

Wolff, Guntram B.

**Research Report**

## Arithmetic is absolute: Euro-area adjustment

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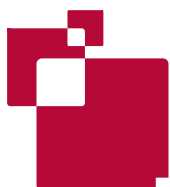
# ARITHMETIC IS ABSOLUTE: EURO- AREA ADJUSTMENT

GUNTRAM B. WOLFF

## Highlights

- The European Central Bank's monetary policy addresses the euro-area average inflation rate. By setting conditions for the area as a whole it should ensure symmetric price adjustment. Indeed, consumer price inflation rates provide little evidence of asymmetric adjustment during 2009-11. Only Ireland, which is too small to trigger a symmetric reaction, had significantly lower inflation rates. Some asymmetry is visible in total economy unit labour costs (ULC), but ULC developments are largely disconnected from consumer price inflation. Wage developments have been more symmetric, but are also disconnected from inflation rates.
- Monetary policy therefore cannot do more to react to the southern euro-area recessions. Rigidities need to be removed so that recessions lead to lower prices. European Commission forecasts suggest that Greek inflation rates can be expected to fall, but Italian and German inflation rates will not adjust in the right direction during 2012-13. Less inflation in Italy and more inflation in Germany are urgently needed.

**Guntram B. Wolff** ([guntram.wolff@bruegel.org](mailto:guntram.wolff@bruegel.org)) is Deputy Director of Bruegel. Helpful comments on an earlier draft from Zsolt Darvas, Paul de Grauwe and Jean Pisani-Ferry are greatly appreciated. Excellent research assistance by Dana Andreicut is gratefully acknowledged.



## ARITHMETIC IS ABSOLUTE: EURO-AREA ADJUSTMENT

GUNTRAM B. WOLFF, MAY 2012

**THE DEBATE ON ADJUSTMENT IN THE EURO AREA** is becoming more heated and confused. The European Central Bank seems to argue that southern European countries can become more competitive while Germany would not become less competitive<sup>1</sup>. At the opposite end of the spectrum, Paul de Grauwe of the London School of Economics has argued that the adjustment is predominantly being done by the south [De Grauwe, 2012]. De Grauwe investigates relative unit labour costs, finding significant downward adjustment in Ireland and Greece and moderate adjustment in Spain. In contrast, in northern European countries, only a moderate deterioration in relative unit labour costs is found.

So is adjustment in the euro area asymmetric or symmetric? This Policy Contribution starts from a simple definition of symmetry which looks at the average inflation rate only, ignoring higher moments of the distribution. This approach is taken because monetary policy in the euro area aims to stabilise euro-area inflation, and euro-area inflation is the weighted average inflation rate of the countries of the euro area. A recession and lower inflation rates in one part of the euro area would mean that monetary policy conditions are too tight in this part, and too expansionary in the rest of the euro area. Inflation should rise in the part of the euro area where monetary policy is too expansionary, and this should lead to a symmetric adjustment.

A good definition of asymmetric adjustment would be that in this situation, the average inflation rate would fall (or increase). If it falls, inflation in some countries would fall while inflation in the others would stay unchanged – and vice-versa.

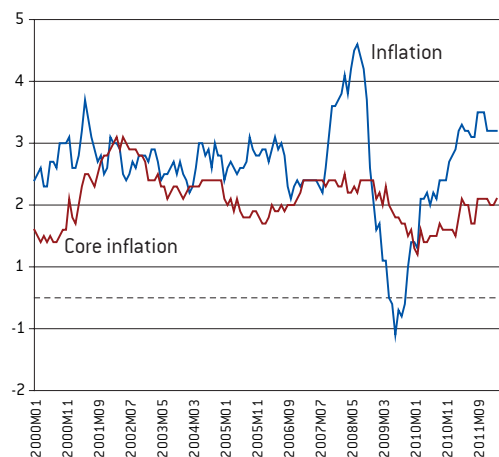
Alternatively, inflation could be expected to remain close to the goal set by the ECB for the euro area as a whole.

### ADJUSTMENT IN THE EUROZONE: SYMMETRIC OR ASYMMETRIC?

Figure 1 shows that inflation and in particular core inflation remains close to two percent. The figure does not provide strong evidence of asymmetry.

