



Higher German inflation: Mission impossible?

October 29, 2014

Author

Stefan Schneider
+49 69 910-31790
stefan-b.schneider@db.com

Editor

Bernhard Gräf

Deutsche Bank AG
Deutsche Bank Research
Frankfurt am Main
Germany
E-mail: marketing.dbr@db.com
Fax: +49 69 910-31877

www.dbresearch.com

DB Research Management
Ralf Hoffmann

In the current context of massive under-utilisation of productive capacity in the euro area aggregate price stability is at risk. Beyond the one-offs affecting food or energy, growth in consumer prices is only “one shock away” from turning into negative territory. The ECB is right to fight this scenario with its unconventional measures.

Normally, this would add substantially to inflation risks in countries at full employment such as Germany. However, in the absence of any reaction of wages and prices even the least likely apologists of higher inflation, German central bankers, have signalled to the industrial partners that they would not mind higher wages in Germany (although the actual statements were more nuanced than the public echo).

Why are German wages/inflation not responding? Much of the answer lies in cultural factors and personal traits which manifest themselves in a high aversion to inflation. This in turn has led to Germany’s unique economic fundamentals and institutions. At the core it seems that Germans and German society can handle distribution conflicts involving time inconsistency problems better, on average, than many other nations.

Basically all factors influencing inflation attitudes as identified in cross-country studies are supportive for high inflation aversion in Germany. In two key areas of the economy determining its inflation propensity – private credit demand and the relationship between unemployment and inflation – we find quantitative evidence of rather limited inflation-accelerating properties.

The German peculiarities are a mixed blessing for the ECB. On the one hand, it makes inter-EMU rebalancing more arduous for the periphery and the reinvigoration of the credit multiplier more complicated for the ECB. On the other, it gives the ECB more time to run its supportive policy without creating new imbalances in the largest EMU economy.

In the long run, the arguments about what are the proper tasks and limits of fiscal and monetary policy, challenged several times in Germany’s highest court, show that there are still differences between Germans’ and other Europeans’ view of the world. Even more worrisome, the impact of demographic ageing in combination with strong preference for (low-risk) interest-bearing assets will probably make them even more inflation-averse, while high unemployment rates, soaring government debt and the need for deleveraging in the private sector might have the opposite effect in many other European countries. As a result, reaching a consensus on economic policy within EMU is going to remain very challenging.

Although we still think that the inflation cycle in the Monetary Union is about to turn, ongoing weakness and geo-political uncertainty do not hint towards strong cyclical forces driving inflation – probably not for years. Therefore the ECB has scope to extend its balance sheet via private and most likely public QE.

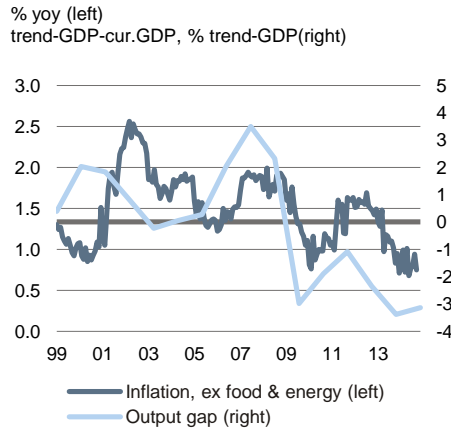


Higher German inflation: Mission impossible?

ECB policy and EMU inflation surprises

EMU: Output gap & core inflation

1



Sources: Eurostat, OECD

Right from the start of the European government bond crisis it was clear that its cyclical impact in addition to supply side reforms triggered by it would induce strong downward pressure on Eurozone inflation, notwithstanding doomsayers' predictions that the unprecedented easing of monetary policy in all major economies would result in surging inflation¹. In 2011 and 2012, however, inflation turned out much higher than previously expected by the ECB or the European Commission. In 2013 it matched the forecasts produced end-2011 and end-2012, but initial GDP forecasts (Dec-2011 1.3%) turned out way too optimistic (actual -0.4%). Starting in 2014 the ECB has been facing the opposite problem. It has been repeatedly forced to lower its HCPI predictions for 2014 and 2015. Of course, this might not only be the result of the GDP/inflation trade-off in the EMU economy as factors such as energy prices and the exchange rate matter too. Still, the fact that the ECB now expects inflation at only 1.5% in Q4 2016 suggests that there is more to it than only cyclical or temporary factors. The ECB's explanation for its recent decisions, citing the risk of a too prolonged period of low inflation and Mr. Draghi's explicit reference to the 5y/5y-swap in his Jackson Hole speech, can certainly be interpreted as pointing into this direction.

