CORRECTION MANUAL (inserted with red coloured writing)

Written Exam for M.Sc. in Economics autumn 2012-2013

The Economics of the EU

Master's Course

17 December 2012

(3-hour closed book exam)

Please note that the language used in your exam paper must correspond to the language of the title for which you registered during exam registration. I.e. if you registered for the English title of the course, you must write your exam paper in English. Likewise, if you registered for the Danish title of the course or if you registered for the English title which was followed by "eksamen på dansk" in brackets, you must write your exam paper in Danish.

If you are in doubt about which title you registered for, please see the print of your exam registration from the students' self-service system.

The answers to the questions enter with the following weights:
Question 1: 75%
Question 2: 25%

Question 1 The importance of divergence for the functioning of the European Union
EU is constituted of 27 different Member States and a range of EU institutions with different roles vis-à-vis these Member States. In this question you are asked to analyse the importance of various economic differences for the functioning of the European Union.

Subquestion 1.a
Figure 1 (attached) shows the development of the HICP (Harmonised Index of Consumer Prices) of the European Union. Describe the development of the HICP from 1996 to 2012 as shown in the upper-right hand corner for Figure 1.

- Fluctuations between 1 and 3% except for 2008 and 2008.
- Otherwise "stable" around 2% especially in period after the EMU.
- Elements of importance in this period:
    - 1990's – after TEU – influenced by convergence criteria that inflation could be no more than 1,5% than average of three lowest inflation rates among EU Member States.

    - 1997: Stability and Growth Pact.
    - 1999: Creation of the EMU.
    - 2002: National currencies ceased to exist.
- Before the EMU, the Member States were demanded to provide evidence that they had at least as low inflation as Germany.
- After the implementation of the EMU, the monetary strategy of the ECB has been to maintain inflation below 2% until 2003/4 whereafter the aim has to be to maintain inflation close to 2% until the financial crisis.

Subquestion 1.b.
Analyse the theoretical impact of the European Monetary Union on inflation and unemployment for Member States with different initial equilibrium inflation levels.

- Use for instance, De Grauwe Chapter 7, section 7.2 on "Why inflation convergence"
    - Figure 7.1 on the inflation bias in the monetary union – Barro – Gordon – should be included in the analysis.
    - A decription / comparison of efficiency gains / welfare consequences should be included.
    - There should be a description of the concept of hard-nosed and wet governments as presented in chapter 2, 40-48.
    - A graphical illustration of the Barro Gordon model should be included.
    - There should be a mentioning of the Barro Gordon model in open economics.

Subquestion 1.c.
Analyse the impact of the European Central Bank on the development of the level of inflation in the Euro area as you described in subquestion 1.a.

Description:
- First step is a description of the monetary strategy – e.g. De Grauwe Chapter 9.
- Both as regards ultimate targets and intermediate targets.
- As ultimate target, ECB has price stability to be achieved over the medium term.
- Until 2003 the target was defined as a year-to-year increase in the HICP for the euro-area of below 2%, from 2003 clarified to "close to 2%" to avoid deflation.
- Two pillars to achieve this targit:
    - Monetary pillar – money equation and focus on M3, finds growth rate of money stock consistent with future trend growth of GDP and forecast of future velocity of money.(m3 used by ECB as relevant money stock definition). The money stock "goal" is a reference value not a targit according to the ECB.
    - Second pillar – economic pillar – includes a number of variables with information on future inflation.
    - Thus ECB achieves ultimate targit by focusing of different variables – and as the most prominent intermediate targit the growth rate of M3.
- In evaluating this strategy one must admit that the ECB has been quite succesful in achieving this targit.
- The problem however is that in targeting inflation as the only targit, this is a strategy that only will make output targeting unnesessary in case of demand shocks. In this case (e.g. figure 9.11, page 186), when the ECB targits the price level, it will tend to reduce agregate demand, thereby lowering the price level, at the expense of an even lower output level.

- Gradual transition to inflation targeting possible af a shock and allows to also pay attention to output stabilisation.
- Question could also include the question of trade off between financial and price stability as perspective.

Subquestion 1.d.
Can the budget convergence requirements of the Stability and Growth Pact be rationalised in a way similar to the inflation convergence requirement of the Maastrict Treaty?