Consumer price index (CPI) inflation rates from individual countries give a better insight into the drivers of average inflation. Implicitly, they provide a distribution of inflation rates in the euro area. There is again no strong evidence for asymmetry. Figure 2 shows the average inflation rates during 2009-11. Ireland seriously undercuts the euro-area average but Greece, Spain and Italy stay above the average.

**Figure 1: Inflation and core inflation rate in the euro area**



Source: Eurostat. Note: CPI monthly data, annual rate of change.

1. See for example ECB (2012), available at <http://www.ecb.int/press/pr/essconf/2012/html/is120404.en.html>.

*'Is adjustment in the euro area asymmetric or symmetric? Consumer price index inflation rates from individual countries provide no strong evidence for asymmetry. Ireland seriously undercuts the euro-area average but Greece, Spain and Italy stay above the average.'*

Since these figures might have been distorted by the severe recession in 2009, Figure 3 focuses on 2011. Again, Greece, Spain, Italy and Portugal have inflation rates above the euro-area average, while France is below and Germany is at the average. These figures thus do not support the claim that the 'south' of Europe is adjusting while the 'north' of the euro area is not adjusting. In fact, neither the south nor the north appear to adjust.

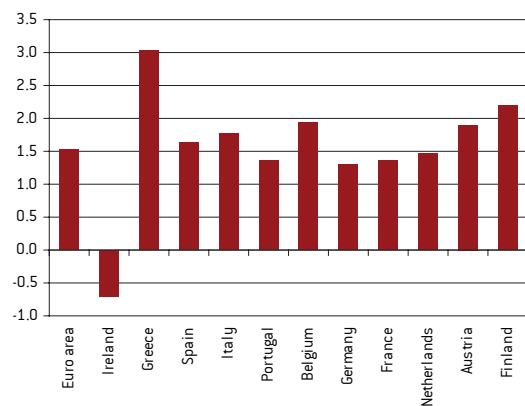
Inflation figures are affected by changes in taxation. Eurostat computes inflation rates adjusted to take account of the impact of such tax changes. Figure 4 plots the inflation rates adjusted for such tax effects.

Tax effects explain to some extent why CPI adjustment in some countries was weak. In Greece in particular, inflation adjusted for tax effects is below the euro-area average while overall inflation is, in effect, above. However, tax

effects do not change the overall picture that there is no strong evidence of asymmetry. In fact, Italy's higher inflation rate roughly compensates for Spain's lower inflation rate. More fundamentally, monetary policy does not take account of changes in inflation due to taxation. Finally, it is final prices, not pre-tax prices, that actually matters for competitiveness.

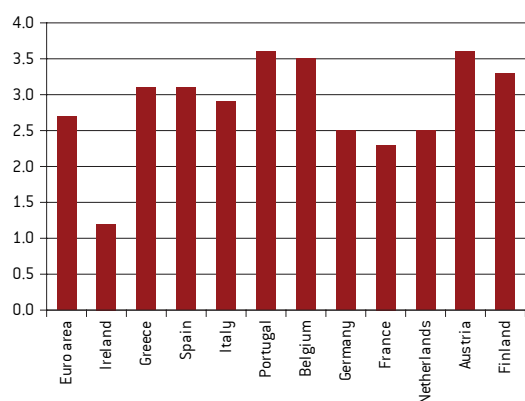
However, consumer price inflation is not the same as unit labour cost (ULC) developments. Figure 5 shows nominal ULC developments for the total economy during 2010 and 2011. There are significant falls in Greece, Ireland, Spain and Portugal relative to the euro area average. However, ULC in Italy remains above the average and German ULC is also slightly above the

Figure 2: Average CPI inflation rate, 2009-11



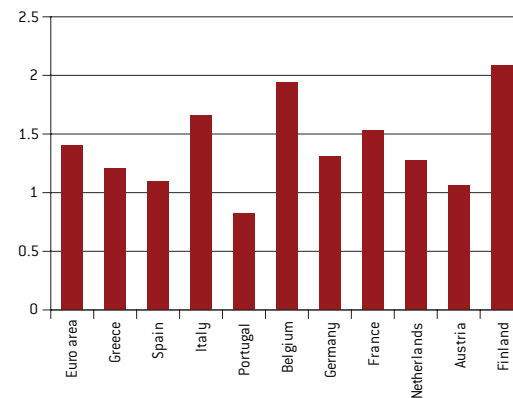
Source: Eurostat. Note: inflation measured as the average during 2009, 2010 and 2011.

