

Could a wage formula prevent excessive current account imbalances in euro area countries? A study on wage costs and profit developments in peripheral countries

Authors: Camille LOGEAY*, Heike JOEBGES*, (*corresponding authors)

Affiliation: both HTW Berlin (<http://www.htw-berlin.de/>)

Contact: camille.logeay@htw-berlin.de; heike.Joebges@htw-berlin.de

Remark: A first version of the paper has been published in German: Joebges Heike und Logeay Camille (2016): „Verhindern nationale Lohnformeln Leistungsbilanzdefizite? Die Rolle von Lohnstückkosten und Preisen in den Krisenländern des Euroraums“, in: Truger/Hein/Heine/Hoffer (eds): Monetäre Makroökonomie, Arbeitsmärkte und Entwicklung/Monetary Macroeconomics, Labour Markets and Development. Festschrift für Hans-Jörg Herr, Metropolis, Marburg, pp. 313-328.

JEL: E25, E65, F45

Abstract: Since the introduction of the euro, divergent nominal wage developments contributed to the observed current account imbalances that built up until the financial crisis: as factor costs, they are key determinants of the price competitiveness of the tradable sectors and for the domestic price level of the whole economy. As income, they are an import determinant for domestic demand and imports. Through their effect on prices, they determine real interests in a pro-cyclical way and reinforce divergences. To address these transmission channels this paper discusses the benefits of a wage rule for the monetary union and answers the question if such a rule would have avoided the imbalances that cumulated in 2007 and their painful corrections afterwards. The paper focus on the crisis countries and on two specific aspects which are central for the wage rule to be valid: we reassess first that demand aspects are dominating the cost aspects in explaining current account balance divergences and that distributional effects perturb the transmission from wages to prices. We conclude that the wage rule would be a relevant indicator for the MIP-scoreboard of the European Commission but it needs to be complemented by a rule for profit (and tax) developments.

Outline

1. Introduction.....	2
2. Determinants of current account imbalances.....	3
2.1 Net exports and unit labour costs since 1999.....	4
2.2 Net exports and demand since 1999.....	5
2.3 Other factors	6
3. Wages and prices.....	6
3.1 Imported inflation	7
3.2 Unit labour costs and the GDP deflator	7
3.3 Distributional effects of price changes.....	8
4. Conclusion	9
References.....	10
Figures and Tables.....	12
Appendix.....	15

1. Introduction

Since the introduction of the euro, divergent nominal wage developments in euro area countries have become more important for the development of current account imbalances (Herr/Horn 2012): Wages are factor costs for production. In a monetary union, they play a more important role for the determination of price competitiveness and therefore export success as for countries with national currencies and flexible exchange rates that can mask wage developments. At the same time, wage income is an important component for domestic demand that in turn drives import demand. As wage and price developments are highly correlated, deviations from the euro area averages of prices and wages can become self-reinforcing in a monetary union, contributing to divergent developments of member countries' current account imbalances.

Already on the eve of euro introduction, several authors pointed to potentially problematic consequences of divergent wage developments, even in Germany (Heine/Herr 1999, Horn et al. 1999). Even though there had been debates about optimal wage developments at a national level before the introduction of the euro, a wage rule for the euro area has received little academic interest. This is surprising, as other rules, be they sensible or not, receive a lot of attention: the Taylor rule for monetary policy is highly discussed, as are Maastricht rules that replaced the old "Golden rule" for fiscal spending in Germany.¹

Too high wage increases are seen as a crucial factor for the problems in euro area crisis countries, Spain, Ireland, Italy, and Portugal: The dominant crisis explanation is the loss in price competitiveness.² The resulting recommendation to overcome the crisis is to improve competitiveness by decreasing unit labour costs (IMF 2013, EC 2013). Yet, even the cited institutions observed that the decrease in unit labour costs since the financial crisis was not in line with final price developments. Instead, increasing capital gains partly offset decreasing wage costs.

This paper is therefore trying to address the question, in how far old recommendations for nominal wage developments at the national level could serve as a sensible recommendation for all euro-area member countries. The focus is to clarify if a wage rule could impede the formation of unsustainable current account imbalances. While we deem the rule important for all member countries, we focus on those countries in the periphery that suffered from increasing current account deficits up to the financial crisis: Greece, Ireland, Italy, Portugal, and Spain.

The wage rule that we are referring to recommends that nominal wages should follow the pace of productivity and target inflation (Horn/Logeay 2004 and Herr/Horn 2012). For this rule to apply, wage developments should not be technologically driven but be the result of labour market institutions, economic policies and international developments. If all countries in the European Monetary Union (EMU) followed this rule, they should contribute to euro-area price stability, as prices and wages correlate strongly. This should also prevent the monetary policy stance to become pro-cyclical at national levels – in contrast to what has happened since the introduction of the euro. Fearing these effects, the ECB had watched the divergent developments of wages and prices at the beginning of the EMU with great concern (ECB 2003).

The wage rule addresses two issues linked to developments within a monetary union: excessive wage developments harm external price competitiveness (cost aspect) and boost domestic demand with

¹ For a discussion of the Taylor rule see Gerlach/Schnabel (1999), Ullrich (2003); for the Golden rule see Truger (2016).

² While this is discussed as a contributing factor for Greece, fiscal profligacy seems to be the dominant explanation for the crisis in this country.

unsustainable effects on imports as well as inflationary pressures that have distributional consequences. For Germany those aspects are well analyzed (Feigl/Zuckerstätter 2013 and Horn et al. 2013). For the peripheral countries, the cost aspect is the dominant subject of intensive attention (IMF 2013, Draghi 2013,³ EC 2013). Our paper aims to refocus the debate in shedding more light on the distributional aspects of price developments. We analyze the period since the introduction of the euro in 1999 up to the last available data in 2016.

The structure of the paper is as follows: After an introduction in section 1, section 2 provides an overview on determinants for current account developments in peripheral countries. This section aims at pointing to the relevance of wages for net exports developments, and at the same time acknowledges that other factors also play a role. One limitation of an explanation based on wage developments is that wage developments do not fully translate into final prices. This leads to changes in the functional income distribution, the focus of this article. Section 3 therefore concentrates on wage-price relations, especially analyzing the link between unit labour costs and prices, and the resulting changes in distribution. The last section concludes.

2. Determinants of current account imbalances

National wages are highly correlated with national price developments, as can be seen in Figure 1: The correlation of unit labour cost changes with growth rates of selected price indicators is very high (above 0.9) for the GDP deflator, the deflator of domestic demand and consumer prices. The correlations are much weaker for the export and import deflators. The correlations have weakened after the financial crisis. Both observations confirm the findings of Bundesbank (2016a, p. 19) who however look at bivariate correlations between competitiveness indicators based on those prices which are dominated by nominal exchange rates.