Moreover, comments by central bankers such as the ECB's chief economist Peter Praet or Bundesbank president Jens Weidmann, who made the highly unusual move of endorsing higher German wages, suggest that even the central banks are getting somewhat impatient in light of Germany's inflation resilience, although the actual statements were far less "heretic" than their public perception. Mr. Praet said that in countries where labour market developments are positive, such as Germany, higher pay increases (compared with those in the EU crisis countries) would be appropriate. The Bundesbank was more concrete, calculating a "higher pay increase" of around 3%, as this exploits the medium-term distribution-neutral scope provided by productivity and the inflation trend, which is allegedly adequate in view of the labour market situation.

ECB : Macroeconomic projections for the euro area

2

| | 2010 | | 2011 | | 2012 | | 2013 | | 2014 | | 2015 | | 2016 | |
|--------|------|-----|------|-----|------|------|------|------|------|-----|------|-----|------|-----|
| | HCPI | GDP | HCPI | GDP | HCPI | GDP | HCPI | GDP | HCPI | GDP | HCPI | GDP | HCPI | GDP |
| Dec 10 | 1.6 | 1.7 | 1.8 | 1.4 | 1.5 | 1.7 | | | | | | | | |
| Dec 11 | 1.6 | 1.8 | 2.7 | 1.6 | 2 | 0.3 | 1.5 | 1.3 | | | | | | |
| Dec 12 | | | 2.7 | 1.5 | 2.5 | -0.5 | 1.6 | -0.3 | 1.4 | 1.2 | | | | |
| Dec 13 | | | | | 2.5 | -0.6 | 1.4 | -0.4 | 1.1 | 1.1 | 1.3 | 1.5 | | |
| Mar 14 | | | | | | | 1.4 | -0.4 | 1.0 | 1.2 | 1.3 | 1.5 | 1.5 | 1.8 |
| Jun 14 | | | | | | | | | 0.7 | 1.0 | 1.1 | 1.7 | 1.4 | 1.8 |
| Sep 14 | | | | | | | | | 0.6 | 0.9 | 1.1 | 1.6 | 1.4 | 1.9 |

Blue cells contain the actual outcome
Source: ECB

The analysis of individual country forecasts provided by the European Commission shows that actual inflation has recently been overestimated in those countries where large and uncertain output gaps and supply side reforms have certainly increased the potential for forecasting errors. But inflation for Germany has been overestimated too. This cannot be attributed to the same kind of uncertainties as the German economy is in a more favourable and very stable cyclical position, while the inflation-dampening effect of supply side reforms implemented a decade ago should by now have run their course.

¹ Gräf, Bernhard and Stefan Schneider (2009). Medium term inflation risks – how much of a threat are they? Deutsche Bank Research.

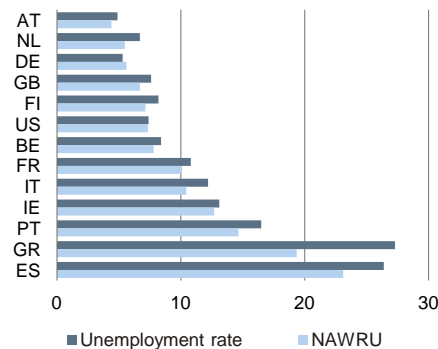


Higher German inflation: Mission impossible?

Unemployment rate & NAWRU

3

2013, %



Source: European Commission

Does the German inflation trend contradict the economic textbooks?

