II.1. Labour costs pass-through, profits and rebalancing in vulnerable Member States [12]

This section discusses whether the incomplete pass-through of labour cost moderation into prices observed in some vulnerable countries in the last few years is reflected into profitability developments and whether this is favourable to external rebalancing in vulnerable euro area Member States. In accounting terms, broadly defined measures of operating profits are the link between labour costs and the gross value-added deflators. Macro- and micro-level data are used to better understand the drivers of recent increases in profit measures relative to labour costs. The results suggest that profit margins (gross operating surplus over value-added) increased – particularly in tradable industries – thus absorbing part of the reduction in unit labour costs. However, higher profit margins were not sufficient to contain downward pressures on profitability measured in terms of return on assets, due to surging funding pressures and falling capital productivity. Still, data point to a relative increase of profitability in the tradable sector that is desirable in order to incentivise the reallocation of resources into export oriented industries, thus contributing to external rebalancing within the euro area.

Introduction

Recent adjustments of the current accounts in vulnerable Member States (usually defined as the group of Cyprus, Greece, Spain, Ireland, Portugal, and Slovenia, and on occasion also including Italy) are pointing to the fact that rebalancing is on-going. [13] The aggregate current account of the vulnerable Member States, taken as a whole, recorded a surplus in 2012. The adjustment so far has been the result of a mix between lower imports (driven by lower consumption and investment) but also higher exports whose contribution has expanded more recently. However, the limited pass-through of falling wage costs into export prices noticed in the recent years is sometimes singled out as problematic, as it allegedly would only lead to an increase in profits and not to a boost of exports.

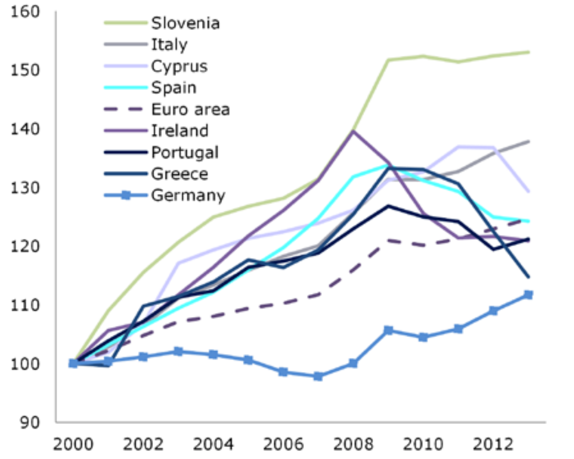
This section takes a more benign view, arguing that an incomplete pass-through is, in part, a natural consequence of the adjustment process. The analysis highlights the main developments of prices and the pass-through of price components – labour and profits – at both the macro and micro levels.

Labour costs and price developments

Evidence from unit labour cost (ULC) developments (Graph II.1.1) suggests that the rebalancing process in vulnerable euro area Member States is underway, as the unwinding of accumulated wage cost imbalances (relative to Germany or the euro area average) has taken place and accelerated in recent years. [14] In particular, Greece, Portugal and Ireland have exhibited the most significant reductions, experiencing negative growth of compensation per employee in addition to increasing labour productivity (reflecting employment losses), while Spanish ULC cuts have been driven by productivity rather than wages. Italy experienced no sharp reduction of ULC growth, as compensation per employee continued to rise.

Graph II.1.1: **Nominal unit labour cost**

(2000-2013, Total economy, Index: 2000 = 100)



Source: AMECO.

(12) Section prepared by Andreas Breitenfellner, Anca Dana Dragu and Peter Pontuch.

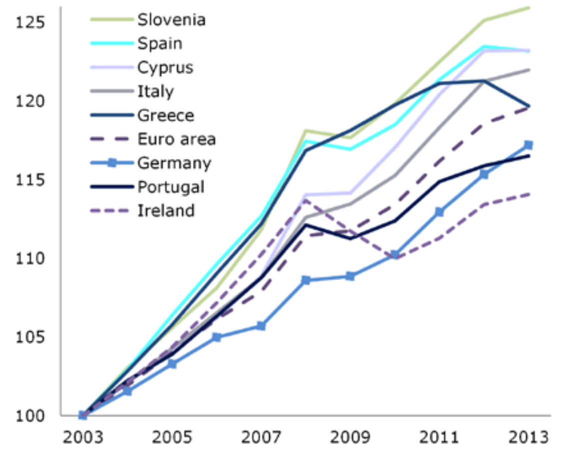
(13) Ideally, rebalancing is a symmetric process that also implies adjustments in the other member states.