[Insert figure 1 about here]

Due to the common monetary policy, the ECB can only focus on the average price level. If national wage and price developments deviate from the average, monetary policy becomes pro-cyclical, supporting self-reinforcing divergent economic developments that contribute to increasing current account imbalances between euro area countries.

Wage increases above productivity lead to increasing unit labour costs. If unit labour costs increase by more than for foreign competitors (which are mainly from the euro area and the rest of the European Union), they can affect net exports (and thereby the current account) via three different channels:

1. Higher than average unit labour costs increases induce higher than average price rises that decrease real interest rates, incentivising c.p. investment, a component of aggregate demand, thereby pushing imports.
2. Higher than average unit labour costs increases induced by higher wage rises promote c.p. aggregate demand, thereby stimulating imports.
3. Unit labour costs are an important indicator for price competitiveness of exports. Higher than average unit labour cost increases c.p. dampen exports.

³ Interestingly Mr Draghi has changed the focus in later speeches to the role of weak demand resulting from (too) moderate wage increases in explaining the insufficient level of inflation at the euro area level, a topic of growing concern. This went hand in hand with calling for improving competitiveness by structural reforms on product markets and innovation policies to increase total factor productivity instead of labour market reforms aiming at moderating wage increases (see e.g. Draghi 2015, 2017).

While several authors point to the (inverse) correlation of euro area current account imbalances and unit labour cost developments up to the financial crisis (see IMF 2013, EC 2013, Gaulier/Vicard 2012, and Fig. 1), the relevance of wage developments for imbalances remains controversial as well as the main channel for wages to affect net exports. In addition, the current account does not only comprise the net exports balance, but also the income and the transfer balance. Yet, as net exports dominate the development of current account balances for most euro area countries⁴, the article does not differentiate between current account balances and net exports in the argumentation. We will briefly report the discussion on determinants of current account imbalances, in order to stress the role of wage developments and potentially positive effect of a wage rule, without neglecting other determinants. Yet, our main aim is to stress the role of distributional factors implied by the violation of the wage rule over the price factors, portrayed in the next section.

2.1 Net exports and unit labour costs since 1999

Figure 2 shows the developments of current account balances of selected peripheral euro area countries that have been characterised by increasing current account deficits up to the financial crisis and the resulting worldwide recession in 2009. Since the year 2009, deficits decreased in all peripheral countries presented (Greece, Ireland, Italy, Portugal, and Spain) and turned positive from 2013 onwards, with the exception of Greece. Yet, even Greece has since then managed to meet the threshold of -4% of GDP specified in the scoreboard of the Macroeconomic Imbalance Procedure of the EU (EU 2016, p. 40).

[Insert figure 2 about here]

The dominant explanation for the increase in current account deficits (and the euro crisis) in Spain, Ireland, Italy, and Portugal has been channel 3, the loss in price competitiveness, identified by increasing unit labour costs that promoted the deterioration of net exports. The annual rise in peripheral countries during 2000 and 2007 was well above the euro area average of 1,7%, especially for Greece and Ireland with 3,7 % as well as for Spain with 3.4%. Italy experienced an increase by 2,9 % and Portugal by 2.3 % (AMECO, own calculations).

The resulting recommendation to overcome the crisis is to improve competitiveness by decreasing unit labour costs (IMF 2013, EC 2013). Yet, even the cited institutions observe that the decrease in unit labour costs since the financial crisis has not been in line with final price developments. Instead, increasing capital gains have offset decreasing wage costs. Gaulier/Vicard (2012) criticize this explanation and stress that the imbalances are rather a reflex of asymmetrical demand shocks than of competitiveness losses in these countries. They argue that export performances in peripheral countries have been in line with other more successful euro area countries. According to the authors, overall unit labour costs and price developments mask very different sectoral developments within the countries that explain the low correlation between exports and ULC (a finding supported by Altomonte et al. 2013 for Spain). Similarly, Felipe/Kumar (2014) criticize the misleading role of unit labour costs as competitiveness indicator. They instead discuss the distributional effects of changes of this indicator (see section 3 below).

Figure 3 shows exports and imports developments of the selected peripheral euro area countries. As can be seen, export growth has been strong up to the financial crisis. Ireland even surpassed euro area growth of about 60% between 1999 and 2007, while Greece mimicked the average performance.

⁴ Net exports dominate current account balances for all countries selected in this paper, except for Ireland, where net exports and net income balances are of same magnitude, but have opposite signs (see Figure A3 in appendix).

Spain's, Italy's and Portugal's exports grew at lower rates. Yet, up to the financial crisis, but except for Italy, peripheral countries mostly managed to keep their export market shares stable relative to world exports of goods and services (see Eurostat: tipsex20). This challenges the importance of the price-competitiveness channel to explain the imbalances in the peripheral countries.

[Insert figure 3 about here]

2.2 Net exports and demand since 1999

One line of criticism discusses the use of overall wage and unit labour costs developments. This would at least require a concentration on private sector wages, excluding the high public sector wages of peripheral countries (see Bundesbank 2016b), at least for measuring competitiveness. Yet, not even average wage and unit labour costs developments for individual sectors may correctly indicate competitiveness, as averages may hide inter-firm differences (ECB 2015). Gaulier/Vicard (2012) stress that wage developments in non-tradable sectors (instead of export-oriented manufacturing sectors) triggered the overall increase in unit labour costs and prices. This pushed domestic demand and thereby imports, which is reflected in strong correlations between unit labour costs and imports. Our updates of their calculations for the post-crisis period⁵ supports this view and points to the relevance of demand effects (see Figure 4). Up to the financial crisis, unit labour costs in manufacturing, the tradable sector, grew at a slower pace than in the rest of the economy in all five periphery countries (see AMECO: PWC-series).

[Insert figure 4 about here]

There is a broad consensus about the factors that determine (real) exports and (real) imports.⁶ Both sides of the trade balance are explained by an activity variable (foreign demand for exports and domestic demand for imports) and a price variable (relative prices). Estimates for the income elasticity of exports are twice as high as the price elasticity. Yet, both variables have a significant influence on exports. The estimated price-elasticities for imports are weaker than for exports. An explanation for low price-elasticities of imports are commodity imports (that are difficult to substitute) and the increasing import-content of exports due to global value chains. At the same time, estimated income elasticities are high and significant.⁷

Consequently, improving price competitiveness through moderate unit labour cost developments is expected to improve (real) exports, while the price effect on imports is expected to be much weaker. In addition, price effects of nominal trade have to compensate for volume effects: Even if an improved price competitiveness increases exports and decreases imports, volume effects might be more than compensated by higher nominal import prices and lower export prices in the short run (see Horn et al. 2017 for Germany).

