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BUSINESS AND CONSUMER SURVEYS

PERCEPTIONS OF COMPETITIVENESS IN EURO-AREA MANUFACTURING

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SUMMARY

Measures of international competitiveness of a country are usually based on price and cost differentials vis-à-vis trading partners. Such measures are, however, subject to some weaknesses since other characteristics of goods apart from prices, such as quality, might be important in trying to explain export performance. This note takes another look at competitiveness by using data on self-reported perceived competitiveness of euro-area firms within manufacturing industry. Perceived competitiveness is then compared to the traditional measures. Also, perceptions in different sectors within manufacturing are examined.

Developments in perceived competitiveness have varied significantly across euro-area countries and sectors. Perceptions in low-tech industry, which make up almost half of total manufacturing in the euro area, have deteriorated most, but during the last five years almost all sectors have suffered. In general there is a strong link between perceived competitiveness and the relative cost measures, despite the limitations of the latter measure. A plausible interpretation of this result is that the competitiveness of euro-area firms to a high extent is determined by relative costs. The most striking exceptions are Spain and Greece, where perceptions are much more optimistic about the competitive position than pure cost measures suggest.

1. INTRODUCTION

The most popular measures of international competitiveness of a country are based on price and cost differentials vis-à-vis trading partners. In macroeconomic analysis, trade-weighted nominal exchange rates are typically deflated by different price or cost measures, such as consumer prices, export prices, or unit labour costs.¹ Such measures are, however, subject to some drawbacks since other characteristics of goods (apart from prices/costs), such as quality, might play an important role in explaining a country's competitiveness or export performance. Furthermore, a country's specialisation in certain products (or markets) can be expected to be rather rigid and therefore, in the short term, not very sensitive to relative costs.² Despite their shortcomings, empirical findings suggest that standard measures of price or cost competitiveness often explain a relatively large part of export performance.³ Nevertheless, a significant part cannot be explained by relative cost measures, and in particular for some countries there seems to be only a weak correspondence between relative costs and export performance.

This study takes another look at competitiveness by using data on self-reported perceived competitiveness of euro-area firms within manufacturing industry. The Business and Consumers Survey Database of the European Commission (BCS⁴) contains quarterly data on managers' perceptions of their competitive position. More specifically, the managers are asked how their competitive position on foreign markets *outside* the EU has developed over the past 3 months. The possible responses are "improved", "remained unchanged" or "deteriorated". Since BCS data can be expected to cover overall competitiveness, rather than only cost competitiveness, the data possibly contain additional information that could explain the performance of exports.

The BCS database contains two additional questions on competitiveness. Managers are also surveyed regarding their perceived competitiveness vis-à-vis countries *within* the EU and regarding their perceptions of the competitive positions on the domestic market. Our main interest is, however, to compare the competitiveness of the EU and of individual Member States, vis-à-vis countries *outside* the EU, so these two questions are only briefly considered.

The outline of this study is as follows. First, recent developments in perceived competitiveness regarding the domestic market, within the EU and outside the EU, are highlighted. Limiting the scope to only considering competitive position outside the EU, we proceed by presenting developments in perceptions of competitiveness in different sectors in manufacturing and by comparing developments in perceived competitiveness with price competitiveness. Finally, some concluding remarks and possible directions for future work are discussed.

2. RECENT DEVELOPMENTS IN PERCEIVED COMPETITIVENESS

Perceptions are measured here as net balances, i.e. the number of respondents which have answered "improved" minus the number of respondents that have answered "deteriorated" to the questions on their competitive position. In order to show the perceived *level* of competitiveness at a certain time, the net balances are cumulated.

Graph 1 displays the developments in perceived competitiveness on the domestic market, the EU market and the market outside EU for the euro area as a whole. Between 1994 and 2001 managers'

¹ Lall (2001) provides an overview on the concept of competitiveness in a structural perspective.

² According to standard trade theory the inelasticity of prices is not likely to hold in the long term since a country's ability to produce at relatively lower costs determines its product specialisation.

³ See e.g. Carlin et al.(2001). Another more recent study for the euro area only is ECB (2005).

⁴ For more details, see

http://europa.eu.int/comm/economy_finance/indicators/businessandconsumersurveys_en.htm

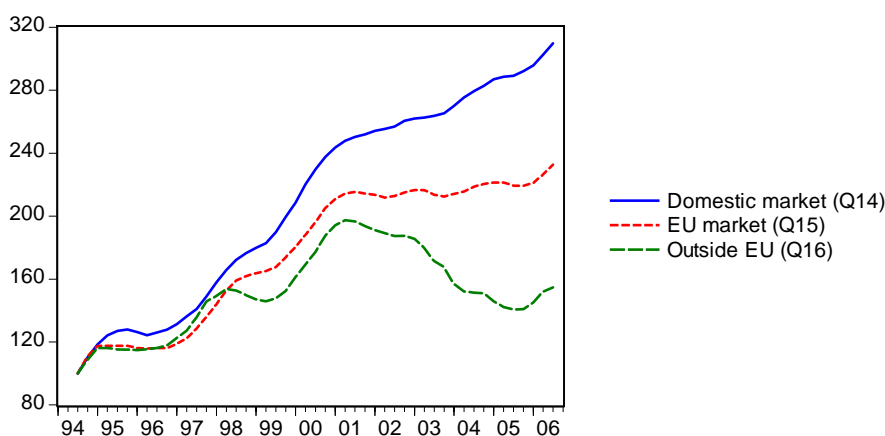
perceptions improved more or less continuously on all markets. However, since the beginning of 2001 perceptions vis-à-vis the different reference markets have diverged significantly. For the more distant reference market the perceptions have been relatively gloomier. This is a general pattern in the sense that it holds not only for the euro-area aggregate but also for a vast majority of the individual countries.

The manager's assessment of their competitive position on their *domestic market* has continued to improve considerably. This trend of a steadily improved competitive position on the domestic market is quite surprising. Due to globalisation, economic reasoning would a priori suggest a harsher competition also on the domestic market. A possible explanation for the upward trend, though admittedly somewhat speculative, is that of the "survival of the fittest". It might be that the less competitive firms to a higher extent have closed down, or moved, so that the more competitive firms constitute a larger share of the population (and consequently also a larger share in the survey samples). If this is the case, the market might now be more concentrated and the firms thereby less vulnerable to competition.

While the managers' assessment of their competitive position on the domestic market has improved steadily, the competitiveness on *the EU market* has remained broadly stable since the beginning of 2001, although showing some recovery since the beginning of 2006. The small movement of the aggregate conceals, however, rather mixed developments at the country level (notably up in Austria, Germany, Spain, Greece while down in France, Ireland and Portugal, for graphs per country see Appendix 1).

Regarding their competitive position in export markets *outside the EU*, firms have gradually become gloomier since 2001. Most countries have suffered from a negative trend in competitiveness but notable exceptions to the general picture are the improved perceptions in Austria, Greece and Spain and to a lesser extent in Germany (graphs in Appendix 1). Due to improved perceptions in the second half of the 1990's, and to a lesser extent the recovery in 2006, the competitive position for the euro area as a whole is still more favourable than it was 10 years ago.

Graph 1: Perceived competitiveness on different markets (euro area aggregate)



Note:

- (i) Net balances are calculated as the sum of "positive" answers minus the sum of "negative" answers. In order to compare levels of competitiveness, cumulated net balances are used.
- (ii) Data until 2006q3 (last observation on NEER and REER is from the Commission Autumn 2006 forecast)

Source: Commission services.