(14) ULC index series, however, tend to exaggerate the rebalancing needs, depending on their somewhat arbitrarily chosen starting points.

Wage cost reductions have fed only slowly and incompletely into price developments. Partly, this incomplete pass-through can be explained by simultaneous hikes of indirect taxes and administered prices due to fiscal consolidation needs. Adjusting for the impact of tax changes (Graph II.1.2) which have no direct impact on external competitiveness considerations, HICP inflation has moderated since the onset of the crisis particularly in Greece, Ireland and Portugal, implying even price reductions in some cases.

Graph II.1.2: **HICP at constant taxes (1)**

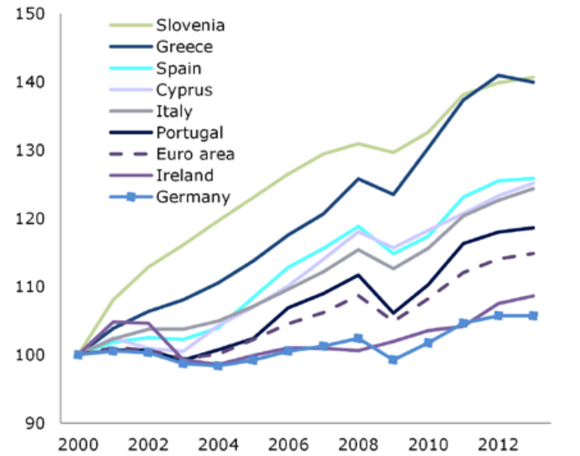
(2000-2013, Index: 2003 = 100)



(1) The HICP-CT index starts with the first complete reporting year 2003. To calculate the last year's average, the last available data (July) has been extrapolated until the end of 2013. Ireland does not report constant-tax HICP figures; therefore all-items HICP figures are taken.
Source: Eurostat.

Graph II.1.3: **Export price deflator**

(2000-2013, Index: 2000 = 100)



Source: AMECO.

As revealed in Graph II.1.3, some adjustment in export prices has taken place, albeit lagging behind labour cost developments. ([15]) The comparison of the last two charts gives a first indication of a different pass-through between domestic and trade-related prices. In any case, the recent trend of low inflation in the vulnerable Member States suggests that labour costs will progressively be passed through into prices.

Aggregate profit margins

The corollary of an incomplete pass-through of wage costs into prices is an increasing profit margin. Indeed, in accounting terms, the link between labour costs (compensation of employees) and the gross value-added deflator is gross operating surplus, apart from less important "other taxes". ([16]) Next the analysis is fine-tuned by more precise profit and price data as well as a disaggregation between tradables and non-tradables. A conventional definition of tradable sectors is used, covering agriculture, mining, manufacturing, energy and utilities, trade, transport, accommodation and food services. Non-tradables include information, communication, finance, other services, construction, and real estate.

Graph II.1.4 shows the decomposition averaged out in three periods of time: 2002-09, 2010-11 and the latter period extended to the latest available data (2013 Q1). In general terms, since the onset of the crisis, profits per unit of output have not mimicked the shrinking path of unit labour costs. The increase in profit margins since 2010 can partly be seen as an offset of their collapse during the global recession in 2008/09. However, their recovery was moderate, as gross operating surpluses had just about returned to their pre-recession levels by late 2011. ([17])