According to these estimates, the indirect effect through domestic demand for imports and foreign demand (of other EMU countries and the rest of the world) for exports is expected to be more relevant than price competitiveness. Yet, this is not to say that wage developments in peripheral countries have not played a role for demand: As an important factor for domestic demand, they partly explain the

⁵ See chart 4, p. 13, in their publication, calculated on the period 2008-2011.

⁶ See Bundesbank 2016a and Horn et al. 2017 for new estimations and an overview of the existing literature.

⁷ See Horn et al. 2017 for Germany and Bobeica et al. 2016 for individual EMU countries with different price variables and Lommatzsch et al. 2016 for other competitiveness indicators based on value added rather than gross values.

better demand developments in these countries before the crisis (see Table 1), contributing to higher import growth. After crisis, peripheral countries have suffered from comparatively low(er) growth in the rest of the euro area (Table 1). Gaulier/Vicard (2012) find a strong correlation between unit labour costs and import developments before and after crisis that we confirm with updated data (Figure 4).

[Insert table 1 about here]

2.3 Other factors

Other factors affecting the current account balances are non-price competitiveness, the structure of export products, growth in export destination countries and, as a result, demand from these countries (Altomonte et al. 2013, Karadeloglou/Benkovskis 2015 for overviews).

Price competitiveness of exports can be measured by indicators like unit labour costs, relative real exchange rates, or the export price index. Yet, other factors also play a role for competitiveness that are harder to measure (see the overview by Karadeloglou/Benkovskis 2015). Three levels are considered: the firm level (size, technological capacities, ...), the macroeconomic environment in which firms operate (taxation, financing constraints, R&D support...) and the geographical location of the country that can explain geographical as well as product specialization (Altomonte et al. 2013). The problem is that all those factors are important, but difficult to measure, as are their effects. Karadeloglou/Benkovskis (2015, p. 30 following the methodology of Benkovskis/Wörth 2012) estimate that the non-price competitiveness increased in Greece and Spain between 2000 and 2012, but declined in Ireland. For Italy, they find a much smaller decline and almost no change in Portugal.

Export destination countries and the export structure also play an important role: The demand effects can be magnified by asymmetric demand shocks as described in Gaulier/Vicard (2012) if the periphery countries are specialized in products that are subject to sharply increasing competition within and outside the euro area. The authors point to the case of textile and agricultural products or tourism as examples for goods and services under higher competition due to globalization.⁸ Export may also be subject to adverse business cycle shocks once export destination countries experience a business downturn.

Another factor affecting competitiveness are profit margins that will be discussed below in more detail: Price competitiveness depends on production costs. Yet, effects on export prices do not fully reflect wage costs and other costs, as production costs are not completely passed through to final export prices. As a result, wage corrections would not lead to improving competitiveness and exports, if profit margins increase in times of decreasing wages (and other costs). Such an increase in profit margins would reflect adverse distributional effects. Next section focuses on this issue.

3. Wages and prices

As has been shown in the previous section, several factors influence net exports, and, by this, current account developments. Wage developments, or, to be more precise, unit labour costs developments are only one factor of many, albeit an important one: as explained above, wages are a relevant cost factor, affecting domestic price levels as well as price competitiveness of exports. At the same time, they are an important factor for domestic demand, be it for consumption demand out of labour income or be it via affecting real interest rates for credit-financed demand. Deviations from euro area averages

⁸ See Felipe/Kumar 2014 for similar arguments based on calculations of the product complexity for the peripheral countries.

lead to pro-cyclical monetary policy that contributes to self-reinforcing divergent economic developments and current account imbalances in the monetary union.

As the demand aspects has proven to be very important we discuss now how a wage rule that regard both aspects (cost and demand) in opposition for ex. to the thresholds of the MIP scoreboard that are heavily biased to the costs aspects could therefore contribute to less divergent developments, stabilizing the euro area. Yet, the effect of such a wage rule would depend on the contribution of wage costs to final prices. Neither are wages and unit labour costs perfectly correlated, nor are wage costs fully rolled over to final price levels. The following section concentrates on the development of unit labour costs and a broad price indicator for domestic prices, the GDP deflator.⁹

3.1 Imported inflation

Price increases of all peripheral countries discussed in this article have been above the average level of the euro area up to the financial crisis. Since then, price rises are below euro area levels. It is therefore important to eliminate the effect of an alternative cause, imported inflation, especially from oil price variations. Due to a different production structure and differences in oil dependency ratios¹⁰, one might suspect that high oil price increases up to the crisis (and lower levels since then) have contributed to observable inflation differences between peripheral and core euro area countries.¹¹

The pre-crisis high (and post-crisis lower) oil price costs are reflected in a post-crisis decrease of national nominal effective exchange rates, especially for Greece (see AMECO: XUNNQ). This calls for an analysis of the relevance of imported inflation in contrast to domestic production costs for final price levels. While such a distinction is not possible for the harmonized inflation rate of consumer prices (HICP), the national accounts allow for calculating cost contributions to price deflators of final demand.

According to price deflators for final demand, the role of imported inflation has indeed decreased since the financial crisis. While the peripheral countries still import inflation to some extent, its relevance has declined. As a consequence, domestic cost developments play the main role for domestic price levels, at least since the aftermath of the financial crisis. Yet, an important exemption is Ireland, where imported inflation plays the main role, probably due to the high degree of openness of the country and its inclusion in global value chains (see AMECO: PUTT, YPUT0, YPUT6).

3.2 Unit labour costs and the GDP deflator

Table 2 shows the change of the GDP deflator for the peripheral countries for the entire period since the introduction of the euro up to the last available data, as well as its development for the pre-crisis period (2000-2007) and post-crisis period (2008-2016). The table also shows the contribution of wage costs (in the form of unit labour increases), profit costs, and costs from indirect taxation to the final

⁹ The choice of this price has two reasons: from national accounts, it is straightforward to decompose its movements along distributional aspects and it seems to be one of the price measures with highest explanatory content when explaining real exports (see literature cited before).

¹⁰ The oil dependency ratios, measured as net oil imports in % of GDP, of the five countries in 2000 range between 1.2 and 3.2 %, while the average of the rest of the euro area countries is 3.1%. In 2016, the figures are slightly higher for all countries, ranging between 1.5 and 5.8% compared to the rest EA-average of 4.4%. See Figure A1 in Appendix for oil dependency.