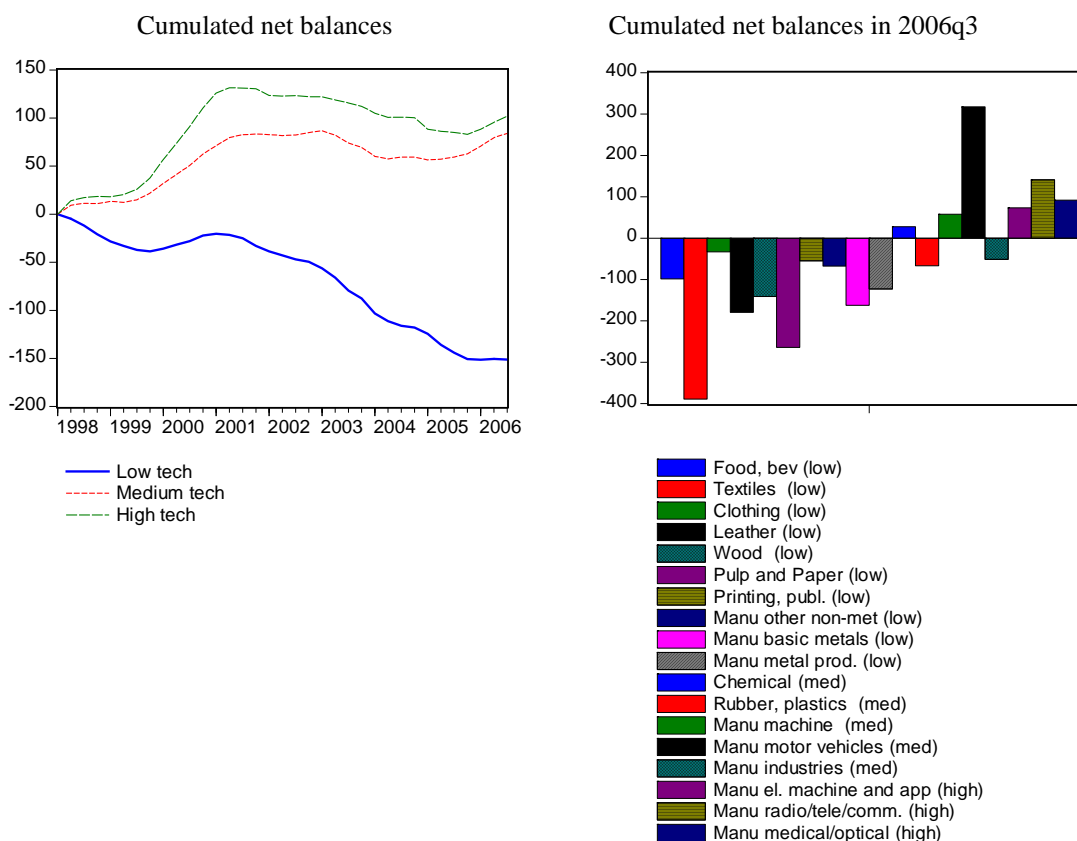
Perceived competitive position on the market outside the EU – sector analysis

Some products are likely to have faced stronger global competition than others. Product specialisation might therefore partly explain the different developments in perceptions in different countries. In particular, countries that specialise in relatively homogeneous products⁵ where price competition from low cost countries is stronger might have been worse off. In order to examine this issue further, perceptions by sector are discussed below. To limit the scope we only consider the competitive position outside the EU market (i.e. question 16).

As expected, developments in perceptions of competitiveness are mixed across sectors (see Graphs 2 and 3). Since 1998, perceptions have continuously decreased in low-tech sectors such as food, textiles, wood and paper.⁶ In fact, perceptions have decreased in all sub-sectors within the low-tech industry. Over the same period, perceptions have strengthened in medium-tech sectors and even more so in high-tech sectors. Perceptions in mid-tech sector have improved mainly because of high confidence in the manufacturing of motor vehicles. Also, the more modest increase in chemical industry has contributed positively to the perceptions in medium-tech industry. In the high-tech sector, all sub-sectors have improved.

Looking only at developments during the last five years, perceptions have deteriorated in all sectors except the manufacturing of motor vehicles, medical and optical products (not shown in graphs). The pessimism in the low-tech sector is still more profound than in the medium and high-tech sectors.

Graphs 2 and 3: Euro area's perceived competitive position on markets outside the EU (1998q1-2006q3)



Note: see Graph 1.

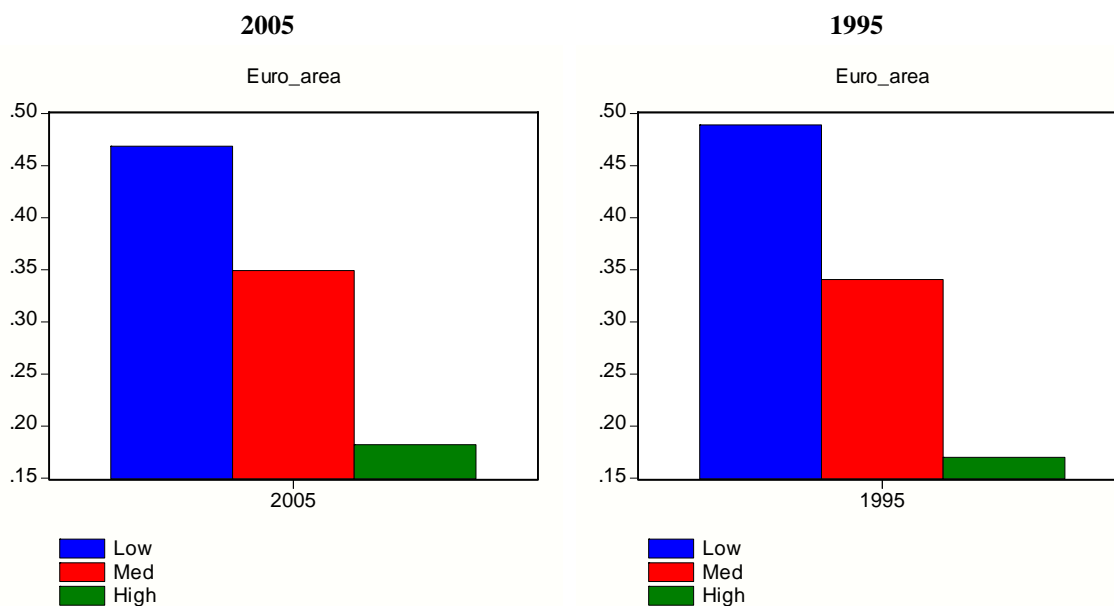
Source: Commission services

⁵ Products with relatively few characteristics/quality dimensions.

⁶ Our aggregation of sectors into low, medium and high-tech sectors follows the classification of the ECB (2005), see table in Appendix 2. The sectors are aggregated into the three categories by calculating simple averages of the net balances, i.e. without considering sector sizes. The classification into low, medium and high-tech sectors should therefore only be seen as a very rough approximation.

The weakening perceptions in low-tech industry, in particular during the last five years, should not be overlooked. In Graphs 4 and 5 the weights for low-tech, medium-tech and high-tech industry, measured as the share in total value added in manufacturing, are displayed.⁷ In 2005, almost half (47%) of euro area production in manufacturing were in low-tech industry. The trend during the last 10 years has been as expected: euro-area firms manufactured relatively less of low-tech products and relatively more of high- and medium-tech products. As shown in the graph, however, the specialisation within the manufacturing sector has in fact changed only marginally since 1995. All in all, the negative perceptions in the low-tech industry have thus had a large impact on overall perceptions. Moreover, the pessimism in the low-tech sector likely reflects a rather weak export performance of this sector.

Graph 4: Weights in manufacturing (shares in total value added)



Note: See Graph 1.