Figure 3: Inflation rates in 2011



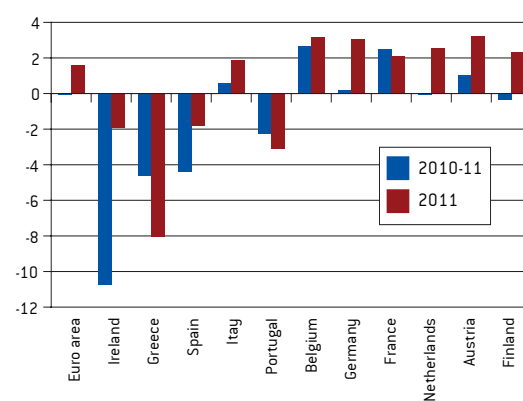
Source: Eurostat.

Figure 4: HICP inflation adjusted for tax effects, 2009-11 growth



Source: Eurostat, Harmonised Index of Consumer Prices (HICP). Note: Prices at constant tax rates for each month are computed by subtracting the taxes applicable in that month and adding the taxes according to the rates in force in the previous December. The figure for Austria is given for 2009-10 due to missing data.

Figure 5: Average ULC developments, 2010-11 and during 2011



Source: Ameco.

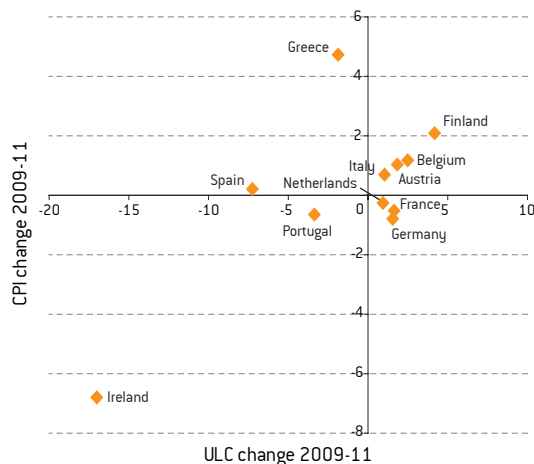
average. If the special effects resulting from the recession year 2009/10 are taken out and the focus is put on 2011, the picture looks quite symmetric in the sense that all countries of the north have ULC growth rates above the euro-area average and all countries of the south except Italy have ULC growth below the average.

Therefore, for ULC developments there is some evidence of a symmetric adjustment while for inflation we could not find any evidence of adjustment. Figure 6 helps visualise the relatively weak correlation between ULC and CPI inflation. It shows that the falls in ULC that are observed in Greece, Spain and Portugal do not translate into gains in terms of prices as measured by the CPI (a similar picture can be seen when looking at output prices). Only in Ireland have changes in ULC and CPI gone hand in hand.

This disconnection between ULC and CPI can be explained by a number of factors. Some ULC gains are due to massive lay-offs of unproductive workers, explaining the surge in unemployment. Here, ULC gains are 'artificial' in the sense that they do not solve the competitiveness problem. In fact, they appear to result from the lay-off of the least productive workers or cuts in employment in the least productive sectors. A quantification of the magnitude of this effect would be highly instructive.

The analysis can be refined by looking at developments in compensation per employee.

Figure 6: CPI and ULC Changes relative to the euro area, 2009-11



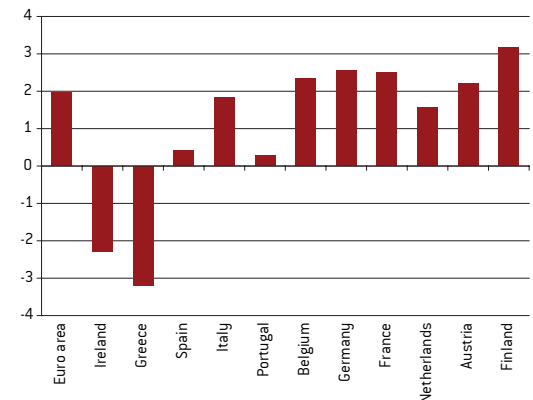
Source: Bruegel based on Ameco.