¹¹ According to international data (FRED, EIA, IMF), the crude oil price (UK-Brent in €) increased by more than 260% between 2000 and 2007. 2008 marked an increase by additional 40%. Since then, it has decreased by almost 70% (Figure A2 in Appendix).

price deflator. Profits refer to gross operating surplus according to national accounting.¹² We follow a method described and implemented for Austria and Germany by Feigl/Zuckerstätter (2013) to decompose the contribution of each component to the GDP-inflation rate and to derive target values that can be interpreted as the should-be-contributions if the wage rule would have been realized.

[Insert table 2 about here]

As can be seen in Table 2, all peripheral countries experienced rather high price deflator increases, ranging from 20% in Italy to more than 30 % in Spain during the pre-crisis period. An increase in line with the inflation target of the ECB (even though officially addressing HICP inflation) would have allowed an increase during 2000 and 2007 of only 15%. During the post-crisis period, the countries undershot the inflation target: The GDP deflator only rose by one-digit levels between 2008 and 2016, and even turned negative for Greece, while the ECB's target requires an increase of 17 % for this period.

Looking at the contribution of wages, profits, and indirect taxes to the final GDP price deflator, the "target" rate indicates the recommended increase for each component that would have been in line with a stable distribution (constant nominal shares of each component) and the inflation target of the ECB. Had the increase of all components been in line with the target rate, distributional effects between functional income groups (wage income vs. capital income) had not occurred and inflationary as well as deflationary tendency would not have been observed.

Not surprisingly, and in line with IMF and European Commission claims of too high wage increase (see IMF 2013, EC 2013), unit labour costs rose by more than recommended during the pre-crisis period. They reached two times the recommended target rates in Ireland, Greece, and Spain, and were still more than 2.5 %-points above adequate growth rates for Italy and Portugal. Interestingly so, the same holds for profits, that also exceeded recommended growth, albeit by a smaller margin.

Since the start of the post-crisis period, this picture has completely reversed for unit labour costs: Their growth rates are below recommended target rates for all selected countries, and even negative for Ireland, Greece, and Spain. Profit developments vary between countries: Ireland is the only country where profit increased at double the target rate, despite of decreasing price contributions from wages. All other countries with the exception of Greece are characterized by a positive contribution of profits to domestic prices, yet below target levels.

3.3 Distributional effects of price changes

According to the overview on inflation theories by Mark Setterfield, conflicting claims theory explains the resulting inflation in a country by the interplay of increasing wages and profits. A cost-push shock, stemming from wage increases, will only lead to inflation if firms do not accept lower profits, rolling over the increased wage costs to final prices. The same holds the other way round, if wage earners do not accept a decreasing wage share as a result of an increased profit mark-up. As a consequence, inflation can be profit-led or wage-led (Setterfield 2002), and very much depends on the bargaining power of workers. Whatever the initial trigger, inflation will result in reduced economic activity (Setterfield 2002).

"Conflicting claims theory suggests that, if it is to succeed, an incomes policy must be founded on a distribution of incomes that is mutually accepted as fair." (Setterfield 2002, p. 348). If firms and workers could agree to a certain distribution of wages and profits, the suggested wage rule would guarantee

¹² In the national accounts from AMECO, the nominal GDP is the sum of the domestic wage sum (compensation of employees), gross operating surplus and net taxes on Imports/production.

the maintenance of this distribution over the medium-run. This would avoid changes in the functional income distribution.

In retrospect, peripheral countries would be in a less severe crisis, had pre-crisis profits and wages developed according to productivity and the ECB's inflation goal. As wage developments were singled out as the main culprit after the financial crisis, most of the adjustment was expected to stem from decreasing unit labour costs, harming the bargaining power of employees. This allowed profits to increase even in the face of decreasing wage costs.

Yet, as the peripheral countries' experience also shows, not only wages, but also profits, would have to stick to such a rule. If profits increase by more than productivity and the ECB's inflation target, the wage share can decrease even in the case of wage increases above the wage rule.

4. Conclusion

Analysing current account, wage, and price developments for peripheral countries of the euro area during the period 1999-2016, we find evidence that the countries would have benefitted from a wage rule. Wages are a relevant production cost. Increasing unit labour costs above the level of trade partners have the potential to decrease price competitiveness of exports. At the same time, wages are an important factor for demand developments, indirectly affecting imports. Higher than average wage inflation decreases real interest rates (via domestic prices) and thereby investment costs, indirectly stimulating domestic demand and thereby imports. At the same time, wages themselves are an important component of domestic demand for consumption and thereby important factors for imports.

Unit labour costs developments in a monetary union are therefore crucial for current account balances. Our analysis shows that divergent wage developments are more important than other effects like oil price fluctuations. A wage rule that recommends wage increases to be in line with productivity and the ECB's inflation goal would thereby contribute to dampening current account imbalances in the euro area.

Yet, this would require that all monetary union members follow this rule. The wage rule refers to own country's average productivity and the ECB target inflation rate. However, if important trading partners like Germany permanently deviate from the targeted inflation rate of near 2% (1999-2007: 1.68% p.a. vs. 2.22% p.a. for the Euro Area), even a country following the rule like France will lose price competitiveness as the target moves implicitly from the official ECB rate to the unofficial average of the relevant competitors.

At the same time, unit labour costs are strongly correlated with domestic price levels, above all with the GDP price deflator. If all member countries followed the wage rule, national inflation rates would show less divergence, thereby easing the problem of pro-cyclical effects of monetary policy. This would improve the conditions for monetary policy transmission in the euro area, supporting the ECB to promote growth friendly measures rather than to focus strongly on inflation targeting.

A wage rule could also dampen changes in the functional income distribution between capital and labour stemming from price effects. Yet, our analysis also shows that it is not enough if only wages follow this rule. The income distribution would only remain stable, if also profits (i.e. the profit mark-up) develops in line with national productivity and the target inflation rate.

How realistic is such a rule? It would definitely require a social agreement for a fair distribution between functional income groups. This is the more important as such a rule would be more difficult to implement than the Taylor rule for monetary policy or the Golden rule for investment, as more than

one relevant actor is affected. Without a general national and euro-wide consensus, the medium-term implementation seems unrealistic. Yet, a first start could consist in implementing such a rule for wages and profits into the scoreboard for macroeconomic imbalances.