Source: Commission services

Perceptions by sector in Member States

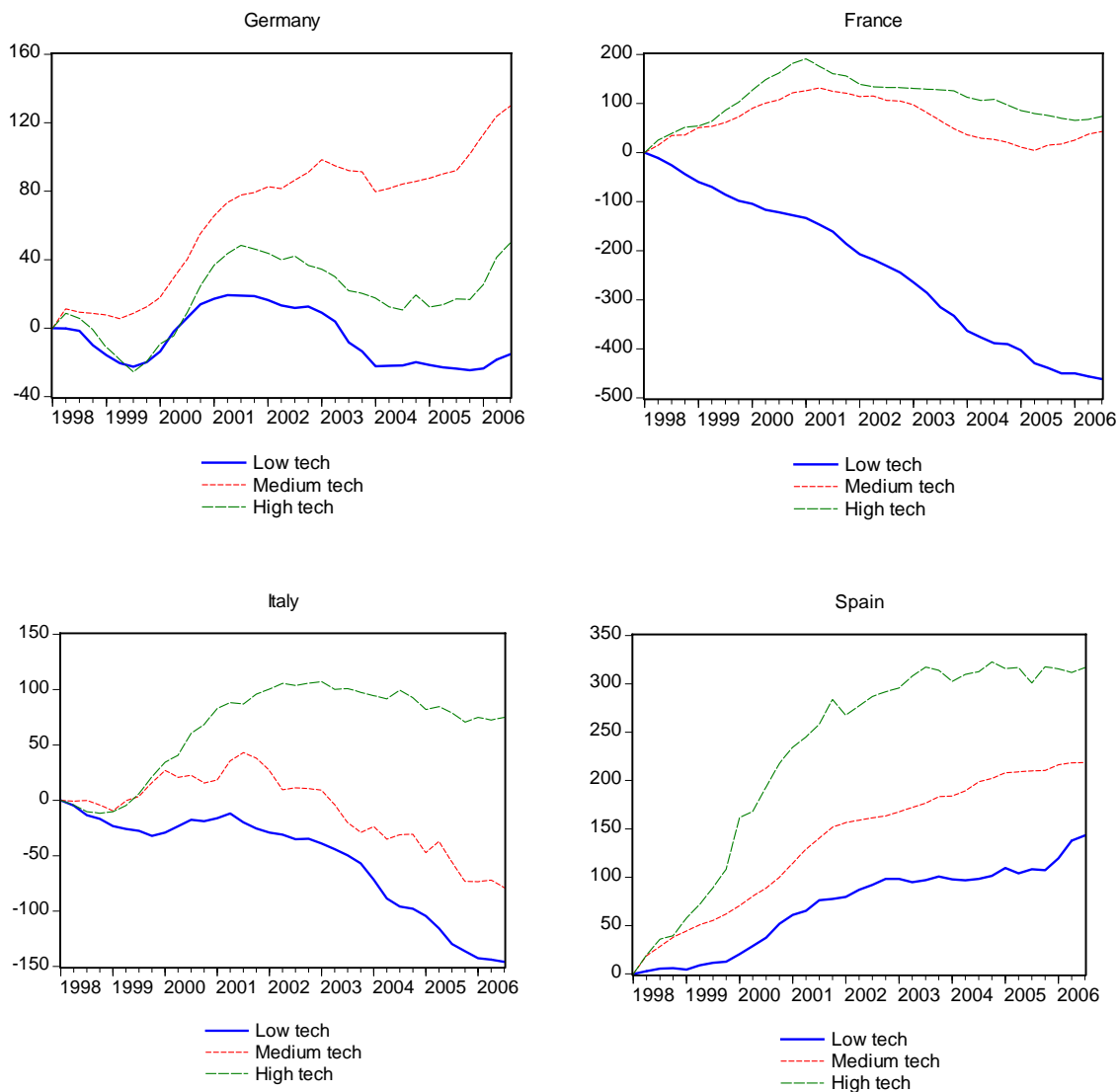
In general, the sector developments seen for the euro area aggregate are also shared by individual Member States (for the four largest countries see Graph 5, for a complete listing of individual countries see Appendix 3). In almost all countries, perceptions tend to be more optimistic in high-technology sectors. In Germany, however, the most optimistic sector is the medium-technology sector, owing to the optimism in the manufacture of motor vehicles. Noteworthy is also the fact that Spain is the only country in the euro area where perceptions have continuously improved also in the low-tech sector.

Also, the developments in different sub-sectors vary across countries. Although the *food and beverage industry* in general has faced stronger competition, some countries perceived that their competitive position has improved. For instance in both Italy and Spain, where food industry makes up a relatively large share in industry, improvements were observed. On the contrary, perceptions in food industry weakened considerably in France. Also, the *clothing industry* is characterised by decreased perception of competitiveness in most countries. Exceptions are the large Member States Germany,

⁷ For countries/sectors where data were unavailable, the EU average is used.

France and Spain. In *manufacturing of motor vehicles*, perceived competitiveness increased in almost all countries, in particular in Germany, but fell in Italy.

Graph 5: Perceptions in selected Member States (cumulated net balances, 1998q1-2006q3)



Note: See Graph 1.

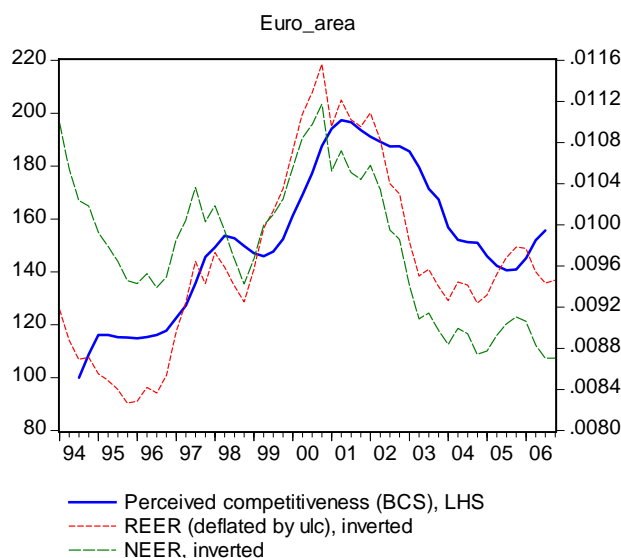
Source: Commission services

3. PERCEIVED COMPETITIVENESS AND COST COMPETITIVENESS

In this section we analyze how well the self-reported perceived competitiveness corresponds to more traditional measures of competitiveness. Graph 6 displays, along with the development of perceived competitiveness, two common measures of relative cost competitiveness: the trade-weighted nominal effective exchange rate (NEER) and NEER deflated by unit labour costs for total economy, i.e. the real effective exchange rate (REER).⁸ The two measures of price competitiveness differ only marginally, except in the beginning of the sample period. This means that relative costs for firms in the euro-area have to a larger extent been directly influenced by the exchange rate rather than differences in relative labour costs.

As can be seen in the graph, the downward trend in perceptions since 2001 is mirrored in the relative cost indices of competitiveness. Cost competitiveness improved slightly during 2005 due to the depreciation of the euro, while perceptions reacted with a delay and started to improve during the first quarter of this year. Whether the worsening in cost competitiveness in 2006 also will dampen perceptions remains to be seen.

Graph 6: Perceived competitive position outside the EU and the relative costs index of competitiveness



Note: See Graph 1.

Source: Commission services

In general, there is a rather strong co-movement between the two series (REER and BCS) even though the relative cost index is more erratic than perceptions. Over the sample period, survey data lags developments of real exchange rates by two quarters on average (see third column in Table 1). A plausible explanation for the lag is that perceptions are formed adaptively, i.e. taking into account the latest known relative prices (exchange rates). The design of the questionnaire in the survey might also partly explain the lag. Since respondents (in quarter t) are asked to assess how their competitive position has developed over the past 3 months, the answers should in principle correlate with the REER in the previous quarter ($t-1$).

⁸ NEER and REER refers to the euro area vis-à-vis the rest of the world, measured as 22 major trading partners, including the other 13 EU countries (plus AU, CA, US, JP, NO, NZ, MX, CH and TR). The survey data on the other hand refer to the euro area vis-à-vis the rest of the world except the EU. This difference is, however, appropriate if firms in the euro area consider other European firms, with their cost levels, as competitors outside the EU.

Table 1: Correlation between perceived competitiveness and REER

	Levels (cumulated net balances vs. REER)			Changes (net balances vs. q-o-q change in REER)		
	Coincident correlation	Max. correlation	Max. corr. at lead/lag ¹	Coincident correlation	Max. correlation	Max. corr. at lead/lag ¹
Euro area	.76	.85	+2	.26	.62	+3
Austria	.78	.78	+1	.04	.59	+3
Belgium	.44	.46	+1	.09	.55	+2
Finland	.66	.82	+2	.09	.58	+3
France	.80	.80	0	.29	.55	+1
Germany	.84	.84	0	.28	.55	+3
Greece	-.23	<018	.26	+2
Ireland	.89	.89	0	.30	.62	+1
Italy	.78	.79	1	.17	.46	+4
Netherlands	-.18	.10	1	.11	.65	+3
Portugal	.89	.89	0	.05	.41	+4
Spain	-.68	<013	.54	+3

Note: sample 1997q1-2006q3

1) A positive value indicates that survey data (perceptions) lag REER. For example, the maximum correlation between perceptions and REER (in levels) for the euro area is found when survey data lags 2 quarter.

At the country level, the pattern is similar for that of the euro area aggregate, i.e. in general there is a rather high correlation that is either lagging or coincident. Exceptions are Greece, the Netherlands and Spain where the coincident correlations are negative.

Our choice of deflator (unit labour costs) of the nominal effective exchange rates (NEER) might be critical. A potential shortcoming of our measure of unit labour costs is that it covers the whole economy, not only the manufacturing sector. This particular shortcoming is, however, supposed to vanish in the long term since prices tend to spill over across sectors. Another potential problem with our deflator, at least in the short term, is that only costs and not prices are considered. In order to meet increasing competition firms might temporarily adjust prices without reducing costs, i.e. adjust their price margin. This would likely be reflected in worsened perceived competitiveness but not in our REER. Against this background, alternative deflators of the NEER have also been examined.⁹ A wide range of deflators were checked, such as relative consumer prices, GDP deflators, unit wage costs in manufacturing and export prices. For the euro-area aggregates as well as for individual countries, it turned out that using different deflators did not change the correlation as reported above in any significant way. Thus, the different relative price and cost measures have in general developed in a very similar way. One exception to this finding is however worth mentioning: Deflating with relative export prices reduced the coincident correlation in levels for the euro area aggregate as well as for most countries. The correlation drops were most pronounced in Austria (from 0.8 to 0.1) and in France (from 0.8 to 0.2), while the correlation increased in Belgium (from 0.4 to 0.9¹⁰). This difference highlights that cost changes have not fully been reflected in price changes, i.e. euro-area firms have also adjusted their price margins.