- Use the Grauwe, p. 137-139.
- According the Barro-Gordon model (could be illustrated by the student).
- A monetary union between a high debt and a low debt country, creates a problem for the low debt country that is confronted with a partner with tendency to push for more inflation.
- As a long as a country has higher debt to GDP, it will have an incentive to create surprise inflation.
- Thus low debt country will have incentive to insist that high debt country reduces debt before entering a monetary union.
- In order to achieve this, the high debt country must reduce deficit.
- Also use of equation d=gb, where d is government budget deficit, b is the steady state level at which the government debt is to be stabilised and g is the growth rate of GDP.

Subquestion 1.e.
Analyse whether there is a potential conflict between the inflation criterion of the Maastrict Treaty and the requirement for joining the ERM-II, where the scope to use the exchange rate as instrument?

- De Grauwe section 7.4 and primarily 7.5 page 145-147. Especially, one could fear potential conflict from theory of Balassa Samuelson (both chapter 2 and chapter 7) on impact of higher productivity growth in tradeable sector leading to structurally higher inflation.
- Student should preferably delineate the main parts – possibly also equations of the theory – e.g. equation 7.7. and 7.12 or more.
- Explanation why inconsistency is softened because of inflation convergence requirements with a margin on 1,5% and the movement of exchange rate within a band.
- Band +/- 15 % in ERM-II i.e. a range of 30%.
- Members not allowet to devaluate but actually they are allowed to revaluate.
- So with band wide enough B-S problem should not lead to insurmountable problems and conflicts with inflation criterion.

Subquestion 1.f.
Analyse the importance of divergences in industrial structures among the EU Member States from 1973 – 1997 including in your analysis Figure 2 (“table 1”). The index takes the value zero if the industrial structure of the country is identical to that of the EU and the index values are higher the more different the structures are.

- Countries became lesse specialised from 70/73 to 80/83.
- Over the whole period the EU countries have complying with theory become more specialised with more EU integration.
- Only country becoming less specialised is the Netherlands.

- The bright scholar may also see that if you devide the table into groupings according to when they became members of the EU, the core six has a steady increase in specialisation (except againg for the Netherlands) in the whole periode, whereas the other groups recognizes an increase in specialisation after they became members of the EU.
- As regards the question – which focuses on the importance of these differences – the angle that is preferred – is that the student – hereafter draws the attention to the consequences of more specialisation in terms of the Optimum Currency Areas.
- The Krugman and Commission view on specialization should be delineated and it would be a good idea to illustrate the to views in a standard OCA diagram for instance showing symmetry and trade integration on respectively the Y and X axis.
- One could also talk about the difference between specialization developments when it comes to intra and interindustry trade. More integration leads to more specialisation when we predominantly have interindustry trade pattern where as the result is ambiguous when it comes to intra-industry trade, only leading to more specialization when we have economies of scale.

Question 1.g.
Analyse the theoretical impact according to the Optimum Currency Area theory of increased mobility of labour. Describe the challenges of the European Union in this regard using the comparison of mobility of labour between the United States and the European Union as shown in figure 3 ("table 1").

- First of all, OCA predicts that the more mobility of labour a potential MU-area has among its member states the more optimal it becomes.
- This relates to the loss of the monetary policy instrument where mobility of labour will be able to offset the effects of asymmetric shocks on the members.
- Shown in a cost benefit diagram as in De Grauwe – chapter 4.2, figure 4.3 page 75, an increase in labour mobility (or a decline in wage rigidities) shifts the cost line downwards, and the breakeven point of a country in terms of when it is advantageous to join a monetary union is reached earlier.
- Countries that experience a lot of asymmetry in output and employment growth need much flexibility in the labour markets if they want to benefit from a monetary union and avoid major adjustment problems.
- As regards the US, we are of course not sure that they form an optimum currency area, but we assume so.
- The major difference between the EU and the US is exactly the degree of labour market flexibility.
- As shown in figure 3 labour market mobility is higher in the US than in the EU.
- Similarly there is evidence that real wages respond less to unemployment in Europe than in the US.
- One would also have to look at the organization of labour unions across the EU if one wants to adress this issue in the future.

Question 2 Welfare effects of a customs union

Analyse in general and in detail the theoretical effects of a customs union as shown in Figure 4 below.

- General effects: as described in Baldwin & Wyplosz figure 5.7 and section 5.2.2 and detailed effects as described in B & W figure 5.8.