References

Altomonte, C.; di Mauro, F.; Osbat, C. I.: (2013): "Going beyond labour costs: how and why 'structural' and microbased factors can help explaining export performance?" COMPNET Policy Brief 01/2013, January.

Benkovskis, K.; Wörz, J. (2012): "Non-Price Competitiveness Gains of Central, Eastern and Southeastern European Countries in the EU Market," Focus on European Economic Integration, Q3/12, pp 27-47.

Bobeica, E.; Christodouloupoulou, S.; Tkačevs, O. (2016): "The role of price and cost competitiveness for intra- and extra-euro area trade of euro area countries", Working Paper No. 1941, European Central Bank.

Bundesbank (2016a): "Der Einfluss alternativer Indikatoren der preislichen Wettbewerbsfähigkeit auf den realen Güterexport", Monatsbericht, Januar, pp. 13-31.

Bundesbank (2016b): „Wage dynamics amid high euro-area unemployment“, in: Monthly report, December, pp. 33-54.

Draghi, M. (2013): "The euro, monetary policy and reforms". Speech, on receiving an honorary degree in political science, LUISS "Guido Carli" University, Rome, 6 May 2013.

Draghi, M. (2015): "Structural reforms, inflation and monetary policy", Introductory speech, ECB Forum on Central Banking, Sintra, 22 May 2015.

Draghi, M. (2017): "Monetary policy and the economic recovery in the euro area", Speech, at The ECB and Its Watchers XVIII Conference, Frankfurt am Main, 6 April 2017.

EU (2016): "The Macroeconomic Imbalance Procedure: Rationale, process, application: a compendium", November, Brüssel. KC-BC-16-039-EN-N, DOI: 10.2765/958247.

European Central Bank (ECB 2003): "Euro area inflation differentials", Frankfurt: European Central Bank, September 2003. <https://www.ecb.europa.eu/pub/pdf/other/inflationdifferentialreporten.pdf>

European Central Bank (ECB 2015): "Wages, productivity, and competitiveness. A granular approach", Box 5, in: ECB economic bulletin, Issue 8, pp. 1-3.

European Commission (EC 2013): "Special topics on the euro area economy: Labour costs pass-through, profits, and rebalancing in vulnerable Member States", in: Quarterly Report on the Euro Area, Vol. 12, No. 3, Ch. II, pp. 19-25.

Feigl, G.; Zuckerstätter, J. (2013): „Wettbewerbs(des)orientierung“, WWWforEurope Policy Paper, Nr. 2 (April).

Felipe, J.; Kumar, U. (2014) "Unit Labor Costs in the Eurozone: The Competitiveness Debate Again". Review of Keynesian Economics, Vol. 2 No. 4 (Winter), pp. 490–507.

Gaulier, G.; Vicard, V., (2012): "Current account imbalances in the euro area: competitiveness or demand shock?", Quarterly selection of articles - Bulletin de la Banque de France, issue 27, pp. 5-26.

Gerlach, S.; Schnabel, G. (1999): "The Taylor rule and interest rates in the EMU area: a note". BIS Working Paper, No. 73.

Heine, M.; Herr, H. (1999): „Verdrängte Risiken der Euro-Einführung“, in: WSI-Mitteilungen: Zeitschrift des Wirtschafts- und Sozialwissenschaftlichen Instituts in der Hans-Böckler-Stiftung, Bd. 52, H. 8, pp. 539-547.

Herr, H.; Horn, G.A. (2012): „Lohnpolitik heute“, IMK Policy Brief, Mai.

Horn, G. A.; Logeay, C. (2004): „Kritik am lohnpolitischen Konzept des SVR“, in: Wirtschaftsdienst, Bd. 84, H. 4, pp. 236-242.

Horn, G.; Lindner, F.; Stephan, S.; Zwiener, R. (2017): „Zur Rolle der Nominallohne für die Handels- und Leistungsbilanzüberschüsse. Eine ökonometrische Analyse für Deutschland“, IMK Report Nr. 125, April.

Horn, Gustav A.; Scheremet, W.; Zwiener, R. (1999): Wages and the Euro. Physica-Verlag, Heidelberg.

International Monetary Fund (IMF 2013): “Rebalancing the Euro Area: Where do we stand and where to go?” in: IMF Country Report No. 13/232, Euro Area Policies, 2013 Article IV Consultation, pp. 21-44.

Karadeloglou, P.; Benkovskis, K. (eds., 2015) and the CompNet Task Force: “Compendium on the diagnostic toolkit for competitiveness”, ECB Occasional Paper Series No. 163.

Lommatzsch, K.; Silgoner, M.; Ramskogler, P. (2016): "Trade in value added: do we need new measures of competitiveness?", Working Paper Series 1936, European Central Bank.

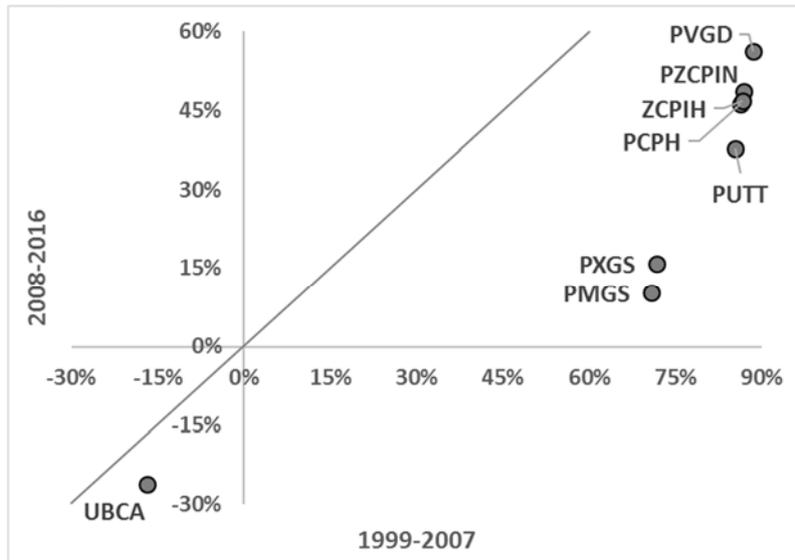
Setterfield, M. (2002): “Inflation: Alternative Theories”, in: Snowdon, B./Vane, H. R. (eds.): An Encyclopedia of Macroeconomics, Cheltenham, pp. 345-351.

Truger, A. (2016): “Reviving fiscal policy in Europe: towards an implementation of the golden rule of public investment”, in: European Journal of Economics and Economic Policy: Intervention, Vol. 13, no. 1, pp. 57-71.