If instead of looking at levels, we examine the correlations between the net balances and the quarterly changes in REER, the correlations are significantly lower, as expected. The pattern of lagging survey data becomes even more evident in this case. In a majority of countries the lag is more than 2 quarters.

The lagging behaviour of survey data together with its high correlation with REER suggests that its information content, in general, is rather limited. If the survey data would be used in short-term

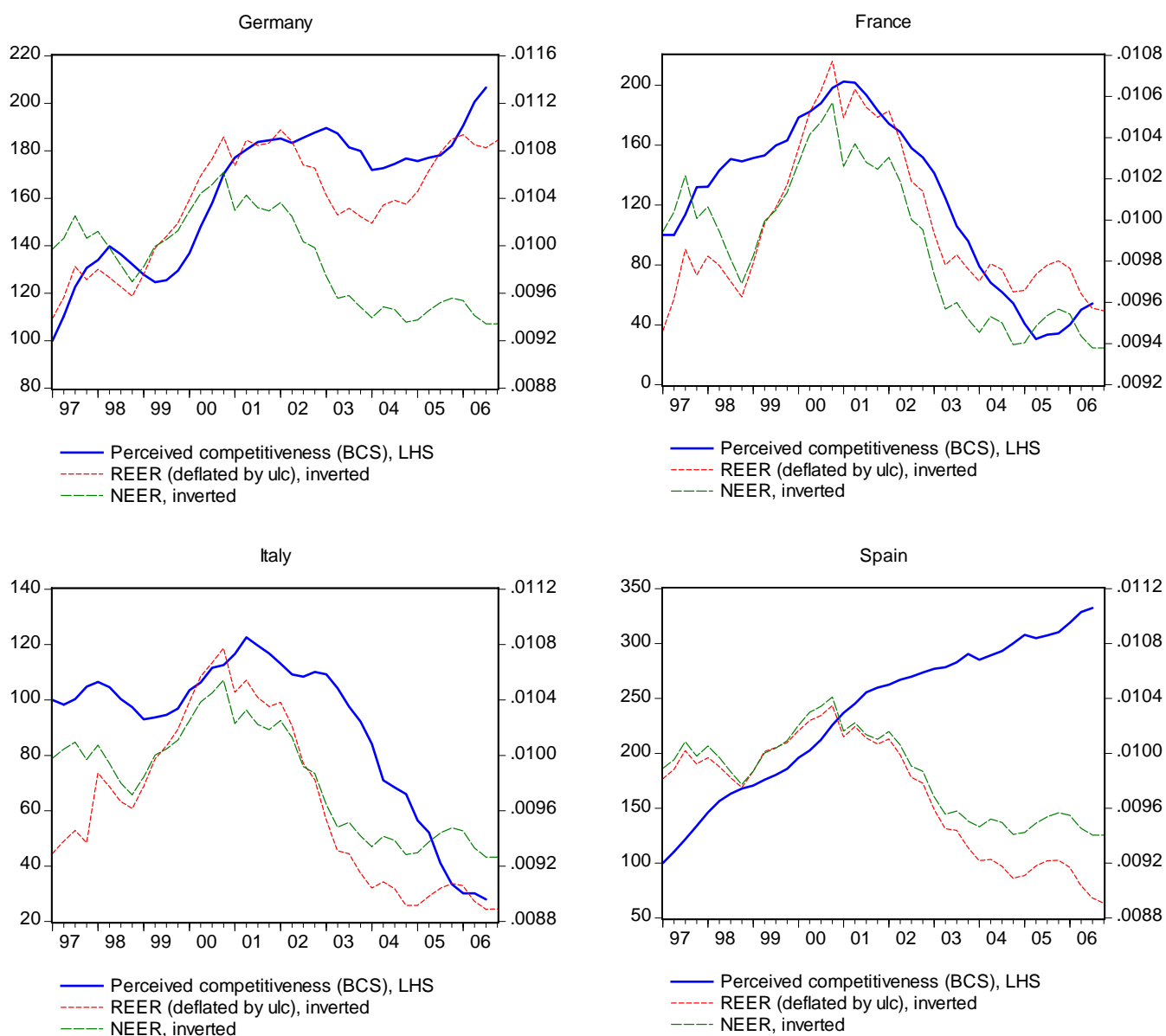
⁹ For a discussion of the pros and cons with different deflators see e.g. ECB (2003).

¹⁰ For Belgium, the coincident correlation also turned out significantly higher when deflating with unit wage costs in manufacturing.

analysis, particularly forecasting, of, for example, exports it seems that the traditional measures of competitiveness are superior (despite the less timely availability of these data). On the other hand, the high correlation may be regarded as a quality check of the survey data. Also, the results suggest that competitiveness for euro-area firms is to a large extent a matter of relative costs. It is not surprising that the survey data rather lags than leads the REER. Since the latter depends crucially on the exchange rate, a financial variable that tend to react almost instantaneously to arriving information.

We now proceed by examining the developments in the series in some countries in more detail. Graph 7 displays the developments of the different indicators of competitiveness for the four largest Member States. Since 1997, there has been a relatively strong co-movement between the series in France, Germany and Italy. In Germany both indicators demonstrate a strengthened competitive position, while the indicators have fallen in France and more markedly in Italy. Interestingly in the case of Germany, the developments of the REER and NEER are quite different, in particular since the beginning of 2004, which reflects the decrease in relative unit labour costs.

Graph 7: Perceived competitiveness and relative costs (REER) in selected Member States



Note: Scale differences.

Source: Commission services

Even though the correspondence between perceived competitiveness and REER is high for the euro-area aggregate and also for most individual countries, there are significant discrepancies between the indicators for some countries.

Spain is one of the most evident examples of a country with a large discrepancy between the series. The favourable development of perceptions in Spain suggests that it has been possible to maintain or even increase competitiveness despite relative cost increases. This might have been possible due to a catching-up effect were costs initially were relatively low.¹¹ Another explanation could be the rather extraordinary economic development during the last ten years. Spain has experienced a long period with substantial growth, which to a large extent has been driven by strong domestic demand. Optimism from the domestic sector might have spread to the manufacturing sector and their perceptions of competitiveness.

Among the other Member States (graphs in Appendix 4) there is a strong co-movement between costs and perceptions also in Austria, Finland, Ireland and Portugal. In Belgium, the correlation is lower due to diverse developments in the beginning of the sample. In Greece and the Netherlands, the correlation between the series is even negative. The pattern for Greece is similar to that of Spain: perceptions have improved continuously during the last ten years even though relative costs have evolved unfavourably. A general pattern for many countries is that even though relative costs have been broadly stable since 2003, perceptions have continued to deteriorate.

4. CONCLUDING REMARKS

Developments in perceived competitiveness have varied significantly across countries and sectors. The variations among countries cannot be fully explained by variations in sectors. Perceptions in low-tech industry, which make up almost half of total manufacturing in the euro area, have deteriorated most, but during the last five years almost all sectors have suffered. Manufacturing of motor vehicles is the only sector in which perceptions has improved over the last five years.

In general there is a strong co-movement between perceived competitive position and the relative cost measure, despite the limitations of the latter measure. The correlations between the two measures of competitiveness are in general high, where perceptions over the sample period tended to lag REER. The most striking exceptions are Spain and Greece, where perceptions are much more optimistic about the competitive position than pure cost measures suggest.

