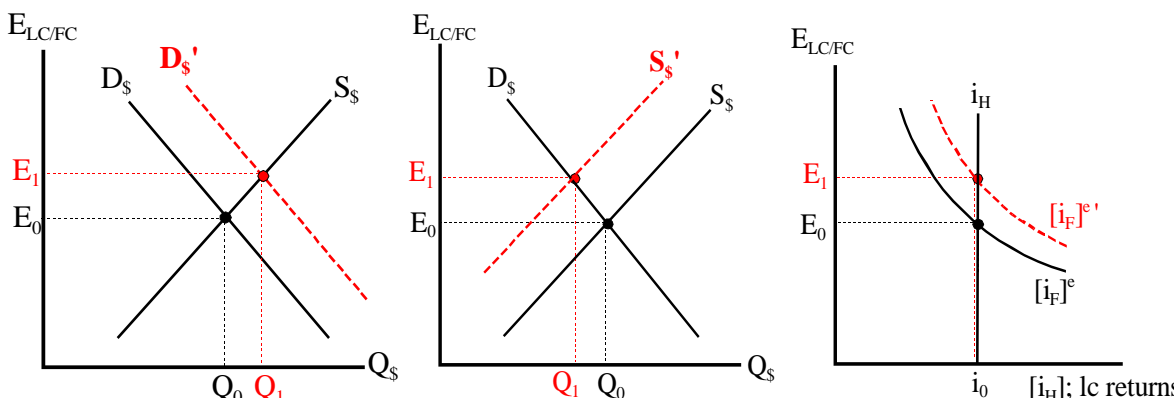> - Change in demand for foreign currency
>   - ↑ imports of goods + services
>   - ↑ K-inflow into Home (FDI, portfolio investment and borrowing from abroad)
>   - Change in Home's policy affecting the above
> - Change in supply of foreign currency
>   - ↑ Home's exports of goods/services
>   - ↑ Home's K-outflows
>   - Change in Foreign's policy
> - Changes in expectations on E, P, i_F

2.1.2 Consider your list in 2.1.1 and rank the policy options from best to worst. Explain your ranking of the policy responses. If it helps, provide a simple model to help illustrate the changes in the exchange rate equilibrium. (10 pts)

> Ranking depends on particular explanation given. The focus here is on ΔD side in Home:
>   * Buy/sell foreign currency   * Changes in MP esp when coordinated with FP
>   * Changes in FP esp when coordinated with MP
>   * Applying exchange controls esp if the issue related to K-outflows
>   * Loosening the peg – likely to affect expectations.

The ranking applies most to the $\Delta D_\$$ because it is where Home's policy intervention is most likely to affect a change. The ranking is based on an indirect means of affecting change without resulting in unintended consequences (K-controls or loosening peg).

2.2 The global financial crisis of 2007 exposed the excessive debt buildup and brought a lack of confidence in financial institutions, resulting in a liquidity crisis. A reluctance of firms to borrow and invest and households to spend was a feature of the macroeconomic situation. The central banks of many mature economies (UK, US, Japan and the Eurozone area) responded with unorthodox monetary policy. Keep in mind the macroeconomic conditions that existed and why unorthodox monetary policy was necessary when answering the following:

2.2.1 Why do some argue that unorthodox monetary policy blurs the distinction between monetary and fiscal policy and affects central bank independence? Explain. (8 pts)

Unorthodox MP consists of QE and negative i-rates. Focus on how QE is like FP. QE involves asset purchases of various forms by the central bank. The asset purchases can be of risky gov't bonds and/or firms' bonds. The asset purchases can serve as a means of facilitating borrowing (easing credit) to gov'ts, investors and firms. This can be viewed as a subsidy to investors/firms. By facilitating borrowing by gov't QE can be a means of monetizing the debt (printing money) acting just like FP. In so doing, the bank is blurring the distinction between MP and FP (printing money to expand government spending). By facilitating borrowing by firms or investors, the central bank can be subsidizing targeted firms (large firms or banks that are too big to fail). In so doing the CB is making a decision on whose welfare within society to help (large firms or bankers as opposed to households in debt).
The more the CB must rely on QE the more politicized the decisions become and the more congressional or parliamentary approval and oversight the bank comes under. This adversely affects its independence and transparency. The date of "tapering" (ending QE) has been politicized in both the US and Euroarea. The decision to help only particular segments of society is both political and encroaches on fiscal policy.

2.2.2 Some argued that unorthodox monetary policy would be a "first shot fired" in a currency war. How could unorthodox monetary policy in mature economies affect global currency markets and what evidence could point to its negative effects? Be specific. (7 pts)

QE increased MS of the ¥, £, $, and € and lowered the value of these currencies relative to other foreign currencies. Raising the value of emerging mkt currencies could have negatively affected their current account and GDP growth rates by hurting their exports. QE ↑ asset purchases, but there were no conditions on domestic asset purchases on lc denominated assets. Thus, some of the money went to purchase assets of emerging mkt economies (K-outflows that further raised the currency values in emerging mkt economies)
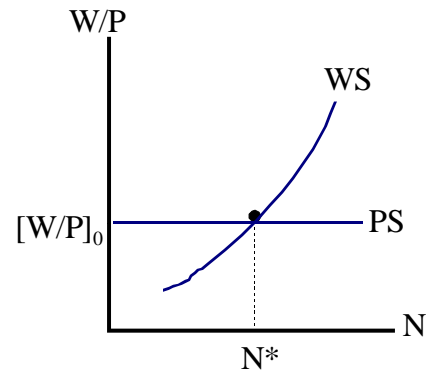
and contributing to fc borrowing/debt in LDCs. This raised their borrowing and fc debt levels making them more vulnerable when the QE began to be phased out.

2.3 The wage-setting (WS) and price-setting (PS) behavior describe how the labor market works by providing a model that links prices, wages, employment (unemployment) and output. Keep in mind the underlying processes that help determine wages in the WS-PS model when considering the following:

   2.3.1 Briefly describe the WS-PS model. (5 points)

WS: W/P = F(u;z) where u is unemployment and z is a catch all variable for factors that affect real wages (gov't policy and L-related regs) and labor's bargaining power. Upward shift in WS implies real wages are positively affected).
PS: W/P = [1/1+ μ]; horizontal PS reflects constant prodvty; firm is able to extract surplus value of labor from workers; the constant margin of value, μ, reflects bargaining power of the firm. Downward shift in PS implies increased bargaining power by firms. N* corresponds with real wage rate and non-accelerating rate of unemployment and full employment level of output.