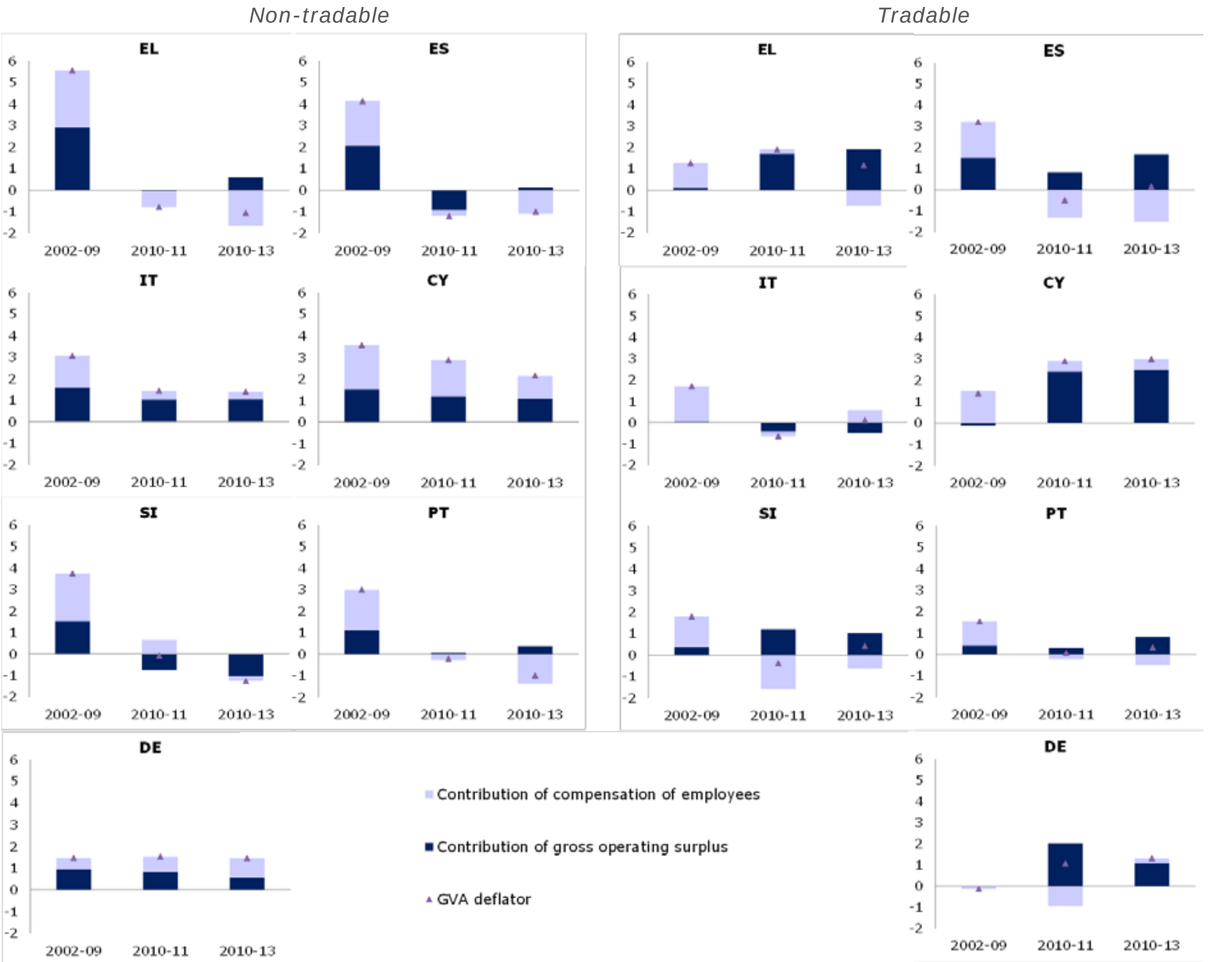
In the post-2010 period, i.e. during the process of rebalancing and when there was a fast reduction in current account deficits, an incomplete pass-

([15]) Ireland appears as an exception as valuation effects of exports which are invoiced in US dollars should be taken into account.

([16]) The contribution of wage costs is computed as $\dfrac{\frac{\text{compensation of employees(t)}}{\text{GVA at constant prices(t)}} - \frac{\text{compensation of employees(t-1)}}{\text{GVA at constant prices(t-1)}}}{\text{GVA deflator(t-1)}}$.
The contribution of profit margins is the residual and includes also the effect of some taxes.