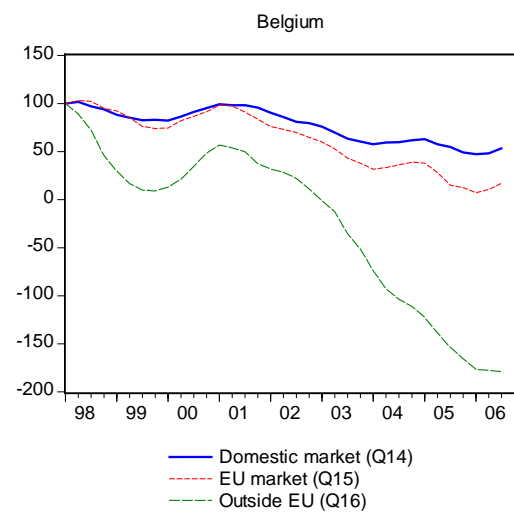
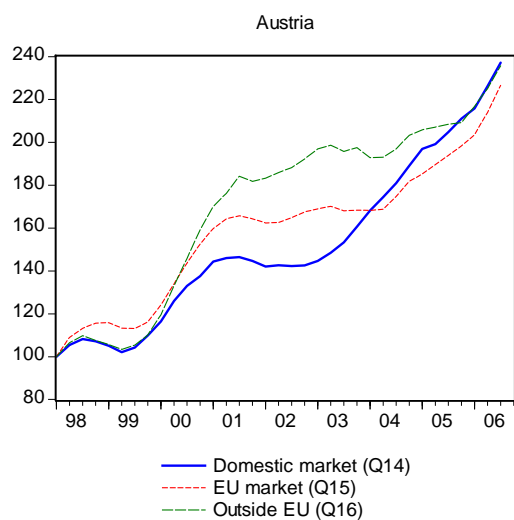
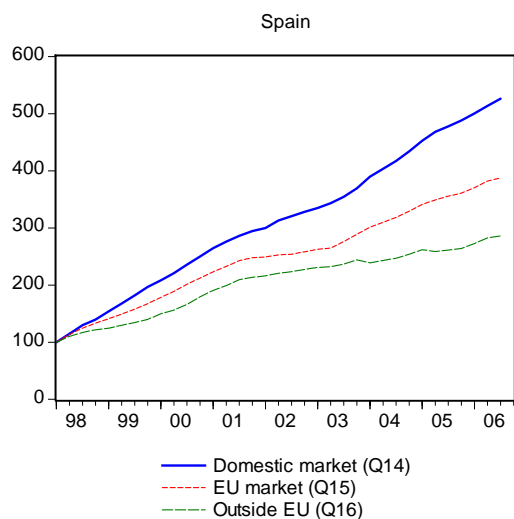
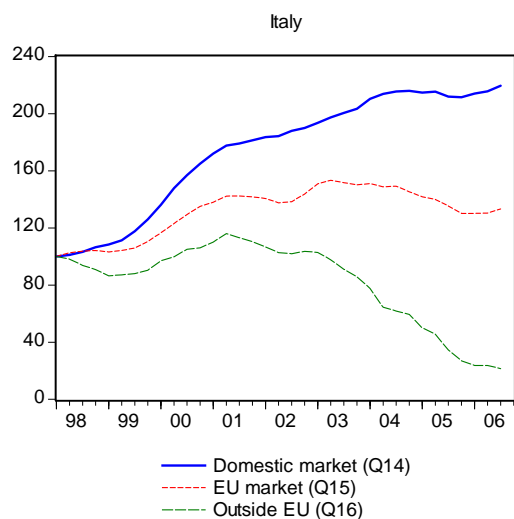
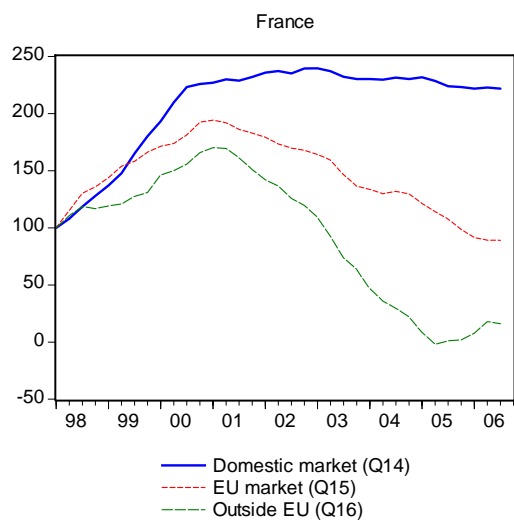
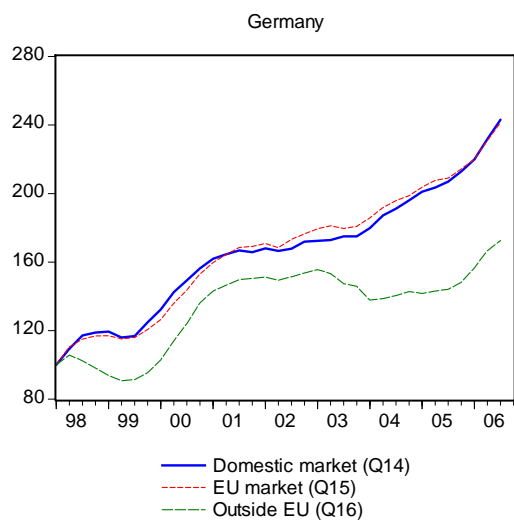
Suggestions for future work on the topic would be to incorporate export performance into the analysis in order to examine which measure of competitiveness that corresponds best to export performance. Another possible extension of this study would be to examine, not only for the euro-area but for all EU Member States, the perceived competitiveness on the internal EU market in more depth.

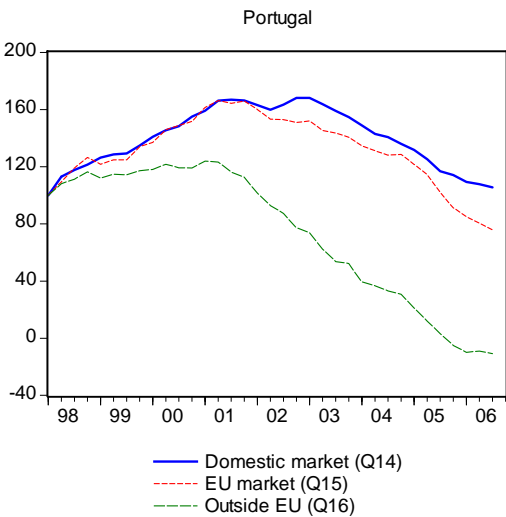
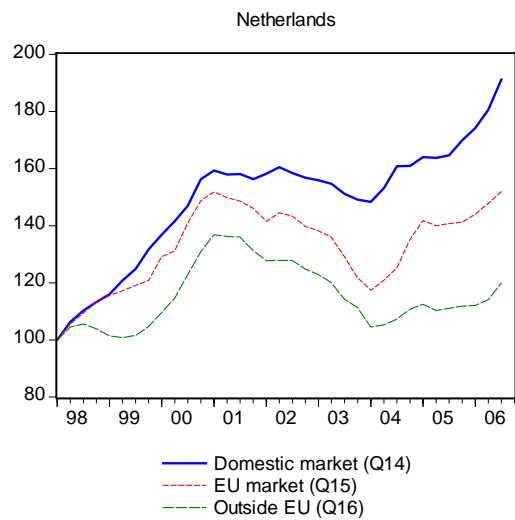
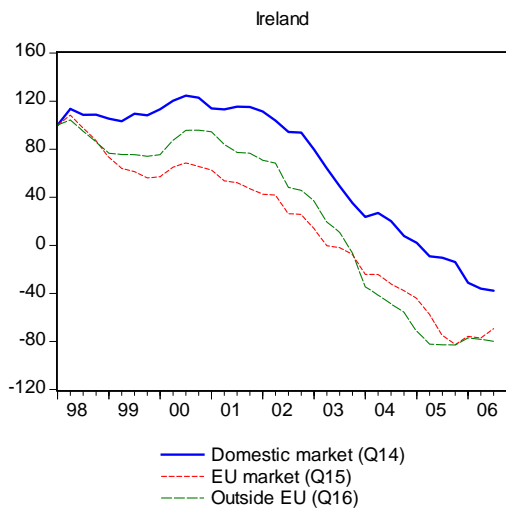
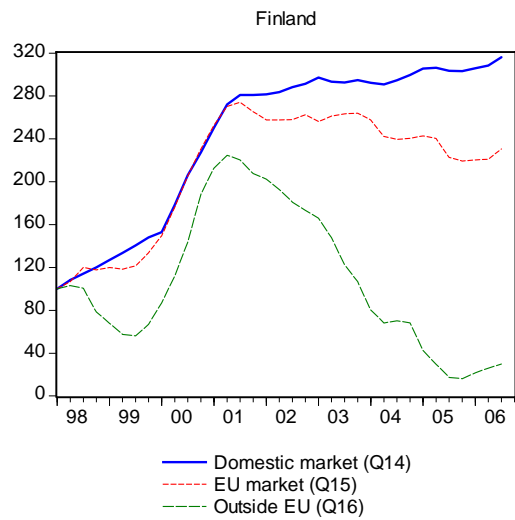
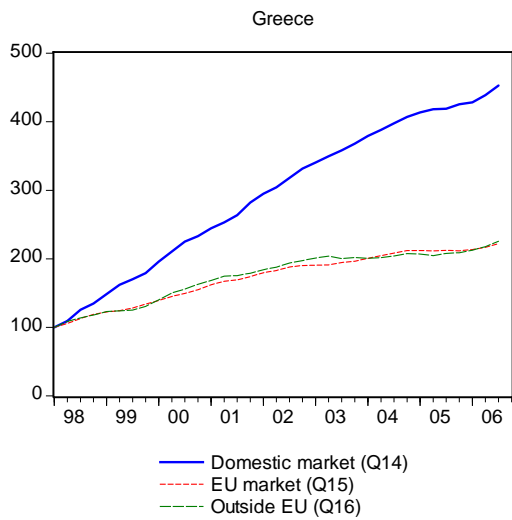
¹¹ A general shortcoming of our analysis is the ignorance of initial values. It is therefore only possible to draw conclusion of the developments in competitiveness and not its level.