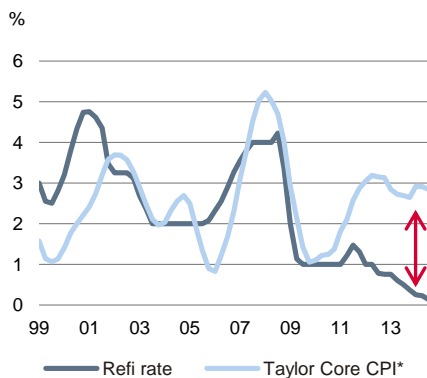
From an Anglo-American point of view it has been taken for granted since 2010 at the latest that the inflation rate in Germany would rise significantly. Since Germany was one of the few advanced economies in which the current unemployment rate in 2010 fell below the non-accelerating wage rate of unemployment (NAWRU), the threshold below which a further decline in the unemployment rate leads to an increase in the inflation rate, wage pressure had to rise. This argument was all the more persuasive as the ECB's monetary policy was on course for an interest rate level that was geared towards the euro area as a whole, but was much too loose for Germany. Since 2010 the current interest rate in Germany has been around 2 percentage points below the equilibrium rate derived using a Taylor rule.

Inflation has indeed failed to accelerate in Germany over the last four years. Even in 2010 and 2011, when the energy components registered year-on-year increases of 10% and 6% respectively, consumer prices (as defined nationally) barely breached the 2% mark. In 2013 – with energy prices nearly stable – the inflation rate softened to 1.5%. For the current year we expect a rate of just 0.8%. The restrained price climate is also reflected in the core inflation rate (that excludes energy and food), which has remained at roughly 1 ¼% for more than three years.

Of course such a low inflation rate is not a problem per se, unless it is considerably lower than expected by economic agents – especially borrowers. On the contrary, it has enhanced consumers' real purchasing power. For the eurozone's peripheral countries, however, low German inflation rates are a major problem, since the loss in bilateral price competitiveness caused by higher inflation (which has peaked at above 20% in the four programme countries since 1999) thus has to be corrected in the countries themselves via a stronger and/or longer disinflationary process.

Germany: Key rate & Taylor rule CPI

4



*) Q4 averages

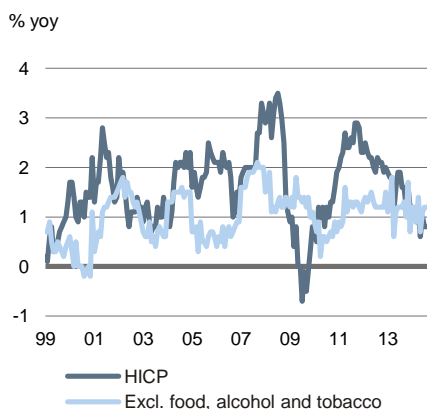
Sources: Federal Statistical Office, Global Insight, Deutsche Bank Research

Is Germany different?

The theoretical considerations (Phillips curve and Taylor rule) based on the above-mentioned expectations of rising inflation rates suggest that the way the labour market functions and the drivers of credit growth are probably the key determinants of an economy's inflation propensity. In the literature, however, the discussion extends to a plethora of factors from the institutional, political, and cultural fields as well as individual features². All the same, the findings concerning the relevance of individual factors are not always clear cut in the studies that compare different countries. This may be due to the methodology and time period, but it is probably mainly to do with the complex interdependencies between the factors. Individual preferences are heavily influenced by the cultural environment, and these in turn both influence which institutions emerge in a society. This is impressively illustrated by the example of central bank independence. Studies show a close relationship between the degree of independence and the averting of inflation. Theoretically this relationship derives from the time inconsistency problems inherent in monetary policy for a political agent who would like to get re-elected. If the analysis is expanded to include other political aspects where time inconsistencies are also a factor, such as economic openness, political stability and efficiency of taxation, the influence of central bank independence is rendered far less significant, and it becomes clear

Germany: HICP & core inflation

5

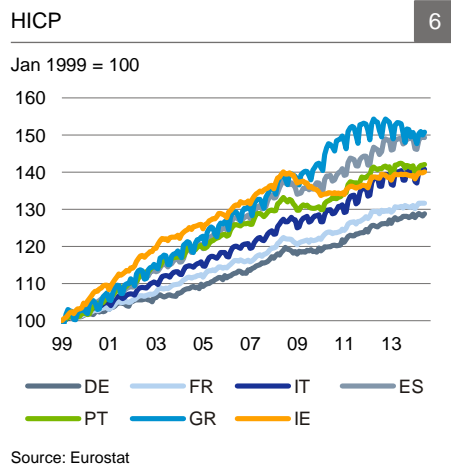


Source: Eurostat

² Schmidt, Paul-Günther. Institutionelle Strukturen und makroökonomische Stabilität.