2.3.2 During 2008-16, wages in France increased in real terms by 1% per year while the unemployment rate increased. In Germany (and many other countries), by contrast, unemployment decreased and wages remained unchanged. The graphs highlight additional differences in the Franco-German labor market. How could the WS-PS model be useful in explaining these differences in the labor market situations in France and Germany? [Hint: You do not need to know anything about the actual processes of the French or German labor markets – it is enough to identify possible factors causing these differences.] (10 points)
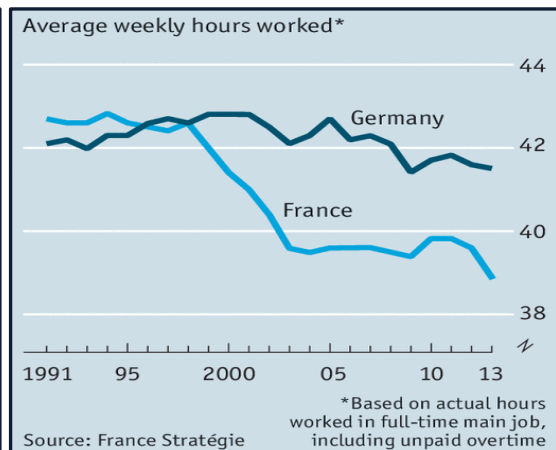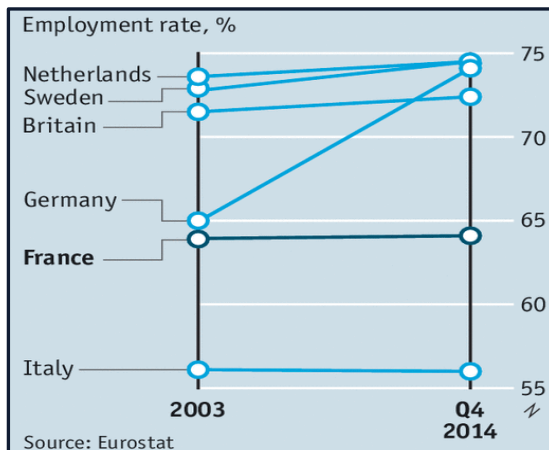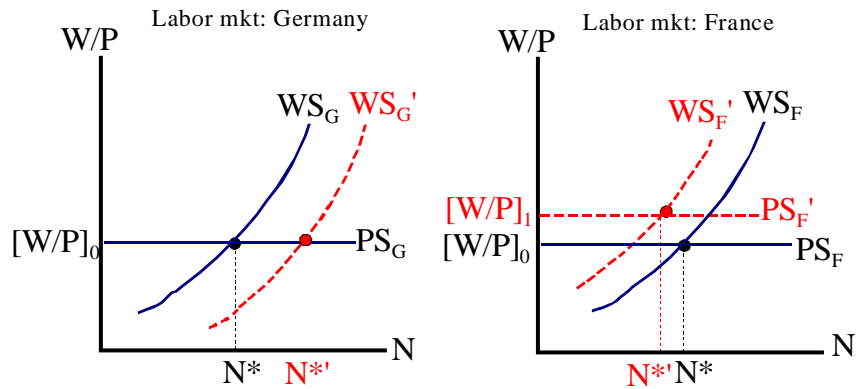

In Germany, the employment rate has increased even as the population has increased (and perhaps the labor force). Average number of hours worked a week has fallen slightly but not during 2008-16. Wages have remained largely unchanged suggests either that bargaining power has neither favored workers nor firms. The substantial increase in the employment rate could suggest that some compromises were made.
In France, by contrast the workers have had a real wage increase despite the employment rate staying about the same and hours worked having decreased. Higher real wages (from some regulation or an improvement in labor's bargaining position relative to the firms') is consistent with a reduction in employment. While employment does not decrease, overall hours worked have decreased. France's employment has been shown as falling in the graph

because the population and the labor force is assumed to have increased over the period and hours worked have decreased.

Labor mkt: Germany

Labor mkt: France

Part 3. Answer the questions related to the macroeconomic scenario described. Be specific and explain your answers to the best of your ability. Label and explain your graphs clearly. Define concepts you think will support your answer and make any assumptions you have explicit. (30 points total)

3.1 Consider how the macroeconomic situation in a country called Home changes with a permanent expansion of fiscal policy by Home's government. Use the AA-DD model from Krugman, Obstfeld and Melitz (and developed in class) to show the effects of the permanent increase in fiscal policy on output, exchange rates and interest rates. [Note: this is a permanent increase in G-T rather than successive increases in G-T over time.] Be sure to link the AA-DD model to the model of interest parity (the interest-exchange rate relationship or the asset market equilibrium). Explain the short- and long-term changes in equilibrium. (10 pts)

Permanent $\uparrow G \rightarrow DD$ curve shift to the right and $\downarrow E$. MP does not change, but increased AD without a change in the real sector $\rightarrow \uparrow P$.

$\uparrow P \rightarrow \downarrow [MS/P]$ causing AA curve to shift left until Y_N is restored at the lower E ($\uparrow$ value of lc). Y is restored at the natural rate of output at a faster rate of inflation.
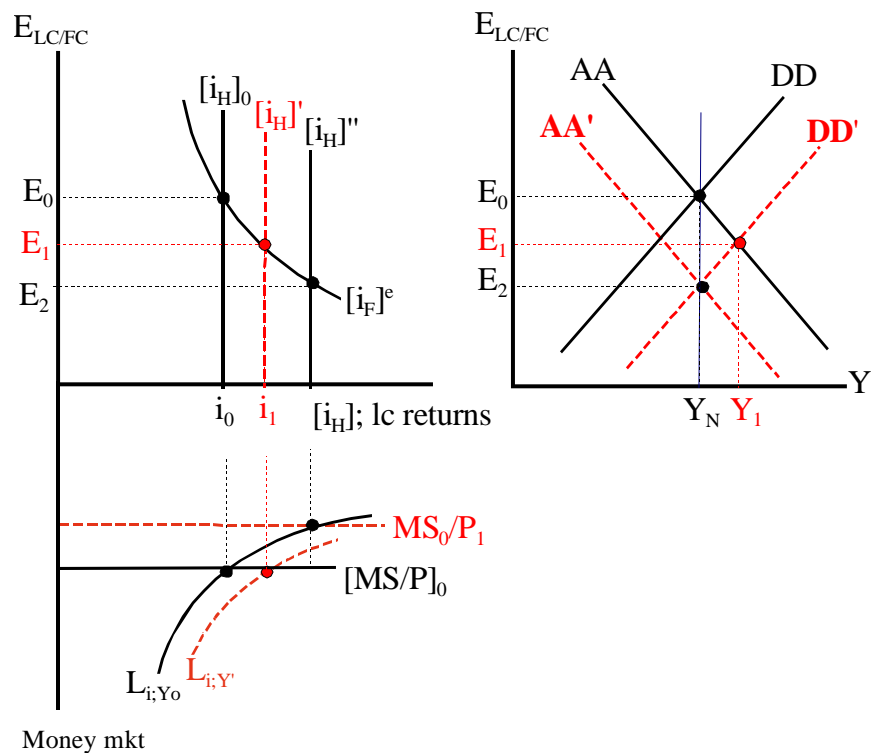