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Appendix 1: Perceived competitiveness in euro area Member States (cumulated net balances)





Notes:

i) Net balances are calculated as the sum of number of "positive" answers minus the sum of number of "negative answers". In order to compare levels of competitiveness cumulated net balances are used.

ii) Data until 2006q3

Source: Commission services

Appendix 2

Classification of manufacturing sectors

NACE(rev.1)	Description	Low	Medium	High
15	Food	X		
17	Textiles	X		
18	Clothing	X		
19	Leather and leather products	X		
20	Wood and wood products	X		
21	Pulp, paper and paper products	X		
22	Printing, publishing, reproduction of recorded media	X		
23	Coke, refined petroleum products, nuclear fuel			
24	Chemical industry		X	
25	Rubber and plastics industry		X	
26	Other non-metallic mineral products	X		
27	Basic metals	X		
28	Metal products except machinery and equipment	X		
29	Machinery and equipment, n.e.c.		X	
30	Office machinery and computers			
31	Electrical machinery and apparatus n.e.c.			X
32	Radio, tele- and communication equipment			X
33	Medical, precision and optical instruments			X
34	Motor vehicles, trailers and semi-trailers		X	
35	Other transport equipment			
36	Other		X	

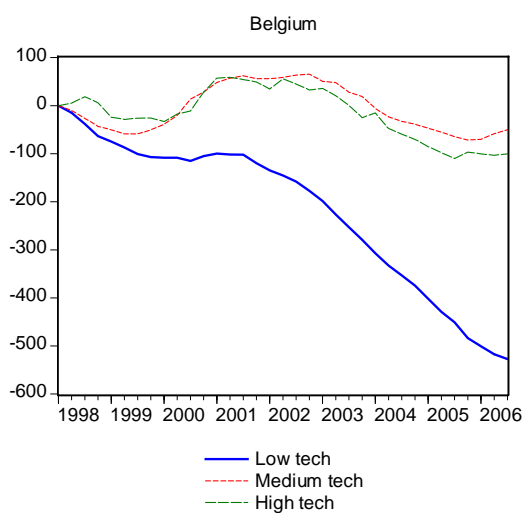
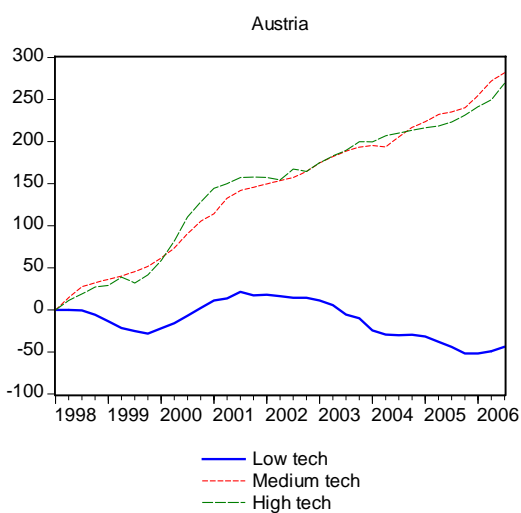
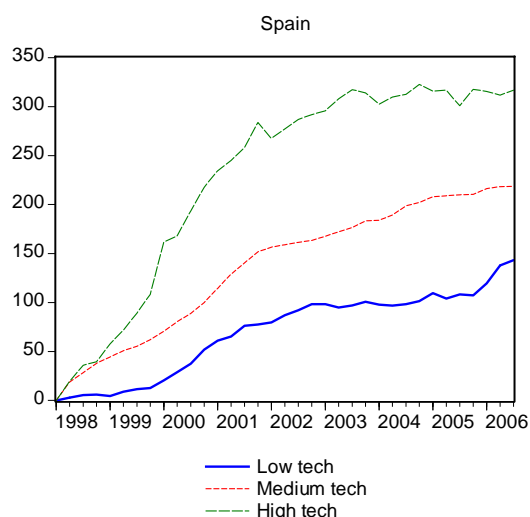
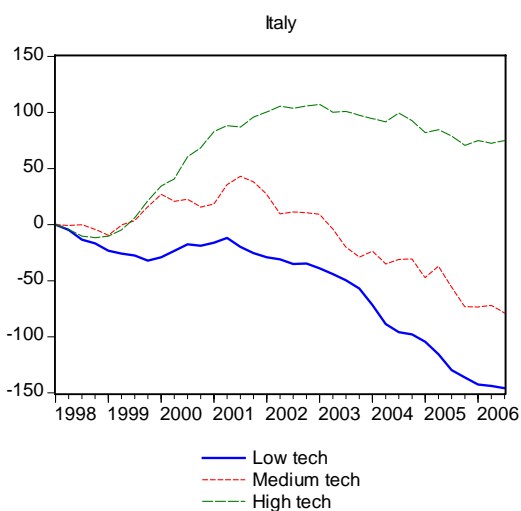
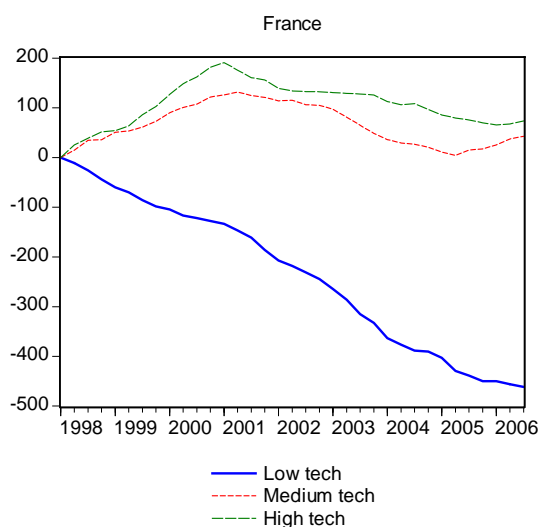
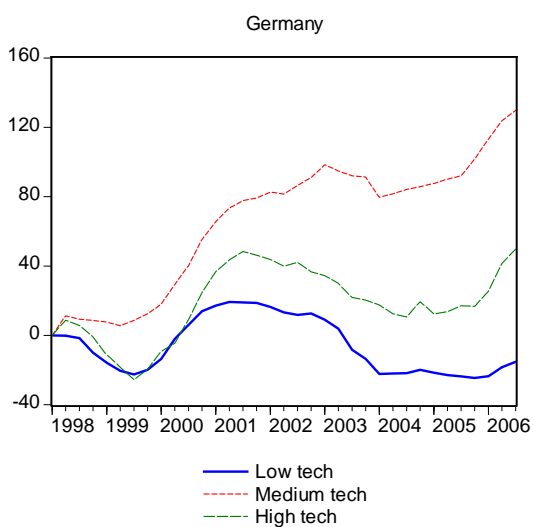
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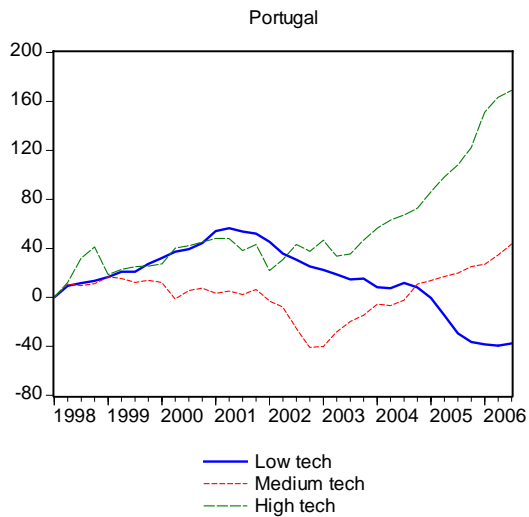
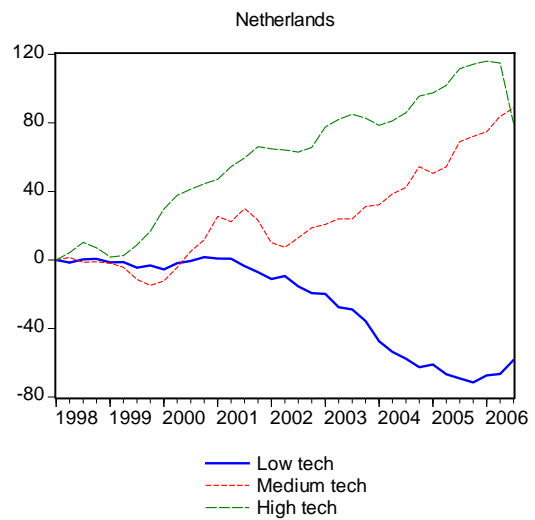
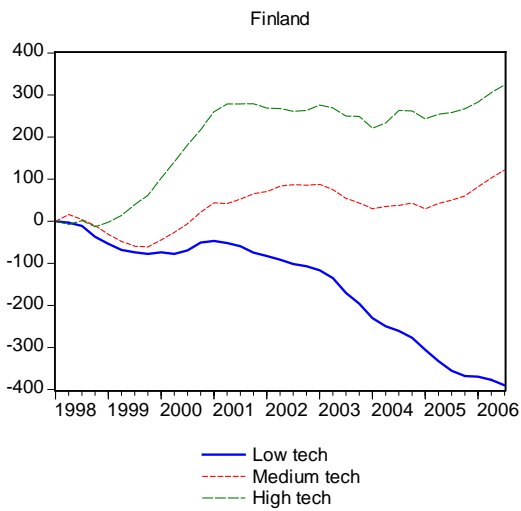
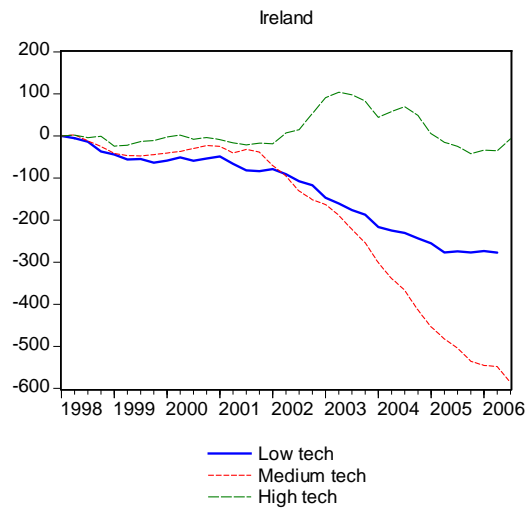
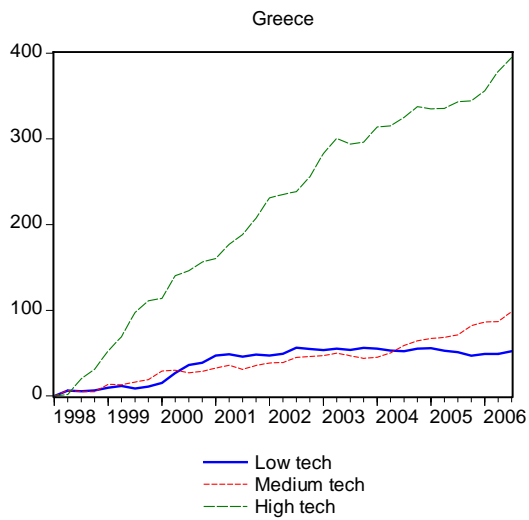
- i) Our aggregation of sub-sectors into low, medium and high-tech sectors follows the classification in the ECB's occasional paper (no. 30, June 2005).
- ii) When aggregating the net balances in different sub-sectors into low, medium and high-tech sectors, the sub-sectors were not weighted according to size but rather given similar weights.
- iii) Sub-sectors coke and refined petroleum products (NACE 23), office machinery and computers (NACE 30) and other transport equipment (NACE 35) were not available for the euro area aggregate.