Ullrich, K. (2003): “A comparison between the Fed and the ECB: Taylor rules.”, ZEW Discussion Paper, No. 03-19.

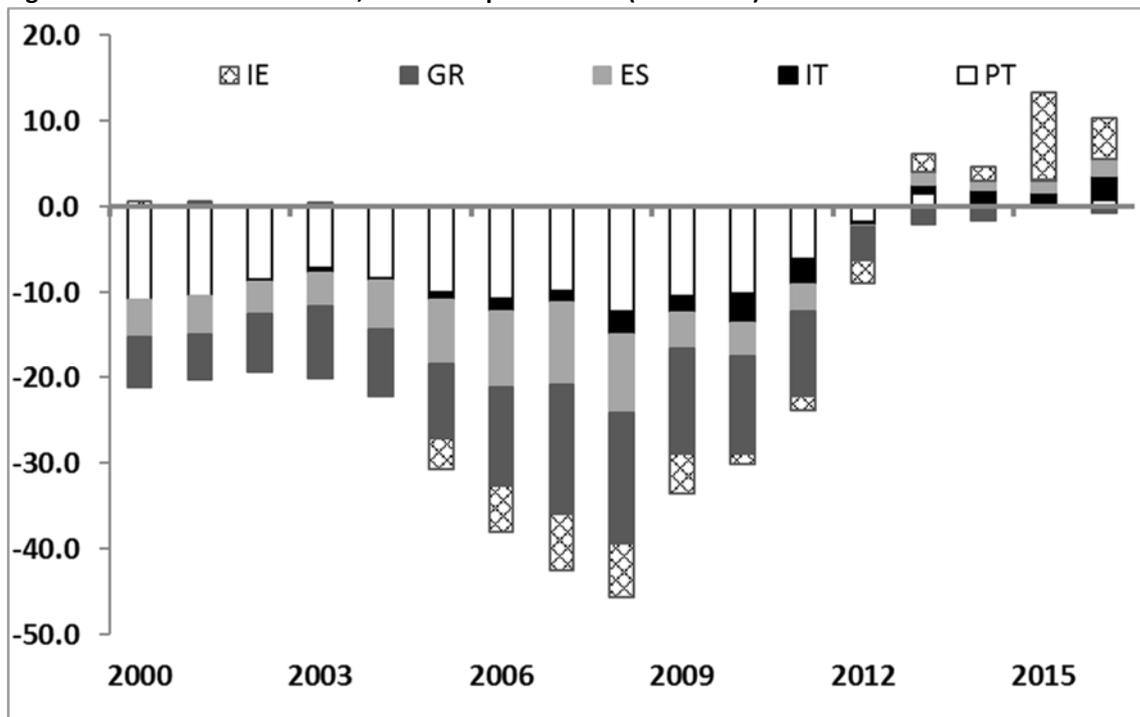
Figures and Tables

Fig. 1: Bivariate correlations between selected price aggregates and unit labour costs (33 European countries), before and after crisis



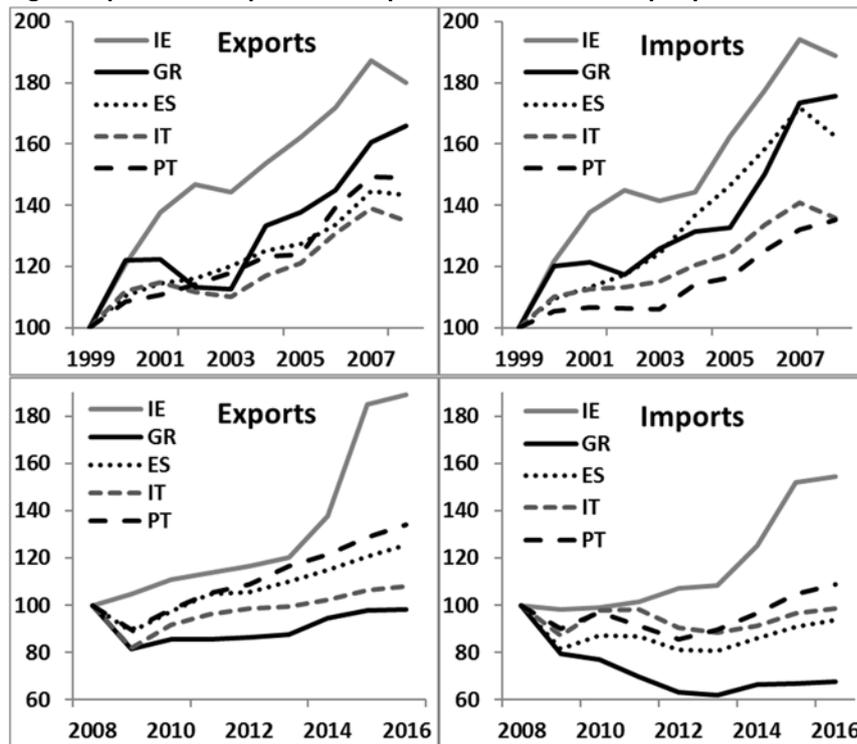
Calculated on the year on year growth rates for: PXGS=Defl. Exports, PMGS=Defl. Imports, PVGD=Defl. GDP, PUTT=Defl. Final Demand, PCPH=Defl. Priv. Consumption, PZCPIN=nat. Consumer Price Index, ZCPIH=har. Consumer Price Index, PLCD=nom. Unit labour costs. Calculated on absolute yearly differences for UBCA=Current Account Balance in % of GDP. Source: AMECO (variables named after the AMECO code); data download: May 2017.

Fig. 2: Current account balance, in % of respective GDP (2000-2016)



Source: IMF (WEO, Apr. 2017)