Money mkt

3.2 Use a simple aggregate supply-demand (AS-AD) model to show the macroeconomic implications of a permanent increase in fiscal policy. How do the macroeconomic results of this model relate to those in 3.1? Explain. (10 points).

The permanent ↑AD (↑G) → ↑ P in short run, but increases Y before P^e causing Y to increase. Y expands until ↑ P^e catches up with ↑ P at which point the AS curve shifts to the left, restoring Y to the natural rate of output at a higher rate of inflation.

The results in this graph are exactly the same as what is presented in 3.1: higher inflation and Y at Y_N.
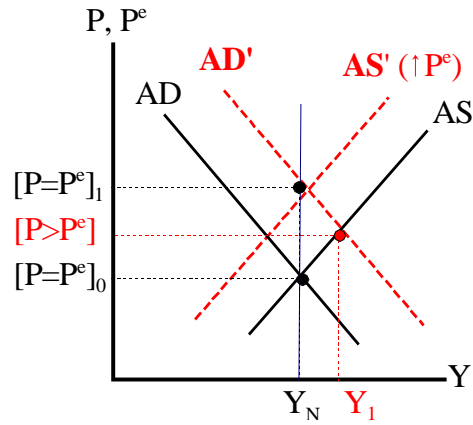
3.3 Use the three-equation model (i.e., investment-spending, Phillips curve, monetary rule, or the IS-PC-MR curves) developed in class to show the effects of a permanent increase in aggregate demand. Discuss the changes in equilibrium. In your discussion, explain the underlying assumptions and the policy objectives driving the policy responses. How might the results differ from the situation(s) in 3.2 and 3.3? (10 pts)

In this case, one uses the IS-PC-MR to reflect the CB has an inflation target, π^T (suppose at 2%). The ↑ AD causes the rightward shift in the IS curve (which has real interest rates on the vertical axis). The ↑IS at i_0 is too low and allows ↑Y > Y_N in the short run. This causes employment to increase and pushes up wages and prices. The higher prices (as occurs in graphs in 3.1 and 3.2) is movement along the PC curve here. As expected price increases > π^T, the CB must take action to slow the economy, raising nominal interest rates faster than the inflation rates (↑i_{real} to i'). As the economy adjusts, the CB can lower nominal interest rates as inflation and expected inflation fall. This happens until Y is restored at Y_N. Inflation is returned to its target (not as in 3.1 or 3.2) but real interest rates are higher.

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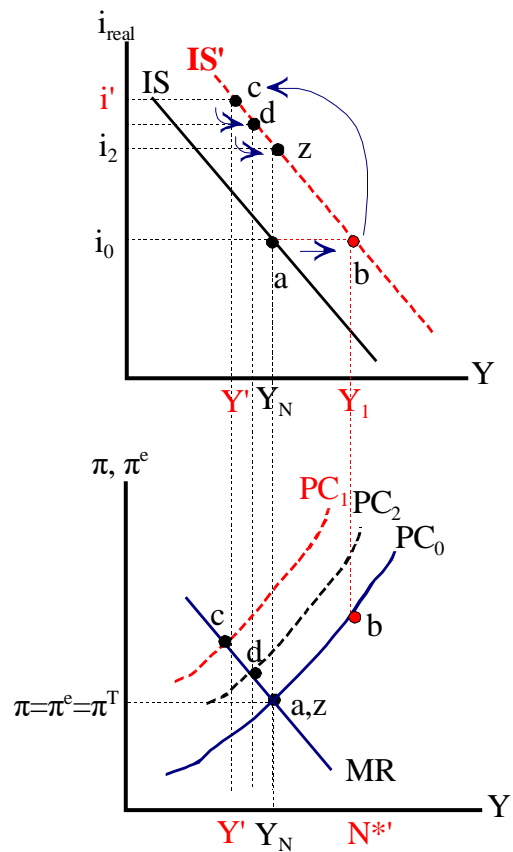
Exam May 2018

Part 1. Explain whether the statements are true, false, or whether it depends. Defend your answer. If depends is your answer, be sure to explain upon what it depends. (25 points)

1.1 Consider the Marshall-Lerner condition and the J-curve effect associated with a devaluation of the local currency. If trade volumes (export and imports) do not react initially to a change in the exchange rate, then the Marshall-Lerner condition to improve the trade balance will not hold and reserves decrease in the short-run.

1.2 A currency crisis is a conflict between domestic and external macroeconomic objectives, particularly when a government must choose a policy response between these objectives.

1.3 A central bank charged with targeting inflation has more discretion (autonomy) in its use of monetary policy. Thus, by targeting inflation rather than the exchange rate, the central bank's policy action is more likely to give rise to conditions that can cause overshooting.

1.4 Interest rate parity occurs when the returns on deposits (investments) of all currencies offer the same expected rate of return. This occurs because interest rates across countries tend to converge.

1.5 A 10 percent depreciation of the local currency would be equivalent, it its overall macroeconomic effect, to a 10 percent tariff across all imported goods.