Source: Commission services

Appendix 3: Perceived competitiveness in euro area countries, per sector

Note scale differences on y-axis





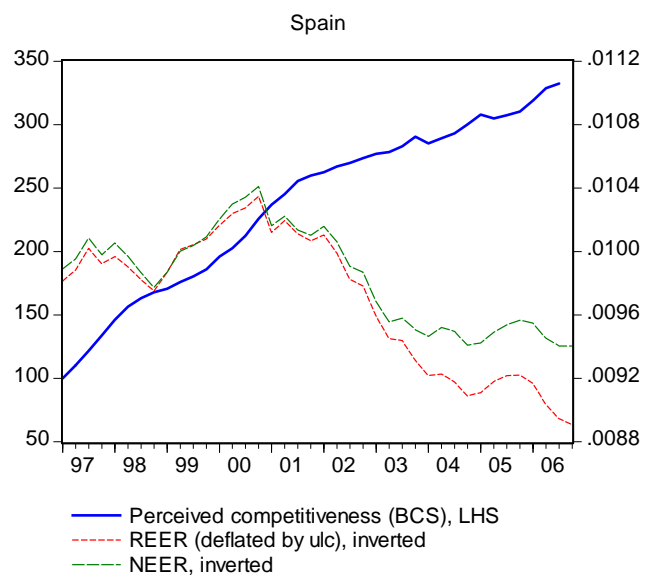
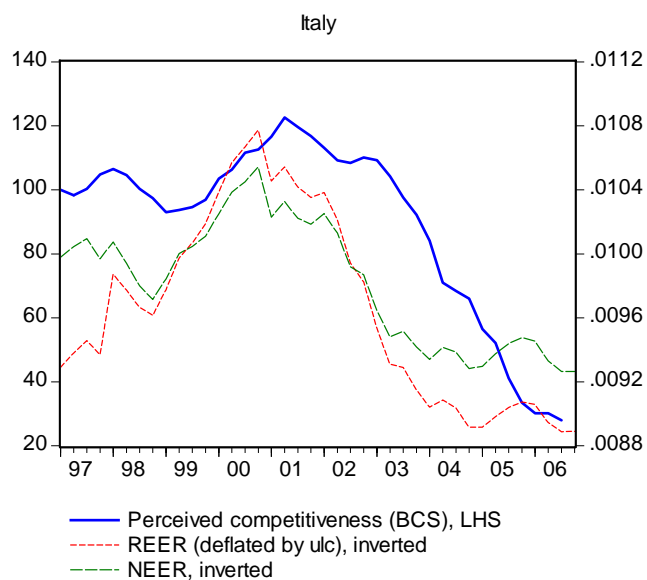
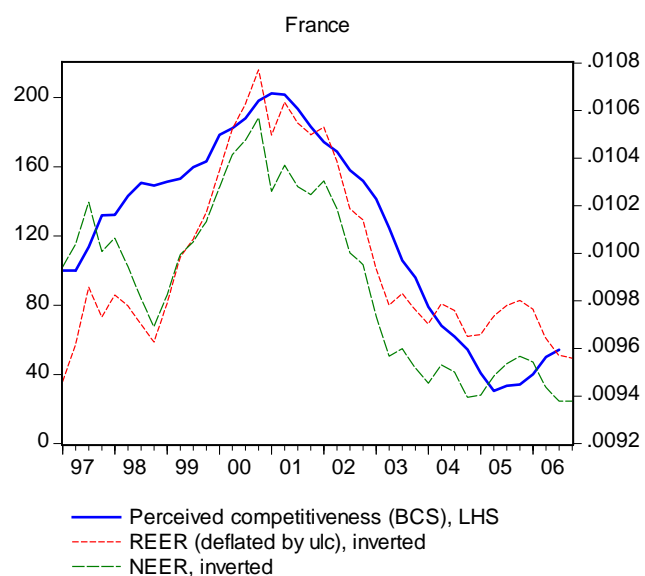
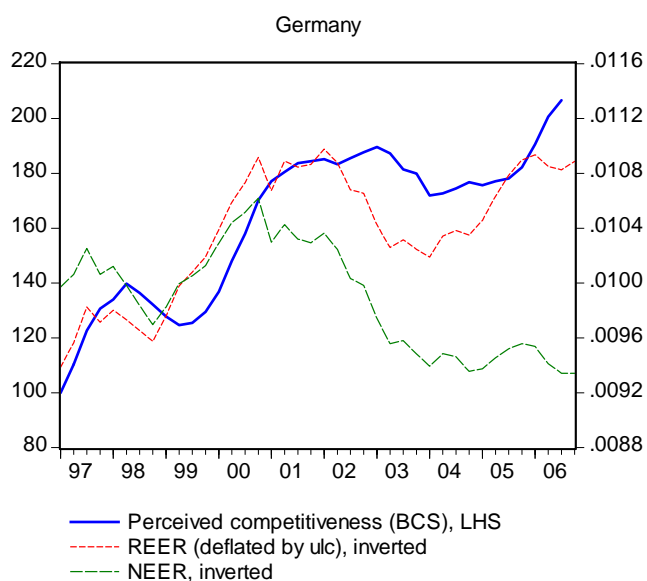
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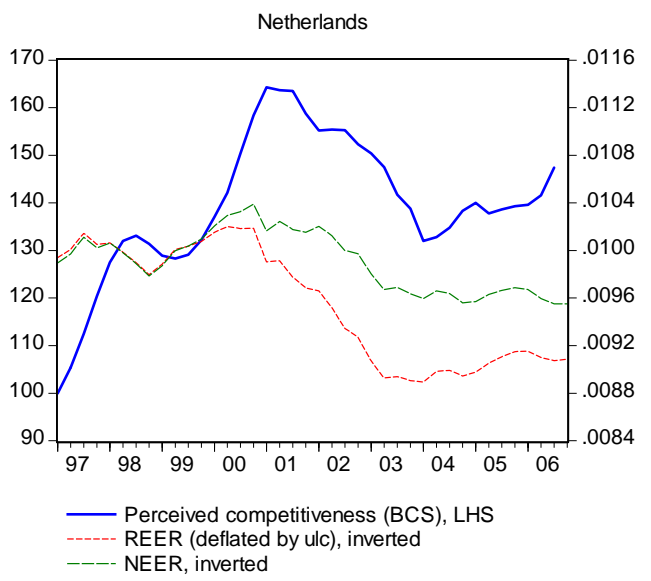
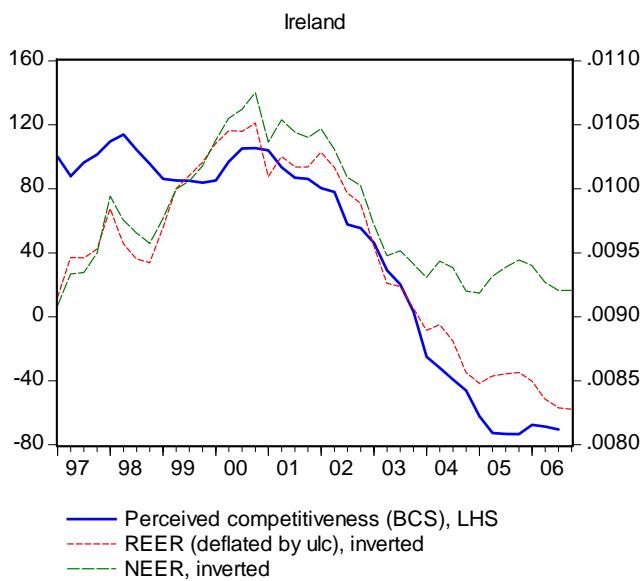
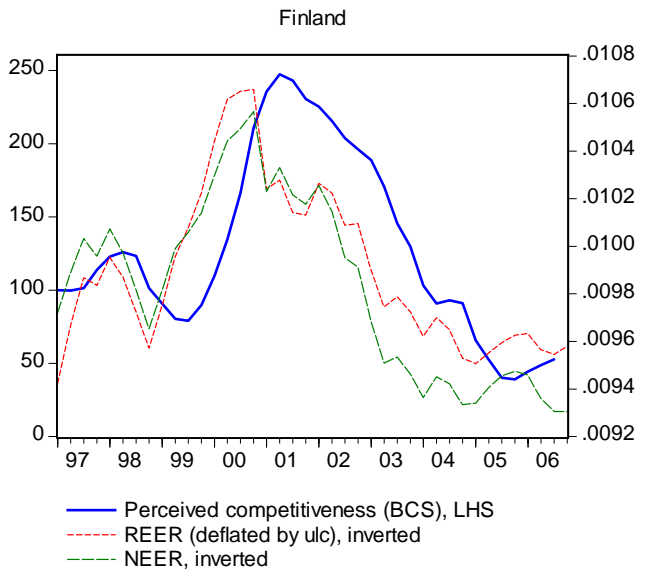