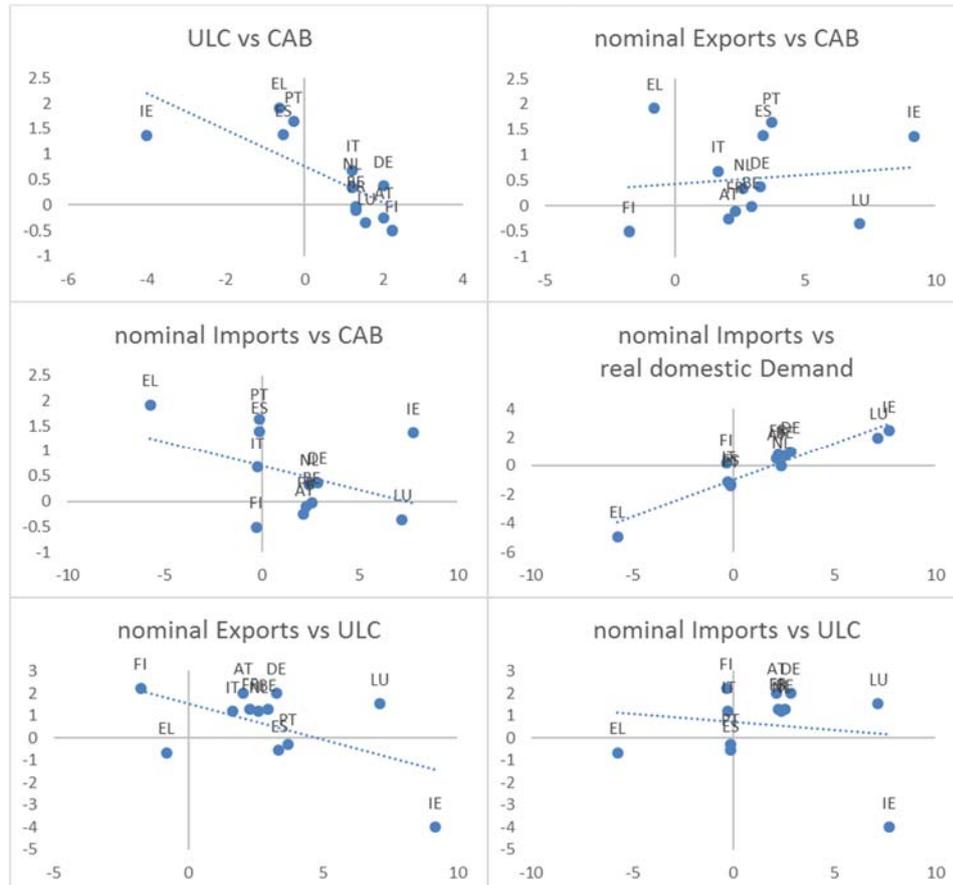
Fig. 3: Exports and imports developments of the selected peripheral euro area countries



Source: AMECO (OXGS, OMGS; data download: May 2017)

Fig. 4: Correlations of price and trade indicators, update of Chart 4 from Gaulier/Vicard (2012)

First Name = X-axis CAB (current account balance): average abs. difference between 2008 and 2016 in pp
 Second Name = Y-axis Other variables: annualized growth rate between 2008 and 2016 in % p.a.



Source: AMECO (UCBA, PXGS, OXGS, PMGS, OMGS, OUNT, PLCD), data download: May 2017

Tab. 1: Domestic Demand (Consumption, Investment and Inventories)

	2000-2016		2000-2007		2008-2016	
	Crisis country	EA12-w/o crisis country	Crisis country	EA12-w/o crisis country	Crisis country	EA12-w/o crisis country
Ireland	3.48%	0.73%	5.76%	1.71%	2.49%	0.00%
Greece	-0.65%	0.80%	4.46%	1.71%	-4.92%	0.17%
Spain	1.20%	0.73%	4.35%	1.47%	-1.27%	0.23%
Italy	-0.08%	0.95%	1.27%	1.89%	-1.11%	0.29%
Portugal	-0.21%	0.79%	0.97%	1.80%	-1.38%	0.08%

Source: AMECO (UUNT, OUNT, own calculations; data download: May 2017)

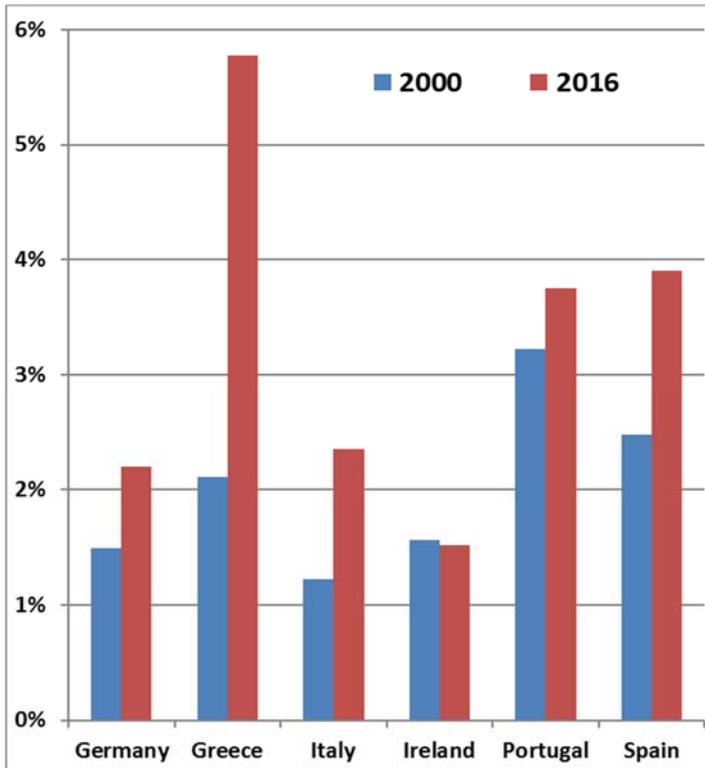
Tab. 2: Inflation decomposition for peripheral countries after/before crisis (2000-2016)

		IE	GR	ES	IT	PT
		Total (%)				
2000-2007	Actual	26.4%	24.8%	31.0%	19.7%	25.7%
	target	14.9%	14.9%	14.9%	14.9%	14.9%
2008-2016	Actual	1.9%	-1.6%	1.6%	9.0%	8.0%
	target	17.2%	17.2%	17.2%	17.2%	17.2%
2000-2016	Actual	28.2%	28.1%	35.8%	33.8%	38.1%
	target	37.3%	37.3%	37.3%	37.3%	37.3%
		Wages (pp)				
2000-2007	Actual	11.4%	10.8%	13.8%	8.6%	9.5%
	target	5.4%	4.7%	6.9%	5.4%	6.9%
2008-2016	Actual	-11.6%	-1.3%	-2.0%	4.0%	0.2%
	target	6.5%	5.6%	8.1%	6.5%	7.5%
2000-2016	Actual	1.4%	11.6%	14.8%	14.9%	11.2%
	target	13.2%	11.3%	16.7%	13.1%	16.0%
		Profits (pp)				
2000-2007	Actual	10.0%	10.2%	11.8%	7.7%	10.5%
	target	7.4%	8.2%	6.0%	7.2%	5.7%
2008-2016	Actual	17.3%	-3.5%	1.1%	3.3%	5.5%
	target	8.5%	9.0%	7.0%	7.9%	6.9%
2000-2016	Actual	26.3%	8.1%	14.1%	12.5%	17.1%
	target	17.8%	19.2%	14.4%	16.7%	14.0%
		Indirect taxes (pp)				
2000-2007	Actual	3.3%	2.4%	3.2%	2.6%	4.1%
	target	1.5%	1.5%	1.4%	1.8%	1.7%
2008-2016	Actual	-2.4%	3.2%	2.4%	1.5%	2.2%
	target	1.4%	1.9%	1.4%	2.1%	2.0%
2000-2016	Actual	-0.5%	6.3%	3.9%	3.6%	6.3%
	target	3.2%	3.7%	3.1%	4.1%	4.0%