Part 2. Answer each of the following questions or respond to the specific statements. Relate your answers to concepts discussed in class and avoid unnecessary information! (45 points)

2.1 The *Financial Times* recently reported that there was strong global economic growth ("Times are good now, but the fragility is real", 18 Apr 2018, p. 9). Although growth rates were not as high as during 2003-07, growth in 2017 and the International Monetary Fund's 2018-19 forecasts were higher than in any year since the crisis, except for 2010 and 2011, the years of post-crisis recovery. This, it was argued, "is a time of fragile recovery." Keep this in mind and the information presented in the graph when answering the following:

Unemployment rate and wage growth in advanced economies (%)

2.1.1 *List* factors that affect inflation (4 pts).
2.1.2 *List* factors that affect wages (4 pts).
2.1.3 Explain how inflation and wages are expected to relate to employment (unemployment) – do your expectations match what is presented in the graph? In the explanation, discuss whether there is link between the inflation-wage-employment and monetary policy. Be specific (7 pts).

2.2 On 18 September 2014, Scotland held a referendum on independence from the United Kingdom (UK). Scotland's economic integration with the rest of the UK (England, Wales and Northern Ireland), lasting more than 300 years, involves full economic union and monetary union (comprising a single-currency area that uses the pound sterling). It narrowly voted to remain in the UK. On 23 June 2016, the UK held a referendum to leave the European Union (EU). The UK voted to leave the EU. Suppose that the vote to leave the EU occurred before Scotland's referendum to leave the UK and that Scotland voted to leave the UK as a result. Keep in mind the relationship between monetary union and economic union when answering the following:

2.2.1 Despite its independence, Scotland's central bank decided to continue using the pound sterling as it currency. What would be the advantages/disadvantages of keeping the pound? *List* the criteria one would need to consider to determine whether Scotland remaining in a single currency area with the UK would make sense. Briefly explain why the criteria on your list matters. [Note: Even if you are not familiar with Scotland's actual economy or its relationship with the rest of the UK, focus on the criteria and on what it could/should/might imply.] (10 points)

2.2.2 Think about the type of exchange rate regime this might resemble. Would the lessons of the recent Eurozone experience serve as a relevant model of what could happen if an independent Scotland kept the pound sterling? Explain. (5 points)

2.3 The US and the Eurozone's initial policy response to the 2007 financial crisis (and the subsequent euro crisis) were quite different. For the US, it was linked to mortgage (housing) debt that went bad following the bursting of a bubble. The Eurozone saw it as an issue of excessive government spending (e.g., Greece) and as an overly liberalized and deregulated capital market (e.g., Ireland). As such, the policy responses were different by the central bank and governments. Keep in mind the different role the US central bank has within the US and the European central bank's within the Eurozone when answering the following:

2.3.1 Despite the initial difference in policy responses, unconventional monetary policy became a principal component of the response. Think about the macroeconomic conditions that existed to explain why the policy response was unconventional and why it was necessary. (10 points)

2.3.2 Why was the Eurozone's response so much slower in its implementation (why did it start much later than elsewhere)? Be specific. (5 points)

Part 3. Answer the questions related to the macroeconomic scenario described. Be specific and explain your answers to the best of your ability. Label and explain your graphs clearly. Define concepts you think will support your answer and make any assumptions you have explicit. (30 points total)

3.1 Consider a situation where in a country called Home there is a stock-market boom (that is, there is greater interest among investors in Home's stock market). Use the Mundell-Fleming modeling framework (IS-LM-BP and the AA-DD graphs) and graphs of the related money-market-foreign-exchange (asset) markets to consider the implications of the stock-market boom for Home's domestic macroeconomy and its international transactions. Explain your results. (10 points)

3.2 Think about the macroeconomic effect(s) that the stock-market boom might have for Home in the longer run (longer than what is happening in 3.1). How might the macroeconomy adjust to what happens in response to the boom? (Hint: do not assume that the boom results in a bubble that bursts, creating macroeconomic chaos.) Present the macroeconomic adjustment using an aggregate demand and supply model. Explain your results and make your assumptions clear. (10 points)

3.3 Think about the potential role for macroeconomic policy from the results you obtained under 3.2. Present and explain the macroeconomic situation of 3.2 using the three-equation model (IS-PC-MR). Incorporate the macroeconomic policy in the model if appropriate. In the explanation, make clear any other additional assumptions (10 points).

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Part 1. Explain whether the statements are true, false, or whether it depends. Defend your answer. If depends is your answer, be sure to explain upon what it depends. (25 points)

1.1 Consider the Marshall-Lerner condition and the J-curve effect associated with a devaluation of the local currency. If trade volumes (export and imports) do not react initially to a change in the exchange rate, then the Marshall-Lerner condition to improve the trade balance will not hold and reserves decrease in the short-run.

> D/T. It was important to define Marshall-Lerner condition and J-curve effect. Marshall-Lerner conditions says $\xi^E_{ES} + |\xi^E_{ED}| \geq 1$ – the sum of the elasticities of ES and ED w.r.t. E must be more than one for a devaluation of local currency to improve BOT. The J-curve says that BOT worsens in S-R because (1) P are slow to change, (2) import P change faster than export P in local currency terms and (3) that trade volumes are inelastic in S-R. It is not enough for trade vol to be inelastic. If conditions (1) and (2) also hold, then BOT does worsen in S-R, then reserves position of CB could decrease.

1.2 A currency crisis is a conflict between domestic and external macroeconomic objectives, particularly when a government must choose a policy response between these objectives.

> T. Good to start with definition of macro objectives: (1) domestic, e.g., GDP, employment, low/stable inflation, stable financial mkt; (2) external, e.g., stable E (fixed in this case), manageable external debt. A currency crisis arises when a country's BOP is not in eqlbm, i.e., BOP = 0 = BOT – net K acct - ΔR not maintained. This happens when a trade deficit (–BOT) cannot be financed from K-inflows or foreign exchange reserves. The –BOT [external imbalance] = $(S^P$-I) - (G-T) [internal imbalance] – implying $\uparrow$ (I>S) and/or (G>T). The crisis arises when the currency comes under speculative attack because of the underlying fundamentals cannot be supported (net K-outflows and dwindling reserves). It is associated with fixed exchange regimes, which means gov't can either maintain the fix or make currency more flexible and apply macro policy to deal with domestic imbalances.

1.3 A central bank charged with targeting inflation has more discretion (autonomy) in its use of monetary policy. Thus, by targeting inflation rather than the exchange rate, the central bank's policy action is more likely to give rise to conditions that can cause overshooting.

> F. It is true that a CB charged with targeting inflation has more discretion (freedom) in its use of MP. However, by targeting inflation rather than E, the CB's policy action is more transparent and predictable, which should have less of an effect on expectations. Overshooting is a direct result of changes in expectations. A responsible CB charged with targeting inflation should lower shocks coming from changes in expectations. The point is if the CB is successful in meeting its inflation target, it reduces changes of expectations on inflation.