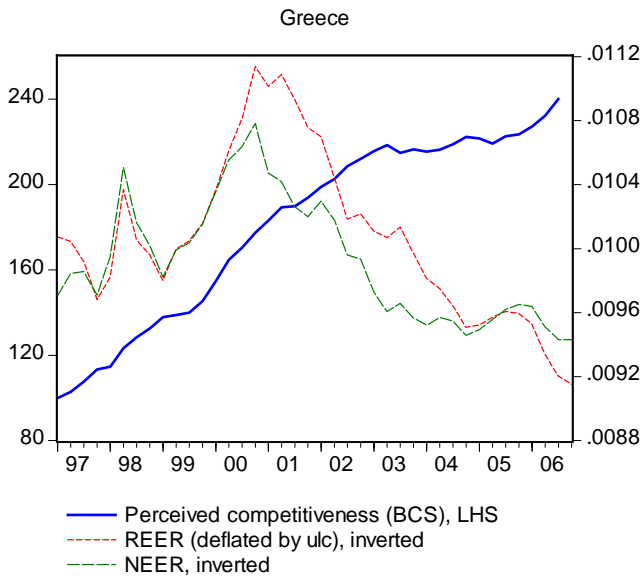
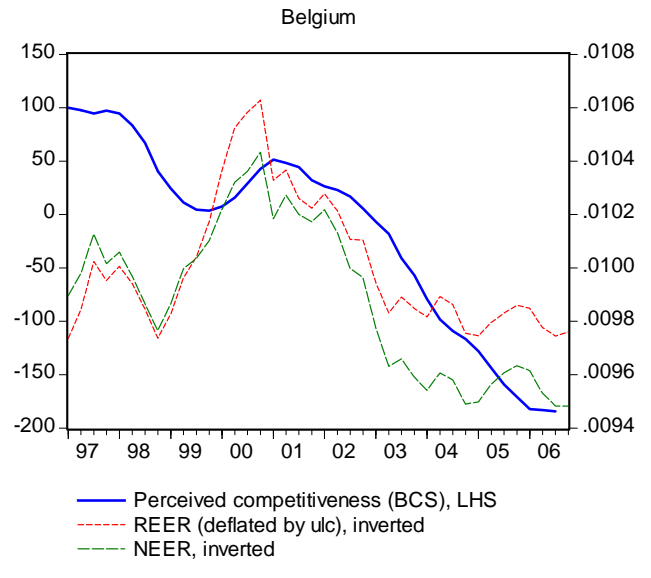
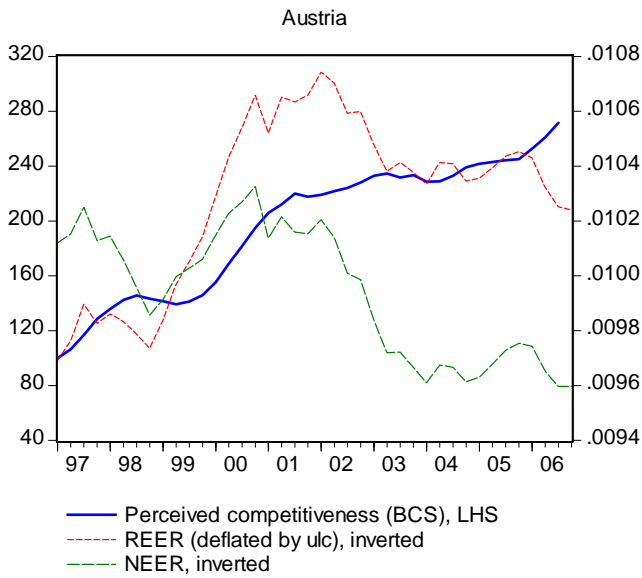
i) Net balances are calculated as the sum of number of "positive" answers minus the sum of number of "negative answers". In order to compare levels of competitiveness cumulated net balances are used.

ii) Data until 2006q3

Source: Commission services

Appendix 4: Perceived competitiveness (cumulated net balance) vis-à-vis relative costs (NEER, REER)





Portugal