Source: AMECO (OVGD, UVGD, UWCD, UOGD, UTVN), own calculations; data download: May 2017

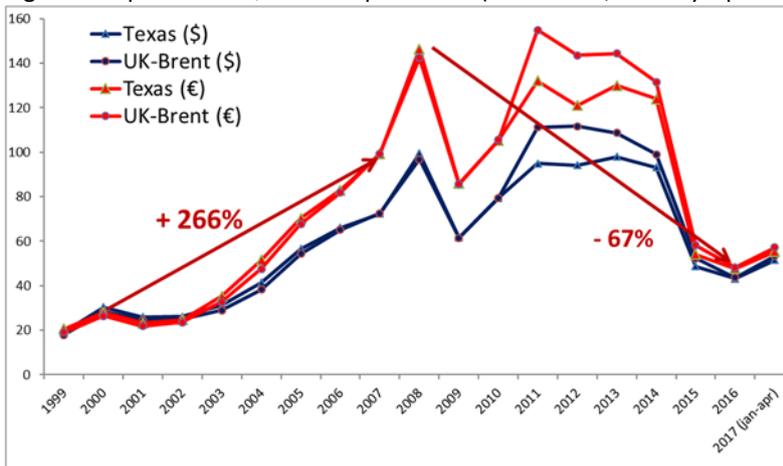
Appendix

Fig. A1: Oil dependency (net oil imports in % of GDP)



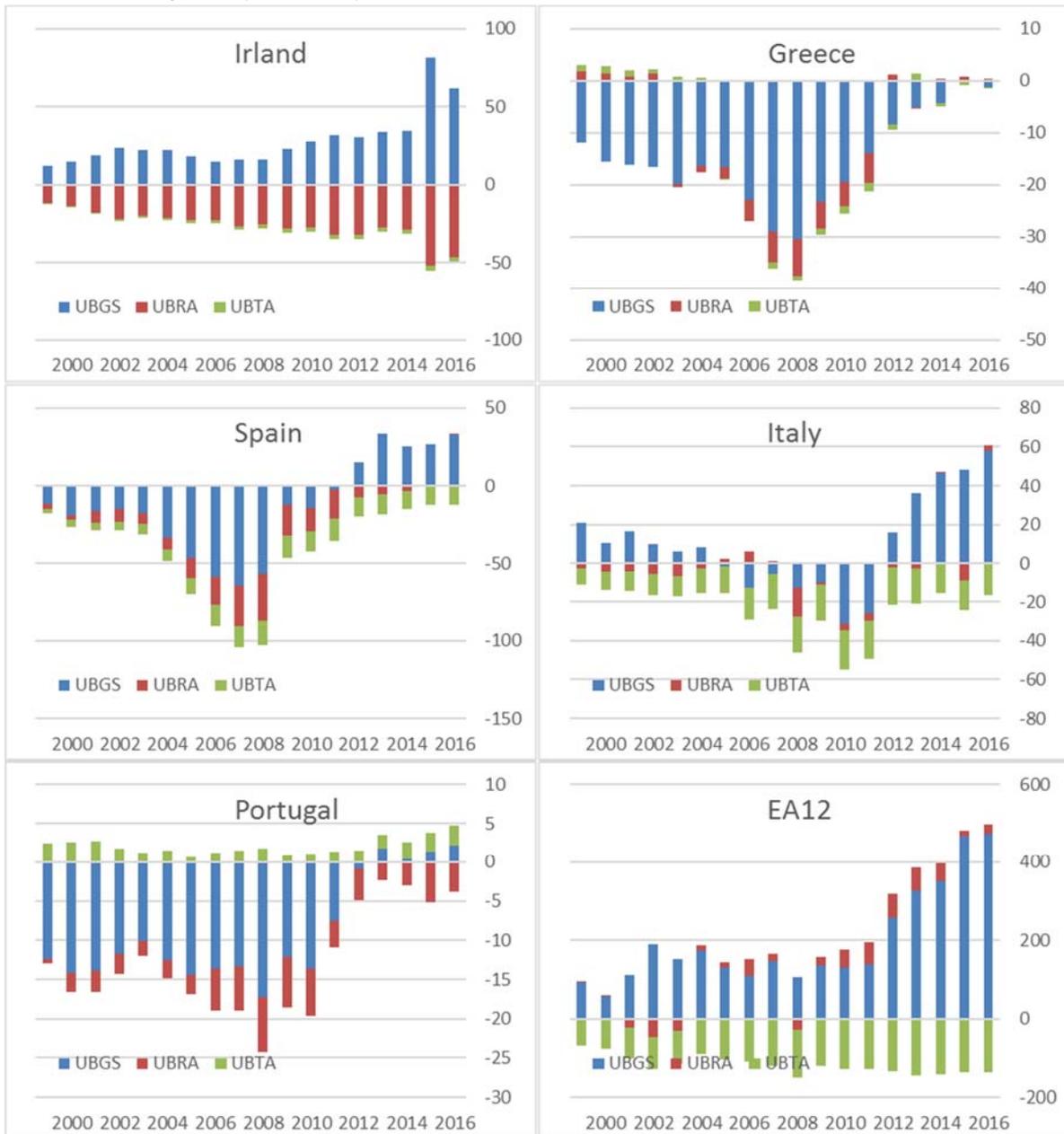
Source: IMF (WEO, Macrobond, own calculations). data download: May 2017

Fig. A2: Oil price in US-\$ and in € pro Barrel (1999-2016; January-April 2017)



Sources: EIA and FRED, own calculations. data download: May 2017

Fig. A3: Components of the current account balance in the crisis countries and the euro area (12), in billion of national currency/euro (1999-2016)



UBCA (current account balance) = Net exports of goods and services (UBGS) + Net primary income from the rest of the world (UBRA) + Net current transfers from the rest of the world (UBTA)

Source: AMECO (UBCA, UBGS, UBRA, UBTA), data download: May 2017