Higher German inflation: Mission impossible?



that the inflationary tendencies of a society ultimately depend on the efficiency of the mechanisms for solving societal conflicts over distribution, which in turn depend on the trust (interpersonal and in institutions) that exists in society, risk aversion and time preferences.

Below, we start by presenting the most important economic/institutional individual factors to be found in the literature, such as inflation experience, exchange rate regime, openness etc., that influence a country's susceptibility to inflation and discuss their specific expressions in Germany. Then we shall focus on the labour market and the credit process – both factors are in our opinion of pivotal importance for inflation and probably also the most important reasons for the pick-up in inflation originally expected by many observers. In the third section we then address the questions of whether Germans are different. We find that Germans are more inflation-averse than other nationalities not only in light of their historical experiences, but also due to cultural differences. Germany's institutions have of course taken shape on the basis on these attributes and Germany's "stability culture" has developed accordingly. The study's conclusion comprises the resulting implications for Europe and the ECB.

Prices of bread and butter 7

| Month | Year | Price of a pound of bread (Reichsmark) | Price of a pound of butter (Reichsmark) |
|-------|------|---|--|
| Jun | 1914 | 0.13 | 1.20 |
| Jun | 1916 | 0.19 | 2.00 |
| Jun | 1918 | 0.22 | 2.40 |
| Jun | 1919 | 0.26 | 4.00 |
| Jun | 1920 | 1.20 | 15.00 |
| Jun | 1921 | 1.35 | 18.00 |
| Jun | 1922 | 3.50 | 70.00 |
| Jan | 1923 | 700.00 | 5,400.00 |
| May | 1923 | 1,200.00 | 10,000.00 |
| Aug | 1923 | 100,000.00 | 1,400,000.00 |
| Sep | 1923 | 2,000,000.00 | 50,000,000.00 |
| Oct | 1923 | 670,000,000.00 | 5,800,000,000.00 |
| Nov | 1923 | 0.50 | 3.00 |
| Dec | 1923 | 0.35 | 2.30 |

Source: Statistical Yearbook of the German Reich

Experience of inflation: Hyperinflation and currency reform

Germany's dramatic experience of hyperinflation in the 1920s and the currency reform following World War II are often cited as the reasons for Germans' aversion to inflation. Later on we shall take a closer look at how such collective experiences can influence individual preferences. However, analyses based on a larger number of countries do not show that past high inflation rates – which however did not constitute hyperinflation – lead to lessons being learned so that high inflation is averted in future. On the contrary, according to estimates a 1 percentage point higher inflation rate in the past boosts the current inflation rate by about 0.6 of a percentage point³. The reason cited for this is that especially in highly developed countries instruments are found to protect against inflation, for example financial products (index-linked) or an indexation of, for example, rents or even pay. Before the start of EMU such index clauses were banned conditionally in Germany (Section 3 (2) of the Currency Act, with the

³ Camillo, Marta and Jeffrey A. Miron. Why does inflation differ across countries?



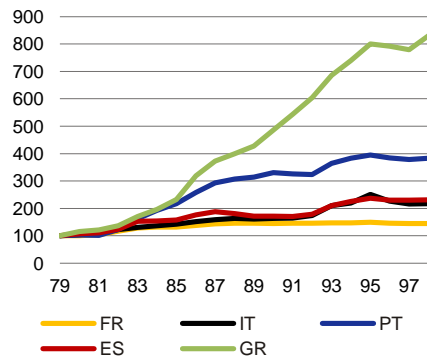
Higher German inflation: Mission impossible?

Bundesbank having an approval veto. A highly persistent inflation rate could, however, also be due to other factors that were only insufficiently recorded in the studies.