1.4 Interest rate parity occurs when the returns on deposits (investments) of all currencies offer the same expected rate of return. This occurs because interest rates across countries tend to converge.

> F. Interest-rate parity does imply that returns on lc, fc assets are the same when converted into a common currency, but this does not occur because interest rates tend to converge across countries – it happens because E rates change (the futures rate of E adjusts to bring returns on lc and fc assets in line). Recall interest parity: $i_H = [i_F] + ([E_{lc/fc}]^e – E_{lc/fc})/E_{lc/fc}$. Interest rates do not converge, ΔE is mechanism by which returns are equalized.

1.5 A 10 percent depreciation of the local currency would be equivalent, it its overall macroeconomic effect, to a 10 percent tariff across all imported goods.
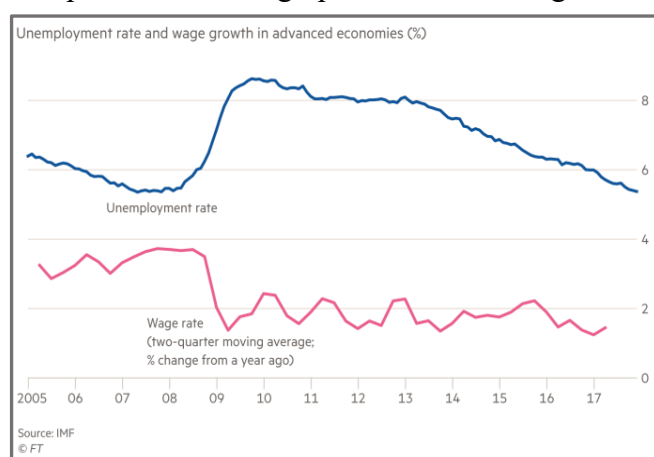
> F. A lc depreciation has an equivalent effect as an import tariff *and* an export subsidy. Thus, the full effect of the ΔE is a 10% $\uparrow P$ of import and exports. If trade is a big share of GDP, then its overall effect is $\uparrow E = \uparrow P_H/P_F$, where P_H is affected by $\uparrow P$ exports and imports.

Part 2. Answer each of the following questions or respond to the specific statements. Relate your answers to concepts discussed in class and avoid unnecessary information! (45 points)

2.1 The *Financial Times* recently reported that there was strong global economic growth ("Times are good now, but the fragility is real", 18 Apr 2018, p. 9). Although growth rates were not as high as during 2003-07, growth in 2017 and the International Monetary Fund's 2018-19 forecasts were higher than in any year since the crisis, except for 2010 and 2011, the years of post-crisis recovery. This, it was argued, "is a time of fragile recovery." Keep this in mind and the information presented in the graph when answering the following:

2.1.1 *List* factors that affect inflation (4 pts).

| Supply	Demand	Policy
* $\uparrow$ P of key inputs * neg effect on value/supply chain	* $\uparrow$ AD without Δ AS (C,I,G, X)	* Expansionary FP or MP * E intervention
Previous period inflation; Δexpectations Deviations of Y from Yn, output gap		

Unemployment rate and wage growth in advanced economies (%)

2.1.2 *List* factors that affect wages (4 pts).

Labor Supply	Labor demand	Policy
* number of workers; level of unemployment * mobility of labor * bargaining power of workers * union strength * skills, ed, experience	* bargaining power of firms relative to labor * control over output price in product/service mkt * K relative to labor * prodvty of labor * inflation/real wage	* employment policy (hire/fire) * unemployment benefits * min wage * tax policy * pension scheme
Price setting	Wage setting	

2.1.3 Explain how inflation and wages are expected to relate to employment (unemployment) – do your expectations match what is presented in the graph? In the explanation, discuss whether there is link between the inflation-wage-employment and monetary policy. Be specific (7 pts).

> Theory: An $\uparrow$ employment > N* $\rightarrow$ $\uparrow$ W. If P are slow to change, then W/P can $\uparrow$ > [W/P]*. Otherwise, N > N* $\rightarrow$ $\uparrow$ W $\rightarrow$ $\uparrow$ P. Actual: Until about 2011, what the chart shows is consistent with the theory: higher wages correspond with low unemployment (before 2009); falling wages with higher unemployment (2009-10).
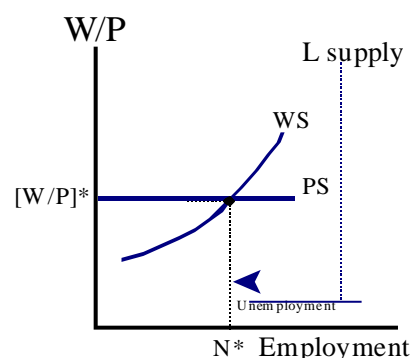
> In around 2013, there is a ↓ trend in unemployment rate (↑ employment), yet wages are not *yet* increasing. This is not consistent with what is generally expected. This might be due to L-related structural factors and that having come out of a great recession workers have not yet been ready to push for higher W. The low inflation (deflation) we have had might be another factor. Higher P, P^e should lead to higher W demands. It is here where MP has a relevant role and implications for growth.

2.2 On 18 September 2014, Scotland held a referendum on independence from the United Kingdom (UK). Scotland's economic integration with the rest of the UK (England, Wales and Northern Ireland), lasting more than 300 years, involves full economic union and monetary union (comprising a single-currency area that uses the pound sterling). It narrowly voted to remain in the UK. On 23 June 2016, the UK held a referendum to leave the European Union (EU). The UK voted to leave the EU. Suppose that the vote to leave the EU occurred before Scotland's referendum to leave the UK and that Scotland voted to leave the UK as a result. Keep in mind the relationship between monetary union and economic union when answering the following:

2.2.1 Despite its independence, Scotland's central bank decided to continue using the pound sterling as it currency. What would be the advantages/disadvantages of keeping the pound? *List* the criteria one would need to consider to determine whether Scotland remaining in a single currency area with the UK would make sense. Briefly explain why the criteria on your list matters. [Note: Even if you are not familiar with Scotland's actual economy or its relationship with the rest of the UK, focus on the criteria and on what it could/should/might imply.] (10 points)

Advantages	Disadvantages
Micro in nature – related to econ integration and lower transactions costs	Macro in nature – loss of policy to intervene in currency mkts (using E as trade or macro policy); limits on MP and constraints on FP

Theoretical criteria for an optimal currency area:
* Free trade   * Mobile and integrated K, L mkts
* Symmetrical shocks   * Fiscal transfers

During the union, there was +300-year history of being in the union with fully free trade in goods/services, high mobility of L, K and same language, culture and history linkages (for good and bad); shocks might have been asymmetric, but London could provide some fiscal transfers in the event some shock affected England differently than Scotland.
With independence, much of this could continue, except for fiscal transfers. To some extent, the need for fiscal transfers lessens when there is free trade and when mobile and integrated L, K mkts exist. Depends on what you say/assume here. The point was to let the criteria guide your discussion.