([17]) ECB (2013), Monthly bulletin, March 2013. The topic also touches the debate about the relation between mark-ups and the business cycle. See for example Nekarda, C.J., and V.A. Ramey (2011), "The cyclical behavior of the price-cost markup", *NBER Working Paper,* No. 19099 (June).

Graph II.1.4: **Wage and profit margin contributions to the GVA deflator in non-tradable and tradable sectors (1)**



(1) Non-tradables include: F – Construction, K - Financial and insurance activities, L - Real estate activities, M_N - Professional, scientific and technical activities; administrative and support activities, O_Q - Public administration, defence, education, human health and social work activities, R_U - Arts, entertainment and recreation; other service activities; activities of household and extra-territorial organizations and bodies. Tradables include: A - agriculture, forestry and fishing, B_E - industry except construction, G_I - Wholesale and retail trade, transport, accommodation and food service activities, J - Information and communication.
Source: Eurostat and DG ECFIN calculations.

through in the tradable sector is signalled by an increase in the profit contribution which absorbed part of the reduction in wages. This trend has been accelerating in the most recent period (2012 and early 2013), especially in Portugal and Spain, making the tradable industries more attractive for investment. In the non-tradable sectors developments have been more heterogeneous. In Spain and Slovenia the reduction in the contribution of labour costs to the deflator has not led to an increase producers' margins. [18] In Greece and Portugal, after a strong initial adjustment, the contribution of profits has rebounded. However, the contribution of profit margins to deflators in the non-tradable sectors of Cyprus and Italy remained relatively high. These different developments reflect a fundamental difference between the tradable and non-tradable sector in terms of pricing behaviour.

Firm-level profitability

Firm-level evidence complements the above analysis and sheds light on the relationship between labour costs and profitability measured by the return on assets. The concept of profitability is different from the concept of profit margins (i.e. profits per unit of sales) especially in the context of depressed demand that implies falling capital productivity. Even if margins increase with falling

(18) Slovenia and Spain are the countries with real estate bubble that burst in the initial phase of the crisis.

Table II.1.1: **Effects of labour costs on firm profitability**						
Dep. var. Return on Assets(t)	All MS	Vulnerable	Core	All MS	Vulnerable	Core
	Whole period (2004-2011)			**Post-crisis (2010-2011)**		
Size (t-1)	-0.020***	-0.018***	-0.025**	-0.029*	-0.046**	0.012
	(-5.22)	(-4.61)	(-2.85)	(-2.14)	(-3.18)	(0.44)
Capital intensity (t-1)	-0.034***	-0.039***	0.007	0.036	0.041	0.084
	(-3.49)	(-3.94)	(0.21)	(1.31)	(1.41)	(0.80)
Leverage (t-1)	0.024***	0.020***	0.026*	0.032**	0.034**	-0.010
	(4.59)	(3.76)	(1.99)	(2.64)	(2.77)	(-0.23)
Labour cost (t)/Sales(t-1)	-0.003	-0.039*	0.117*	0.102	0.067	0.207
	(-0.17)	(-2.05)	(2.02)	(1.54)	(1.11)	(1.81)
Tradable dummy *	-0.097**	-0.124***	-0.110	-0.196	-0.230*	-0.179
Labour cost (t)/Sales(t-1)	(-3.07)	(-4.30)	(-1.45)	(-1.91)	(-2.40)	(-0.96)
Constant	0.252***	0.241***	0.283***	0.253*	0.383***	-0.046
	(9.33)	(8.53)	(4.26)	(2.46)	(3.46)	(-0.22)
Industry * year dummies	yes	yes	yes	yes	yes	yes
Firm fixed effect	yes	yes	yes	yes	yes	yes
Observations	23569	15994	7575	7711	5243	2468
Adj. R2	0.106	0.136	0.147	0.072	0.091	0.152

(1) The dependent variable is return on assets (earnings before interest and taxes / total assets).
(2) The sample includes observations of independent firms that had a stable number of employees over a given year (employee growth less than ±0.1%) from Germany, France, Finland, Spain, Italy, Portugal, and Slovenia.
(3) t statistics in parentheses. Significance levels: * p<0.05; ** p<0.01; *** p<0.001.