Figure 1 Development of the HICP

Table 1 How different are countries from the rest of the EU?

	70/73	80/83	88/91	94/97
Austria	0.314	**0.275**	0.281	0.348
Belgium	**0.327**	0.353	0.380	0.451
Denmark	0.562	**0.553**	0.585	0.586
Spain	0.441	**0.289**	0.333	0.338
Finland	0.598	**0.510**	0.528	0.592
France	0.204	**0.188**	0.207	0.201
G. Britain	0.231	**0.190**	0.221	0.206
Germany	0.319	**0.309**	0.354	0.370
Greece	**0.531**	0.580	0.661	0.703
Ireland	0.701	**0.623**	0.659	0.779
Italy	**0.351**	0.353	0.357	0.442
Netherlands	**0.508**	0.567	0.547	0.517
Portugal	0.536	**0.478**	0.588	0.566
Sweden	0.424	**0.393**	0.402	0.497
Weighted average	0.326	**0.302**	0.33	0.351

Figure 2 “Table 1” Divergence of industrial structures to the rest of the EU

Table 1 – Comparison between the EU and the US, 2008

	US	EU-27	EU-15	CEECs
Share of working age residents who moved from a different region of the EU/US state	2.80%	1.21%	1.46%	0.38%
Share of working age residents who moved from a different region/state of the same country	2.80%	1.03%	1.26%	0.24%
Share of working age residents who moved from a EU country/US state	2.80%	0.18%	0.20%	0.14%
Share of working age residents who moved from outside the EU/US	0.74%	0.19%	0.23%	0.03%

Source: Eurostat, US Census Bureau, DG REGIO calculations

Figure 3 ”Table 1” Comparison of labour mobility EU and the US

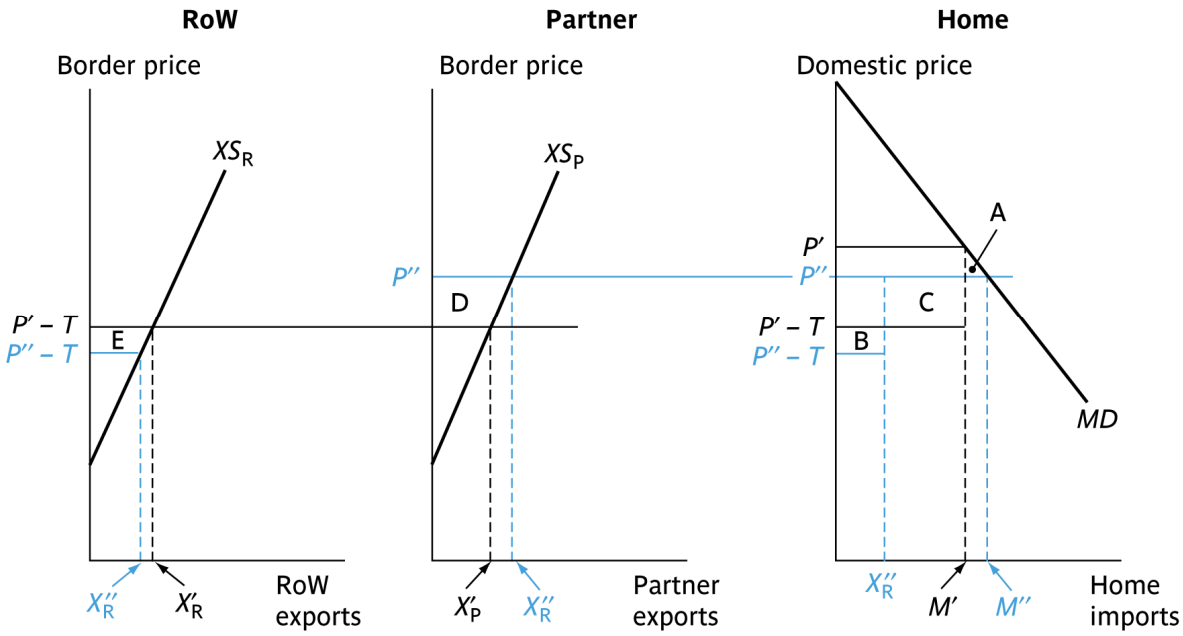

Figure 4 Welfare effects of a customs union