2.2.2 Think about the type of exchange rate regime this might resemble. Would the lessons of the recent Eurozone experience serve as a relevant model of what could happen if an independent Scotland kept the pound sterling? Explain. (5 points)

Depends on what was argued – the point was to relate the Eurozone crisis to how it could related to Scotland.
If Scotland left the UK and kept the pound, then the exchange regime would be a strong fix. It could resemble *dollarization* whereby Scotland adopts the pound for all its legal transactions, or it could be set up as a *currency board* without a local currency existing in parallel. Dollarization would be more like adopting a foreign currency as some Latin

American countries have done with the US dollar. In either case, Scotland would have little to no control over MP and would be somewhat limited in what it could do in terms of FP. It would also have less of a role over lender of last resort to stabilize banks in a crisis. The lesson of the Eurozone would have relevance for Scotland under this consideration (e.g., financial stabilization). The UK, like the Eurozone, would be unwilling to bail Scotland out if Scotland ran into a financial crisis – it would be Scotland's unilateral choice to keep sterling. MP would be determined in London and Edinburgh would have to take interest rates as given. Unlike the ECB, it is probably not the case that the UK's central banker would take the necessary steps to buy Scottish debt to stabilize the sterling zone. If the criteria listed in 2.2.1 would no longer hold in the longer run, then such a monetary/exchange rate arrangement would make less sense.

2.3 The US and the Eurozone's initial policy response to the 2007 financial crisis (and the subsequent euro crisis) were quite different. For the US, it was linked to mortgage (housing) debt that went bad following the bursting of a bubble. The Eurozone saw it as an issue of excessive government spending (e.g., Greece) and as an overly liberalized and deregulated capital market (e.g., Ireland). As such, the policy responses were different by the central bank and governments. Keep in mind the different role the US central bank has within the US and the European central bank's within the Eurozone when answering the following:

2.3.1 Despite the initial difference in policy responses, unconventional monetary policy became a principal component of the response. Think about the macroeconomic conditions that existed to explain why the policy response was unconventional and why it was necessary. (10 points)

Traditional MP operates thru i-rates (open mkt operation) which affects borrowing costs, E and the price of financial assets. With deflation, MP breaks down: $\downarrow P \rightarrow \uparrow [MS/P]$ which is met by more $\downarrow$ AD. Deflation $\rightarrow \downarrow$ AD $\rightarrow \downarrow$ P and Q,Y. MP is useless. Unconventional MP involves negative i-rates and printing money to buy assets on a large scale, QE, to support financial mkts and institutions. It is necessary to increase liquidity, expand credit, lower i and facilitate borrowing/lending to break the cycle and provide financial stability during the crisis period.
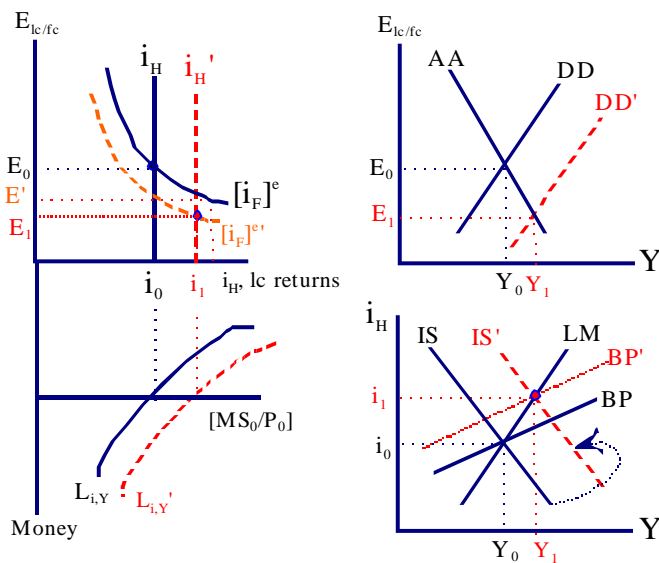
2.3.2 Why was the Eurozone's response so much slower in its implementation (why did it start much later than elsewhere)? Be specific. (5 points)

Not seeing the problem as a financial crisis, the response was to let national gov't deal with the recession (Ireland) and to impose austerity (FP tightening, primarily Greece but Ireland as well). Traditional MP was not possible. Although, the ECB was the only institution capable of acting, but did not have the authority to use QE. There is a no bailout clause in the EU treaties, which prevents or limits the purchase of government or firms' assets. Any action required new institutions, which take time, newly defined roles, which might take changes in treaty, or careful interpretation of MP by the ECB to ensure that the actions that it took (asset purchases) were to ensure one i-rate for whole of the Eurozone rather than bail-outs of bad debt.

Part 3. Answer the questions related to the macroeconomic scenario described. Be specific and explain your answers to the best of your ability. Label and explain your graphs clearly. Define concepts you think will support your answer and make any assumptions you have explicit. (30 points total)

3.1 Consider a situation where in a country called Home there is a stock-market boom (that is, there is greater interest among investors in Home's stock market). Use the Mundell-Fleming modeling framework (IS-LM-BP and the AA-DD graphs) and graphs of the

related money-market-foreign-exchange (asset) markets to consider the implications of the stock-market boom for Home's domestic macroeconomy and its international transactions. Explain your results. (10 points)
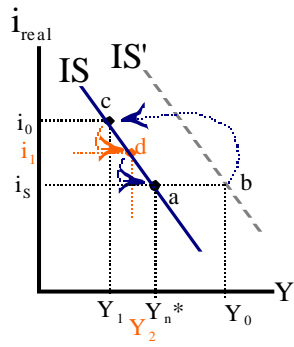

Elexible E regime with relatively mobile K. Stockmkt boom → ↑ K-inflows. Increased interest in lc assets relative to fc assets, $[i_F^e]$ shifts down and K-inflows represent ↑D for lc assets and strengthens lc value, ↓E. There is a wealth effect from the ↑ stockmkt value which makes firms and households (which have assets) feel richer. There is an ↑C, I and shifts in DD and IS curves. In short term, there is an increase in output. The ↑E worsens the BOT (↓X-M) which shifts IS back to some degree and shifts BP left. Prices are slow to change and are held constant here.