Source: Orbis and DG ECFIN calculations.

labour cost, profitability might still be under pressure, due to low sales.

The link between labour cost and profitability measured by the return on assets is studied using an econometric model of firm profitability as a function of firm-level variables, sector-year dummy variables and firm fixed effects. ([19]) The variable of interest in the model is defined as the ratio of current labour expenses to previous year's sales. ([20]) In order to capture the differences in wage pass-through between tradables and non-tradables, this variable is interacted with a dummy variable for tradable sector firms.

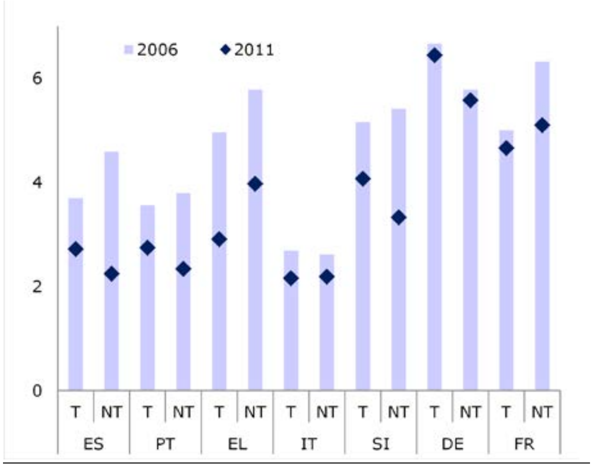
([19]) The choice of indebtedness as a firm-level control variable aims to capture any empirical correlation between debt and firm performance, be they causal (e.g., agency theory) or not. The data cover independent companies during 2003-2011 for Spain, Portugal, Italy, Greece, and Slovenia representing the vulnerable Member States, and Germany, France and Finland representing non-vulnerable Member States.

([20]) Using wages and sales of the same period would make the studied relationship meaningless, as it would simply reflect a mechanical effect of an increase in labour costs not covered by a proportional increase of sales on ROA. As an additional filter, a stable labour force between the current and previous year is required, as otherwise the changes in the wages to sales ratio could reflect changes in the size of the company and/or the structure of its labour force (leading to a final sample of 23,569 observations). Similar results are however obtained also when looking at all firms without requiring a stable labour.

The first column of Table II.1.1 shows that the changes of labour costs were not associated with significant changes of profitability in general, as the coefficient on the corresponding variable is low and statistically not significant. However, the effect of labour costs on firm profitability in tradable industries (row highlighted) seems to be significantly negative. This observation indicates that labour cost increases in tradable sectors tend to be negatively correlated with changes in profitability. The second and third columns further suggest that this effect is mostly driven by firms in the vulnerable member states, while it is also negative but not significant in the core states. On average, a 1 pp. increase in the wages to sales ratio in the vulnerable Member States is associated with a 0.16 pp. decrease of profitability in the tradable sector (since the total coefficient is given by –(0.039 + 0.124)). The last three columns further reveal that the wedge between the impact on tradable and non-tradable sectors in the vulnerable Member States almost doubled in the post-crisis period. In sum this exercise reveals that the pass-through, particularly in the tradable sector, was already limited before the crisis and it has only become more so since then.

These results should be interpreted together with the developments of firm profitability, as presented in Graph II.1.5. Before the crisis, typical profitability in non-tradable sectors was above that of tradables in all vulnerable Member States, except Italy. A similar gap was present in France, while Germany saw the inverse situation where the typical tradable sector firm profitability was above that of non-tradables. In the crisis period, there was a general fall of profitability in all vulnerable Member States and, to a lesser extent, France and Germany. However, the fall of profitability in the vulnerable countries (except Greece) was stronger in the non-tradable industries. In 2011, tradables' profitability was somewhat above that of non-tradables in Spain, Portugal, and Slovenia, but not in Greece. Lastly, the graph shows that the limited wage pass-through in tradable industries has not led to abnormal profits. Instead, the improved margins compensate for the fall in revenues driven by weak demand. Profitability is still depressed, both compared to pre-crisis levels and to core Member States.

