

ISSUE 2014/10  
SEPTEMBER 2014

# SO FAR APART AND YET SO CLOSE: SHOULD THE ECB CARE ABOUT INFLATION DIFFERENTIALS?

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## EXECUTIVE SUMMARY

Inflation rates can differ across regions of monetary unions. We show that in the euro area, the US, Canada, Japan and Australia, inflation rates have been substantially different in different regions. For example, the price level in San Diego increased by 9.1 percent between 1998-2013 relative to the average while in Atlanta it decreased by 6.1 percent. In the euro area between 1998 and 2011, the German price level fell by 5.5 percent relative

## INTRODUCTION

Regional inflation differences are a common phenomenon in larger currency areas. Sometimes, these inflation differentials are persistent. The mandate of central banks, however, refers to the area-wide inflation rate, which is simply the weighted average of the regional inflation rates. The euro area is also structured that way: the Governing Council of the European Central Bank (ECB) has clarified that it aims to maintain inflation



unions. However, in Japan and Australia the regional differences are much smaller. In Japan the difference between the districts with the high-

average is 4 percentage points while it is 4.6 percentage points in Australia when looking at state capitals. In Canada the difference in inflation between the ten main provinces amounts to 13.7 percentage points, while in the US there is a differential of 15.3 percentage points for the 26 key metropolitan areas.

While in Canada and Japan these differences look rather persistent, it is the opposite for the US. Most US metropolitan areas alternate between higher and lower inflation than the national average. In Australia some state capitals have a persistent positive or negative inflation differential relative to the national average; others like Perth or Brisbane, however, switch between periods of positive and negative inflation differentials. Darwin, for instance, had the highest negative inflation differential between 1998 and 2005, but this was later compensated for by higher inflation, and in the full period of 1998-2014 the cumulative difference relative to the national average was almost zero. In the euro area, by contrast, most inflation differentials had a rather persistent nature between 1998 and 2013, with the notable exception of Ireland. The cumulated difference between the country with the highest rate (Greece) and the lowest rate (Germany) was a staggering 23 percentage points in CPI developments in 2011 compared to the base year of 1998.

#### THE CONSEQUENCES AND IMPLICATIONS OF INFLATION DIFFERENTIALS

When prices and wages increase faster than productivity in a region of a monetary union, significant imbalances can emerge because of deteriorated competitiveness. The higher inflation rate drives divergence further, by making borrowing cheaper in real terms and thereby fuelling credit inflows and sustaining further demand that again contributes to inflation. As a result, inflation divergences can become quite persistent until creditors start doubting the solvency of their debtors<sup>4</sup>. Without a stand-alone exchange rate and monetary policy, the correction of such imbalances is painful and difficult. Financial constraints can drive up nominal interest rates in the region compared to the area-wide average, increasing the real interest rate and pushing the region into a

cyclical downturn. The weak supply of tradable goods and net exports further reduces growth and increases unemployment. The cyclical downturn and high unemployment in turn rebalances the earlier inflationary divergence.

Regaining the lost competitiveness through price and wage disinflation is a slow process. If wage developments have gone unchecked for too long and the loss of competitiveness is significant, the tradable goods sector might have lost substantial market share and the industrial sector is accordingly weak. It might be difficult to regain strength in this sector in particular if certain skills are lost. Moreover, wages typically do not fall in nominal terms because of heavy resistance from workers. As a result, the adjustment speed is limited.

More worrying than inflation differentials, however, is the much more significant increase in unemployment in those euro-area countries that had higher inflation prior to the crisis (Figure 3 on the next page). In the main US metropolitan areas, unemployment developments were less diverse, less related to pre-crisis inflation and less persistent, while in Canada differences were even lower than in the US<sup>5</sup>. This suggests that persistent inflation rate differentials are a particularly big problem in Europe's monetary union. Other adjustment mechanisms such as labour mobility or financial and fiscal risk sharing, are less developed in the euro area than in the US or Canada, which makes the inflation differentials more problematic for the euro area (van Beers *et al*, 2014; Sapir and Wolff, 2013).

This situation raises significant questions for the European Central Bank and in particular for the conduct of monetary policy and macroprudential policies.

#### Monetary policy

An important question for the ECB is how to decide on and implement monetary policy when there are inflation differentials. In principle, monetary policymakers in a currency area (even when there are different regional inflation rates) should base their decisions on the average inflation rate and average economic developments. In changing a single interest rate, ie only one policy instrument, they

4. Darvas and Merler (2013) argue that regional differences and macroeconomic imbalances can hamper the proper transmission of ECB monetary policy.

5. Figure 3 shows that the greatest increase in US regional unemployment rate was about 5 percentage points, much below the greatest value for the euro area, which was 20 percentage points for Greece. Therefore US developments were less diverse. The coefficient of determination (R<sup>2</sup>), which measures the goodness of fit of the regression line, was 0.63 for the euro area and 0.25 for the United States, underlining that the relationship was much weaker in the US than in the euro area. Since the peak in unemployment was in 2010 for the US, in panel B of Figure 2 we show the increase in unemployment from 2008-10. If we extend the sample period for the US up to 2013, the R<sup>2</sup> falls to 0.05, suggesting practically no relationship and lower persistence than in the euro area.







inflation rate<sup>8</sup>

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