3.2 Think about the macroeconomic effect(s) that the stock-market boom might have for Home in the longer run (longer than what is happening in 3.1). How might the macroeconomy adjust to what happens in response to the boom? (Hint: do not assume that the boom results in a bubble that bursts, creating macroeconomic chaos.) Present the macroeconomic adjustment using an aggregate demand and supply model. Explain your results and make your assumptions clear. (10 points)
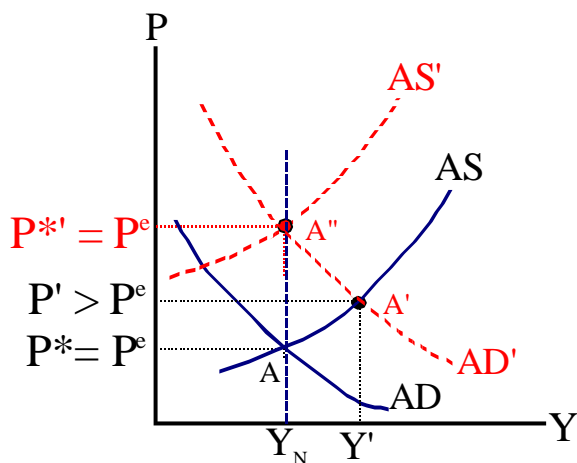

The stockmkt boom in 3.1 cause a short-run increase in output, Y_1. The increase in output could be considered an ↑ AD without any sort of change in AS (no ↑ prodvty or change in cost of prodn assumed). The scenario shows an increase in output and employment: ↑Y → ↑ N > N* → ↑ W → ↑ P, P^e. More employment causes higher wages and prices. Initial eqlbm at pt A, followed by eqlbm A' from ↑ AD and Y. P slow to change, P' > P^e. Expectations change and AS shifts right as ↑P^e occurs, restoring eqlbm at A''.

3.3 Think about the potential role for macroeconomic policy from the results you obtained under 3.2. Present and explain the macroeconomic situation of 3.2 using the three-equation model (IS-PC-MR). Incorporate the macroeconomic policy in the model if appropriate. In the explanation, make clear any other additional assumptions (10 points).

i_{real}

IS IS'

i_0
i_1
i_s

c
d
a
b

Y
Y_1 Y_n* Y_2 Y_0

π

$PC_1(\pi_1 = \pi_2^e > \pi^T)$
$PC_2(\pi_2 = \pi_3^e > \pi^T)$
$PC_0(\pi_0 = \pi_1^e = \pi^T)$

π_0
π_1
π_2
π^T

c
d
b
a

MR

Y
Y_1 Y_n* Y_0

The ↑AD shifts IS curve → ↑ y_{real} (movement of eqlbm from pt a to b in top panel) and ↑P (movement of eqlbm from pt a to b in bottom panel). The ↑ y_{real} without corresponding ↑ AS → ↑ P, P^e. PC shifts up. CB raises i-rate to reduce Y and P, P^e. This happens until Y is restored at Y_n where there is no further pressure on inflation and P^e is at CB's desired rate along the MR.
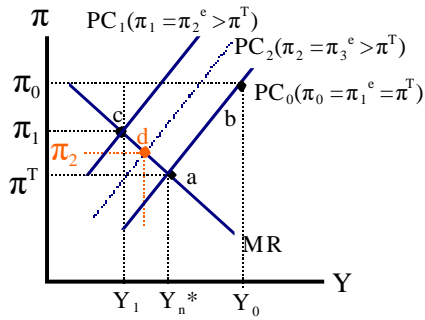
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Part 1. Explain whether the statements are true, false, or whether it depends. Defend your answer. If depends is your answer, be sure to explain upon what it depends. (25 points)

1.1 A nation becomes richer as its balance-of-trade surplus grows; therefore, it makes sense for the country's macroeconomic policies to be aimed at achieving a trade surplus.

1.2 The collapse of the Bretton Woods fixed exchange rate regime in 1973 to a floating exchange rate system means that the theory of purchasing power parity is now of greater interest to macroeconomics researchers.

1.3 A decrease in Home's real money demand (assuming no change in income) would imply a change in investors' expectations on earnings on foreign-currency assets when converted in local currency because returns from local-currency assets would be lower.

1.4 If economic shocks are most likely to affect output markets (i.e., changes in goods market equilibrium), then a country's macroeconomic performance would be affected to a greater extent, on average, under a fixed rather than a flexible exchange rate regime.

1.5 Inflation targeting is a transparent monetary policy strategy whereby central banks seek to maintain prices at a specified target using only instruments that must be approved by the government.

Part 2. Answer each of the following questions or respond to the specific statements. Relate your answers to concepts discussed in class and avoid unnecessary information! (45 points)

2.1 William Phillips was the first to plot the relationship between unemployment and wage growth in 1958. The relationship, known now as the Phillips curve, plotted data for the UK from 1861 to 1957, suggesting a stability despite the enormous macroeconomic changes that occurred over that period. Think about unemployment (or employment) and wages and factors that may have affected the stability in the relationship when answering the following:

2.1.1 Consider the chart plotting the relationship between unemployment and wage growth in the UK since the 1970s. How do these data match up with what is expected from the Phillips curve? Be specific and relate your answer to the "non-accelerating inflation rate of unemployment" concept. (10 pts)

Britain, relationship between unemployment and wage growth

Quarterly plots • 1971-97 • 1998-2012 • 2013-18*

Wages[†], % change on a year earlier

Unemployment rate, %

Sources: ONS; Bank of England; The Economist   *To Q2   [†]Nominal

2.1.2 What might the data suggest about the rate of productivity and worker's bargaining power during 2013-18? Explain your answer. (5 pts)
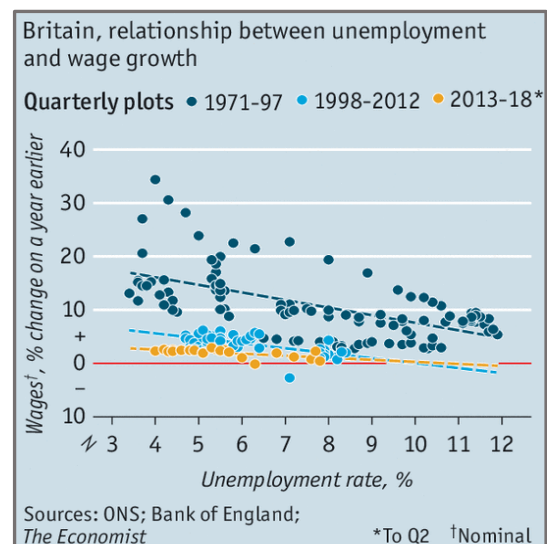
[*Economist*, "The labour market", 8 Sep 2018, p. 26-7.]