Graph II.1.5: **Median firm profitability in the tradable and non-tradable sector**



(1) Profitability is measured after tax as earnings before interest after taxes/total assets. T stands for tradable sectors, NT for non-tradable sectors.
Source: Orbis and DG ECFIN calculations.

Implications for rebalancing

Growth-friendly rebalancing requires a shift of resources from the non-tradable to the tradable sector, leading to an increase in the export capacity and actual exports. As resources are driven by their expected returns, the attractiveness of the tradable sector has to increase relative to the non-tradable one. The incomplete pass-through of wage cuts into prices is therefore consistent with, and effectively part of, the rebalancing process in the vulnerable Member States, provided that it occurs predominantly in the tradable sector. Firms in the tradable sector, in particular in small economies, have in general less influence on prices (they are closer to being price-takers) ([21]) than firms in non-tradable sectors. Hence, downward developments in wage costs make room for restoring profit margins of these firms.

Looking beyond price-taking behaviour, ([22]) there are a number of factors explaining the resilience of margins in vulnerable Member States, including the fall in capital productivity, firm's deleveraging needs, increased borrowing costs, and weaker competition. Deleveraging pressures have indeed been increasing in the overly indebted corporate sector, notably in the vulnerable Member States. Large drops in firm indebtedness have been observed in Spain, Greece and Italy, mainly driven by negative net credit flows. ([23]) Furthermore, financing costs for the corporate sector have considerably increased in vulnerable countries throughout the recent crisis period. Indeed, the highest corporate lending rates were reported in Greece, Cyprus, Portugal, and Slovenia, followed by Italy and Spain. ([24]) An improvement of financing conditions becomes even more relevant, in order to allow tradable sector firms to offset the decline in domestic markets by finding external ones, and, in a broader sense, to reallocate resources in the tradable sector.

The above findings are mirrored by company surveys. In 2010, firms considered that small margins, high labour costs and insufficient financing, including necessary investment into equipment were among the most important factors – after negative economic outlook and lack of domestic demand – expected to limit their business

([21]) Moreover the price-elasticity of their exports is relatively high (see e.g. Imbs, J. and I. Mejean: "Trade elasticities: A final report for the European Commission", *European Economy-Economic Papers*, No. 432, DG ECFIN, European Commission, December 2010.

([22]) The evidence of price-taking in the export sector is mixed and possibly tilted towards smaller firms. For instance, Spanish export prices and ULC moved in tandem before the crisis, both when looking at simple indices and real effective exchange rates, suggesting some pricing power.

([23]) See Cuerpo Caballero, C., I. Drumond and P. Pontuch (2013), "Assessing the private sector deleveraging dynamics", *Quarterly Report on the Euro Area,* Vol. 12, No. 1.

([24]) See Jevčák, A. and L. Briciu (2013), "Drivers of diverging financing conditions across Member States", *Quarterly Report on the Euro Area,* Vol. 12, No. 1.

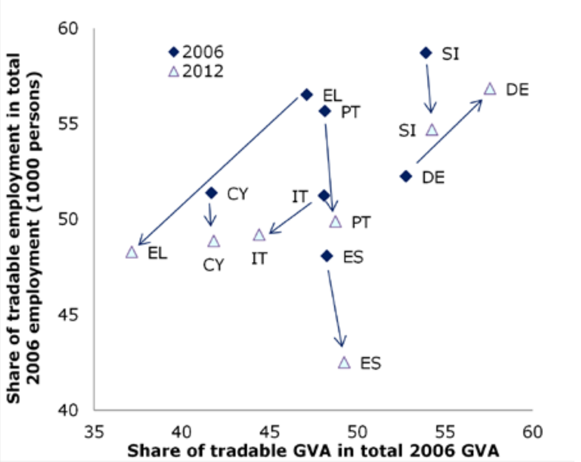
growth. [25] A more recent survey [26] indicates that at the beginning of 2013 access to finance was the most pressing problem faced by companies in Greece and Ireland and second most important in Portugal and Spain, after "finding customers". The same survey indicates a continuation of the decline of profits in all vulnerable countries, as a consequence of turnover and cost developments.