Figure 7 documents clear signs of a symmetric adjustment in this respect. Compensation per employee has fallen in Ireland and Greece and has also been below the euro-area average in Spain, Italy and Portugal. In turn, compensation has been above the euro area in Belgium, Germany, France, Austria and Finland.

However, these changes in labour compensation rates have again not been reflected by consumer price developments. Figure 8 relates the two variables and again no strong correlation can be detected.

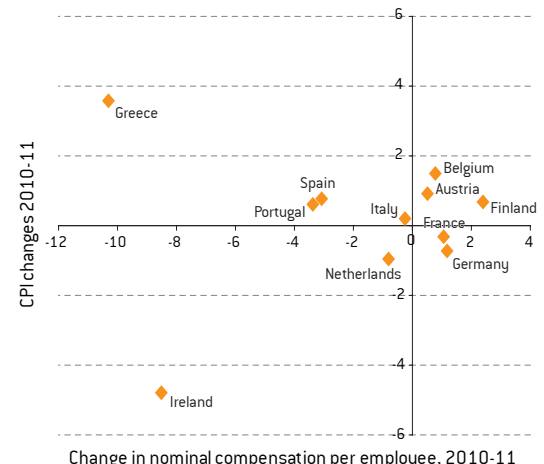
Looking forward, the overall picture remains worrying. The European Commission forecasts that CPI will grow below the euro-area average in Ireland, Greece, Spain and France during 2011-13 (Figure 9). German inflation is forecast to be at

Figure 7: Nominal compensation per employee: average annual changes, 2010-11



Source: Ameco.

Figure 8: Nominal compensation/employee and CPI changes 2010-11 relative to euro area average



Source: Bruegel based on Ameco.

the average, while Italy is expected to grow above the average. If the Commission forecast for Italy is correct, it would be a serious source of concern, because Italian inflation would largely offset lower inflation rates in Spain and Greece, leaving little scope for German inflation to increase. The Spanish situation is also quite worrying because its CPI inflation rate undercuts the euro-area inflation rate by an annual average of only 0.5 percentage points, which would imply a very drawn-out adjustment process. German inflation at the average is also not a good sign.

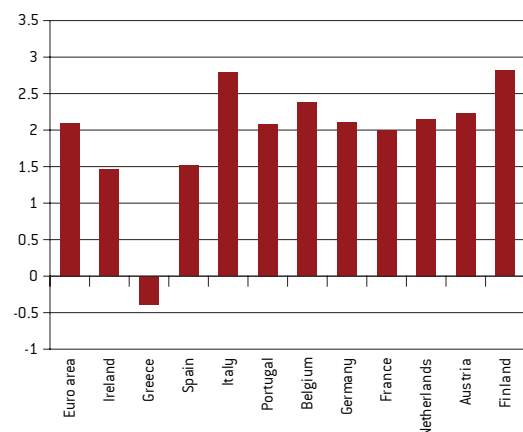
### CONCLUSIONS AND POLICY IMPLICATIONS

Overall, the data presented in this Policy Contribution shows that there has been very little adjustment in the euro area in terms of consumer prices. In addition there has been only a very modest adjustment of inflation adjusted for tax effects. The data also shows no evidence for asymmetric adjustment in inflation rates. Ireland records significantly lower inflation rates, but most other countries have been relatively close to the average. Looking forward, very significant adjustment in Greece is forecast, but adjustment in other countries remains weak, or is even moving in the wrong direction, such as in Italy and Germany.

At the same time, significant adjustment in ULC in Spain and Greece has been observed, suggesting some degree of asymmetry. More research is needed to better understand the striking disconnection between ULC and CPI<sup>2</sup>.

For wages, symmetric adjustment is observable

Figure 9: Average CPI inflation, 2012-13



Source: Ameco.

with compensation per employee falling below the euro-area average in southern euro-area countries, and compensation increasing above the average in northern euro-area countries. However, wage costs and unit labour costs, ie wage costs adjusted for productivity effects, remain highly disconnected from relative inflation rates.