2.2 Domestic macroeconomic imbalances are linked to international markets in goods and services and capital. Think about the role of financial capital and debt in the domestic macroeconomic imbalances from persistent trade deficits when answering the following:

2.2.1 How would macroeconomic imbalances by households, firms and government differ in terms of their implications for the country's balance of payments, the foreign exchange regime and central bank independence? Explain in terms of the type of financial capital that is likely to be used to finance the imbalances. (10 pts)

2.2.2 Does it matter whether the borrowing and the resulting debts are owed in a foreign currency? Explain. (5 points)

2.3 Central banks might intervene in the foreign-exchange market to address domestic policy concerns, e.g., inflation or deflation, employment and wages, GDP growth rates, investment, consumption and trade. Keep in mind these policy concerns or objectives (and the state of a country's macroeconomy) when answering the following:

2.3.1 Central bank intervention to lower the value of the local currency is easier than raising the value of the local currency. Explain whether you agree/disagree with this statement. (5 pts)

2.3.2 *List* factors that could lead to the strengthening of the value of the local currency in the short run. In the longer run, economic fundamentals would have to justify the strengthening of the local currency. How would the economic fundamentals have to change for the currency to strengthen in the longer term? Explain carefully. (10 pts)

Part 3. Answer the questions related to the trade scenario described. Be specific and explain your answers to the best of your ability. Label and explain your graph(s) clearly. Define concepts you think will support your answer and make any assumptions. (30 points)

Some governments of emerging market economies protested that quantitative easing (QE) by the central banks of Japan, the US, UK, and euro-zone had macroeconomic consequences for them on trade of goods and services and capital market transactions through the exchange rate. In Indonesia, for example, the current account (balance of trade), after 14 years of being in surplus, went into a deficit of 2.7% of GDP in 2012. Between May and July of 2013, that gap widened to 4.4% of GDP (*Economist*, "Indonesia's economy: slipping", 24 Aug 2013).

3.1 Use the Mundell-Fleming modeling framework developed in class to help you illustrate what is described in the scenario above related to QE's effect on Indonesia's general macroeconomy in terms of the level of output, national income, prices, interest rates, and the foreign exchange market and exchange rates. [Note: you are asked to show the effects of QE from the perspective of Indonesia's macroeconomy.] (10 pts)

3.2 Suppose that one political response to the situation above included a government promise to tackle the country's creaking infrastructure. In addition, there was a fall in world commodity prices, which was important to Indonesia's economy, and that it led to the government tolerating a rise in "economic nationalism" in key sectors. That is, its policies put restrictions on the share of local business that foreigners could own, or required that foreign companies had to refine or process Indonesia's minerals, such as copper, when they extracted them, rather than simply exporting unrefined ores and concentrates. These policies coincided with the US central bank's announcement of an end of its QE program.

Explain how the new information and the end of QE might affect Indonesia's balance of payments and domestic macroeconomy. *List* other relevant factors one might consider. (10 pts)

3.3 Think about what QE involves and why it is considered an unconventional form of monetary policy. Would implementation of QE pose a bigger challenge for the European Central Bank relative to the central banks of the US, UK or Japan? Explain. (10 pts)

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1.1

> F. Increasing BOT does increase nat'al income, Y = C+I+G+(X-M). However, it should not be a policy target to increase (X-M). Focusing on (X-M) ignores or constrains other policy objectives related to C, I and G.

1.2

> T. The B-W exchange rate regime system was a fixed E regime. The theory of PPP implies that the exchange rate is related to the ratio of relative CPIs between countries. Under a fixed regime, K-controls tend to be more important to help reduce the effect of K flows on E. Under a flexible E regime both changes in the price of goods and K-flows important factors for E can changes in E. As a result, K-flows can help E to deviate from its PPP value in the short and longer run.

1.3

> [F] A decrease in real money demand (assuming not change in income) would cause i-rates to decrease and the value of the local currency to fall r.t. fc. However, it would not necessarily change the expectations on asset earnings. To keep earnings in lc terms the same after a decrease in the i-rate, the E would have to increase.

1.4

> [T] If economic shocks are more likely to affect output markets, then mkt changes more directly affect volume and prices of goods which in turn more directly affect the exchange rate. Think about the role of K flows under fixed E regimes. When K flows are more mobile, the K can move across borders in response to a shock.

1.5

> [F] Inflation targeting is a transparent MP strategy – gov't defines target, but the CB has discretion to use MP instruments as it sees fit and it is held to account if/when the target is not met. The independence of the CB is related to having this discretion.

2.1

> 2.1.1 Relate PC to the other concepts
> 2.1.2 Explain why wages might have decreased in 1990s and 2000s even at low rates of unemployment.

2.2

> 2.2.1 Discuss debt and how it relates to HH, firms, financial firms and government
> 2.2.2 Debt is a bigger issue when it is owed to foreigners and in foreign currency.

2.3

> 2.3.1 CB intervention to lower the value of lc is easier. CB has a monopoly over creating money.
> 2.3.2 Selling foreign exchange assets and buying own currency; higher interest rates, change in expectations, reduce inflation; long-term supply-side policies. In the L-T, a stronger currency depends on economic fundamentals. To have a stronger E, countries need a combination of low inflation, productivity growth, cut cost of production, privatization or cutting regulations to help export industry become more competitiveness, economic and political stability.

3

> 3.1 K-inflows, reduction in BOT
> 3.2 K-outflow, decrease in K-inflows; expectations; worsening of TOT
> 3.3 Define QE, QE is about buying debt by CB; in Eurozone, the debt bought is political and gov't objective to ECB actions undermines MP independence