Overall, if developments in the pass though appear benign in the tradable sectors, there is still room for policy action in the non-tradable sector to facilitate the rebalancing process. Recent data on product market policy areas indicate that there are challenges in the tradable sector of most vulnerable Member States. [27] Moreover, the crisis may have reduced the intensity of competition, as many companies went bankrupt or withdrew from the markets, given low demand expectations and high uncertainty. Increasing competition in non-tradables and reducing margins would (i) contribute to faster reallocation of resources, (ii) improve price competitiveness of tradables using non-tradable goods and services as inputs, (iii) mitigate the pressures on disposable incomes for those affected by employment reduction and wage cuts, and (iv) compensate for price increases resulting from tax hikes, as part of the fiscal consolidation process.

Although the conditions for resource reallocation are emerging, the rebalancing process is in its early stages and not yet symmetric. This evolution is highlighted by plotting together both value added and employment in tradables relative to their respective pre-crisis totals (Graph II.1.6). On the one hand, some reallocation is visible in terms of activity, as tradables' value added has been growing faster (or contracting slower) compared with non-tradables, overpassing its pre-crisis value (e.g., in Spain, Portugal, Slovenia and marginally in Cyprus).

Developments in Greece and Italy are less encouraging, as value-added in the tradable sector has contracted significantly against the 2006 level. On the other hand, the graph reveals a significant decline of employment in tradables in 2012 compared with 2006 in all vulnerable Member States, in the context of overall shrinking employment. Taken together, these developments are in contrast with those in Germany, where the tradables' share in both employment and value added have increased – beyond what overall GDP and employment growth would have implied – while rebalancing would rather be associated with movements in the opposite direction.

Graph II.1.6: **Employment and value added in tradable sector in selected countries**



(1) VA measured in constant prices. In order to capture the decline of employment and value added since the onset of the crisis, both ratios are computed using as denominator the values of the pre-crisis year (2006)
Source: Eurostat.

Conclusion

This section reveals that labour cost moderation in the vulnerable Member States is actually feeding through into prices, though not completely, due to recovering profit margins. Yet, profitability as measured by the return on assets is declining, as it takes into account the fall in sales. Changes in wage costs and profit margins seem to be occurring in opposite directions, both in the boom years and in the rebalancing period, being expressions of the same mechanism. As summarized in Table II.1.2, both macro and micro level evidence points to a limited pass-through of wage costs into prices, particularly in tradable industries.

([25]) Survey on access to finance of SMEs, Eurostat. SMEs are relevant for this analysis as they are in general price takers. http://epp.eurostat.ec.europa.eu/portal/page/portal/european_business/special_sbs_topics/access_to_finance

([26]) Survey on the access to finance of SMEs in the euro area (SAFE), ECB, http://www.ecb.europa.eu/pub/pdf/other/accesstofinancesmallmediumsizedenterprises201304en.pdf?60898720eeff7420c0a7c03f977e086a

([27]) The data bank LAF provides for each country an aggregate relative score on several policy areas including product market reforms (available at http://ec.europa.eu/economy_finance/indicators/economic_reforms/Quantitative/laf/).

The observed partial transmission of labour cost moderation into prices can be ascribed as potentially benign if it leads to a reallocation of resources away from rather sheltered domestic industries towards more export-oriented and import-competing industries. So far, however, the evidence of cross-sector shifts in employment and activity is mixed, which may reflect continuing deleveraging pressures and financial constraints.

Table II.1.2: **Summary of findings**

		Tradable sector	Non-tradable
Macro evidence	Pre-2010	wage increases eroded margins (to a lesser extent for ES)	margins increases were stronger than wages
	2010-11	labour cost moderation and restoration of margins (except IT)	labour cost moderation, profit margins rebound somewhat (EL, ES and PT)
Micro evidence	Pre-2010	high labour costs imply lower profitability	high labour costs slightly reduce profitability
	2010-11		no relationship between labour costs and profitability

Source: DG ECFIN.