Exchange rates vs. DEM 1979-1998

8

1979 = 100



Sources: Global Insight, Deutsche Bank Research

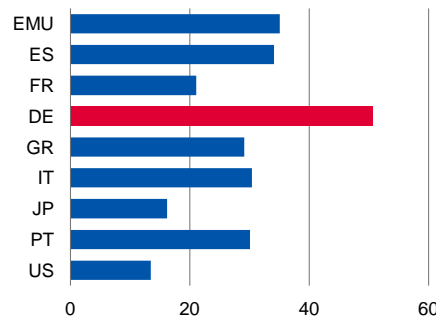
Exchange rate regime: Fixed exchange rates = price stability?

With a stable anchor currency, membership in a system of fixed exchange rates should reduce an economy's susceptibility to inflation, since a high inflation rate gives rise to additional political costs. This type of self-imposed restriction undoubtedly played a significant role in the EMS. Nevertheless the frequent devaluations showed that their political costs were not prohibitive after all. Moreover, the causality can also operate in the other direction: a country such as Austria for example, was able to pursue a fixed exchange rate to the D-Mark without having too much worries, since it was sure it had attained the necessary level of price stability. In Germany the decision to abandon the peg to the USD in May 1971, by contrast, was a clear expression of the preference for low inflation. The introduction of the EUR can also be understood as a system of fixed exchange rates with a total renunciation of nominal external adjustment flexibility inside the monetary union. However, this restriction was not heeded by actors especially in the peripheral countries (or by investors) and thereby helped to bring about the European sovereign debt crisis. The functioning of the system would have required structural reforms in the peripheral countries to reverse the appreciation of their real exchange rates in order to recalibrate.

Export shares in 2013

9

% of GDP



Sources: WEFA, Deutsche Bank Research

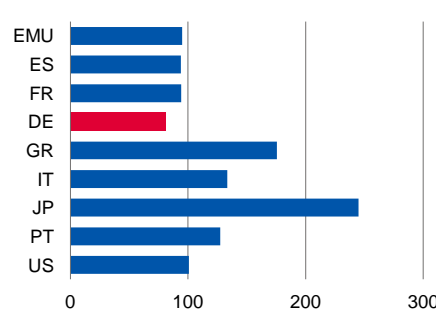
Openness tends to dampen inflation

The more open an economy, the less pronounced the anyhow only short-lived benefit of surprise inflation, as it results in a devaluation of the currency and a corresponding loss of purchasing power. This correlation is, however, less pronounced in the most developed economies. This could be because these economies have found better solutions to the time inconsistency problems inherent in distribution conflicts and thus the "escape valve" of devaluation is no longer required. With an export share of 50% of GDP and an import share of some 45% this correlation is probably of major importance in Germany – although it is a highly developed country. This is due in no small measure to globalised value chains, which mean that pay and pricing developments in many sectors have a direct impact on employment (more about this below).

Sovereign debt ratios

10

% of GDP



Sources: WEFA, Deutsche Bank Research

High levels of public spending and debt stoke inflation

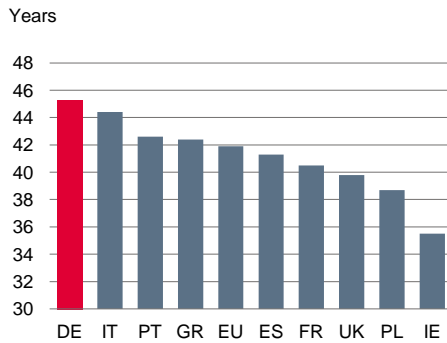
High levels of public debt are certainly the product of the failure to get to grips with distribution conflicts by shifting burdens to third parties in the future. Countries with chronically empty coffers and inefficient tax systems have an incentive to boost their tax revenues via higher inflation. Studies reveal a negative correlation between the size of public expenditure/debt and the public's aversion to inflation, i.e. the larger the public debt, the greater will be the preference for higher inflation.



Higher German inflation: Mission impossible?