The absence of a strong transmission mechanism between ULC and wage adjustments and inflation significantly hampers effective adjustment in the euro area. The deep recessions in Spain and Greece cannot lead to symmetric adjustment in other countries as long as Spanish and Greek consumer prices continue to rise above the euro-area average. Indeed, the main mechanism for achieving symmetry is to change average inflation expectations. This would lead to a monetary policy easing. This easing, in turn, will increase demand in Germany, leading to higher inflation rates in Germany, so that the average is stabilised. The euro area is thus in a difficult situation where severe recessions lead to massive lay-offs in some countries, but price levels do not move. This, in turn, prevents monetary policy from triggering higher consumer inflation in Germany. Artificially increasing German inflation rates would lead to a tightening of monetary policy if the ECB was to stick to its mandate. This in turn would aggravate the recession in the southern euro-area countries.

While monetary policy is currently made more difficult by the extraordinary stress in the financial system, this should not prevent the operation of adjustment mechanism via monetary policy. First, monetary policy has not yet reached the zero lower bound. Moreover, even if it reached the zero lower bound it could commit credibly to keeping rates low for an extended period of time, thereby reducing the longer-term rates. Second, while the monetary policy transmission channel may be impaired in the south of Europe, the key to our argument is that monetary policy will be expansionary in the northern countries in response to a drop in consumer price inflation. It is also imperative that macroprudential instruments are not used to dampen the credit boom in Germany, and monetary policy can play its full part.

A number of significant policy conclusions can be drawn from this analysis:

2. A forthcoming Bruegel paper [Darvas, 2012] will examine this issue.

- 1 **Differences in size matter.** Take a hypothetical monetary union consisting of Ireland and Germany only, with the latter being ten times larger. In such a monetary union, a reduction in inflation in Ireland by one percentage point will require an increase in inflation in Germany of only 0.1 percentage point if the average is to remain unchanged. Big adjustments in small countries will lead to only small movements in Germany as long as the ECB stabilises the average. Or put differently, small countries will always have to do the adjustment themselves, given that they are basically price takers. Symmetric movements in Germany require price adjustments in large countries such as Italy and Spain.
- 2 **Cost reductions do not necessarily translate into price reductions.** Product market regulation, lack of competition and other factors contribute to downward price rigidity. In fact, it may be no accident that the most deregulated economy, Ireland, actually saw costs and prices fall simultaneously. It should also be noted that Ireland has had the strongest turnaround in its trade balance, suggesting that price adjustment is important.
- 3 **Rigidities that prevent prices from falling should be addressed.** This will have a double benefit. First, it will help monetary policy to be much more effective in rebalancing the euro area. Moreover, changes in product and consumer prices will be conducive to the adjustment in trade patterns. In fact, structural reforms are key to help facilitate the reallocation of labour to the tradable sector and to reduce prices<sup>3</sup>. This option is currently being pursued but with limited success. Significantly more research is needed to understand which structural reforms will be most effective in fostering the adjustment, improving exports and increasing employment.
- 4 **Cuts in wages (or major increases in labour productivity due to training or other factors) have been insufficient in a number of countries.** Ultimately, wage cuts will lead to export-oriented firms requiring a large labour input to expand or locate to the country. Only then will unemployment decrease. While wage adjustments are visible in some countries, the absence of adjustment in Italy is particularly worrying. Also the forecast higher than average inflation rates in Italy need to be addressed.
- 5 **If downward price rigidities remain insurmountable, monetary policy that will stabilise the average inflation rate at two percent will imply no price adjustment in the euro area.** The result will be very long and sustained periods of unemployment and weak growth. This will increase the political pressure to either change the average inflation rate or to achieve price adjustment by leaving the euro area. Both options entail significant costs to different parts of the euro area and will likely shape the debate in the months and years to come.
- 6 **Arithmetic cannot be defeated.** Significantly lower inflation rates in southern Europe will automatically lead to higher inflation rates in Germany. Monetary policy will ensure a symmetric adjustment process and one should refrain from using other instruments to reduce the effectiveness of this mechanism. It is refreshing to see that some people at the Bundesbank<sup>4</sup>, as well as German finance minister Wolfgang Schäuble, understand this basic symmetry. After all, arithmetic is absolute, and both sides need to move.

3. Ruscher and Wolff (2009) analyse this internal adjustment.

4. See for example Ulbrich (2012).

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*'Cost reductions do not necessarily translate into price reductions. Product market regulation, lack of competition and other factors contribute to downward price rigidity. It may be no accident that the most deregulated economy, Ireland, saw costs and prices fall simultaneously.'*

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