Median age (2013)

11



Source: Eurostat

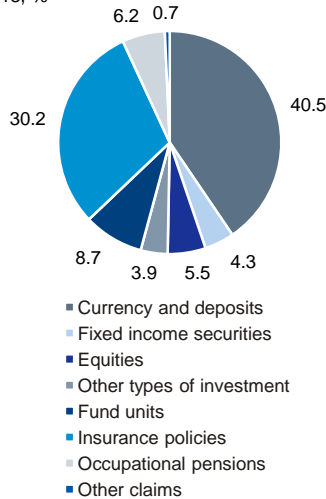
Ageing generates inflation aversion

From the life cycle hypothesis it can be deduced that – all things being equal – older people are more inflation-averse than younger people. Younger households have larger debts (home, car etc.) than older ones and are therefore – especially when the nominal interest rate is fixed for a long period – the potential winners if there is a surprise surge in inflation. They can, on account of their still long employment phase, react better to changes in relative prices and the price level than the elderly, who are less flexible in the labour market or are even already retired. Older households, by contrast, have largely completed their asset accumulation. In Germany this occurs to a far greater degree than in other countries due to savings schemes, bonds and life insurance policies whose real value is reduced by inflation.

Households: Financial assets

12

Q3 2013, %



Source: Bundesbank

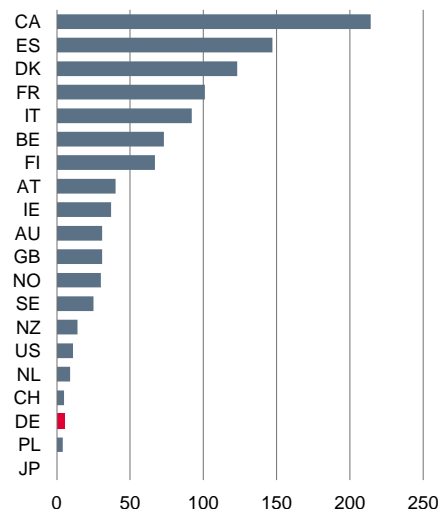
Financial sector: Little appetite for inflation

The income from maturity transformation is a major source of revenue for savings banks and credit cooperatives that command a 55% share of the market in Germany (in terms of claims on non-banks): Given their close ties with local and regional politicians savings banks in particular wield considerable social and political influence. This business model is very vulnerable to unexpected surges in inflation. This sector is therefore likely to have a strong interest in stable prices.

Strikes and lockouts: Working days lost

13

Average per 1,000 employees (2001-2010)



Sources: ILO, IW Köln

Labour market – wage restraint is institutionally driven

Pay and social security contributions in Germany – as in other industrialised countries – make up about half of GDP. Pay developments are thus the key determinant of the inflation trend in the economy as a whole. On account of the at least short-term trade-off between unemployment and inflation, the preference for stable prices declines as unemployment rises and the more personally affected one becomes. However, the level of NAWRU itself, i.e. the unemployment rate threshold below which inflation rises, influences inflation preferences. A high NAWRU, on account of a too heavily regulated and inefficient labour market, leads to a larger number of people being directly affected by the costs of unemployment and concerns about inflation take a back seat.

The German free collective bargaining model – together with an economy where SMEs are prominent – has traditionally helped to foster a comparatively cooperative relationship between unions and employers. The informal leading roles in collective bargaining performed by the metal and chemicals unions – IG-Metall and IG-Chemie – which both represent traditional exporting sectors, mean that considerations relating to international competitiveness have always played a big part in setting pay levels. In this respect the response of union representatives to recent suggestions of higher wage increases in Germany was particularly telling. They basically rejected such encouragements by pointing out that they had fully exploited the distribution-neutral leeway for wage increases (provided by productivity gains and inflation) in recent years. This focus on international competitiveness was further intensified by the fall of the Iron Curtain and the resulting access to well-trained, inexpensive labour, especially as companies were thereby enabled to issue the credible threat of relocating



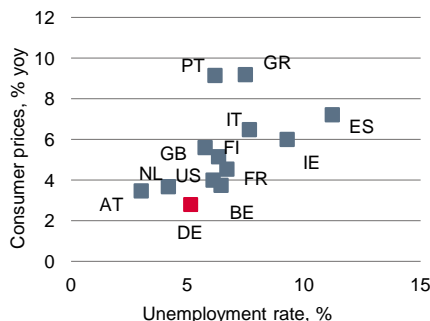
Higher German inflation: Mission impossible?

| Union members as % of employees | 14 |
|---------------------------------|-------|
| | 2013* |
| AU | 17 |
| AT | 27.4 |
| BE | 55 |
| CA | 27.2 |
| DK | 66.8 |
| EE | 6.4 |
| FI | 68.6 |
| FR | 7.7 |
| DE | 17.7 |
| GR | 21.3 |
| IT | 36.9 |
| JP | 17.8 |
| KR | 9.9 |
| NL | 17.6 |
| PT | 20.5 |
| ES | 17.5 |
| SE | 67.7 |
| CH | 16.2 |
| GB | 25.4 |
| US | 10.8 |

*Or last available year
Source: OECD

Phillips curve 15

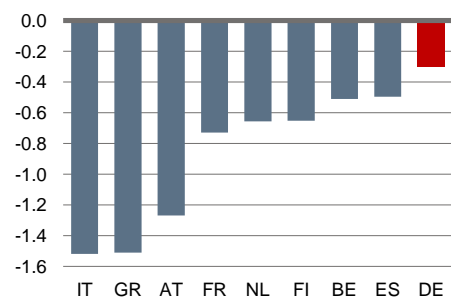
Averages for 1961-2013



Source: European Commission

Coefficient Phillips curve estimate 16

Inflation = f (unemployment),
for countries with mit $R^2 > 0,30^*$



*) Estimates with optimal lags based on yearly figures from 1961-2013

Sources: EU Commission, Deutsche Bank Research

their operations⁴. This has been one of the reasons why the last 25 years have seen collectively bargained opening clauses lead to decentralisation of the pay-setting process and a decline in the coverage of collective agreements. In 2012, 66% of west German and 79% of east German firms were not tied to a collective agreement, although some 40% of them aligned their remuneration towards the collective agreement for their industry. In 2011, 25% of manufacturing firms had the possibility to make use of opening clauses. 64% of them used them with regard to remuneration and 74% of them with regard to working time.⁵

It cannot currently be estimated to what degree this development will be reversed by the introduction of a minimum wage, the restriction of temporary work and the possibility to declare collective agreements as generally binding. The effects, however are ultimately likely to be limited on account of the scope for relocation that will still be available to many companies (including SMEs).

Labour market and credit process: Decisive for inflationary trend

In this section we shall examine to what degree the above-mentioned German peculiarities can also be documented quantitatively. Because of their pivotal importance we shall focus on price formation in the labour market and the credit process. We are well aware that such empirical analyses presuppose a certain degree of stability of the structures in the countries surveyed. This assumption applies only to a limited degree to the countries on Europe's periphery on account of the euro-driven structural break. That is why the findings presented here are at best indications that can support qualitative considerations.

Labour market – flat Phillips curve in Germany

The inverse correlation – at least in the short and medium term – between unemployment and inflation (Phillips curve) is a core equation in macro-economic models. If we look at the chart, the distance between each point and the x-axis provides an indication of the overall efficiency of the respective economy, while the slope depicts the correlation between the unemployment rate and inflation. In this simple formulation a robust explanatory value cannot be found for all countries (R^2 significantly > 20%). For the peripheral countries there is also a structural break in the decade from 1997 to 2007 when, despite the unemployment rate declining heavily, inflation remained very moderate – at least on a historical comparison. Nevertheless, both the chart and the coefficients for our Phillips curve estimates show that in Germany the correlation between unemployment and inflation is comparatively weak. For instance, a 1 pp decline in the unemployment rate in Germany is followed by a 0.3 pp rise in the inflation rate. The corresponding rise in the inflation rate is ½ pp in Spain, ¼ pp in France and Italy and 1 ½ pp in Greece. Given the structural changes in peripheral Europe over the last fifty years, a shorter time horizon would probably show smaller gaps vis-à-vis Germany, but curtailing the observation period results in a massive loss of statistical significance.

On account of the rather indirect correlation between unemployment rate and inflation, which moreover is influenced by other factors, such as import prices or administered prices, we have also investigated the correlation between unemployment and wages. Here, too, we see that the coefficient in Germany is somewhat low. Furthermore, we estimate that the recent surge in immigration –

⁴ Dustmann, Christian, Bernd Fitzemberger, Uta Schönberg, Alexandra Spitz-Oener (2014). From the sick man of Europe to the Economic Superstar: Germany's resurgent economy.

⁵ IAB Betriebspanel, quoted from Peter Ellguth. Entwicklung der Tarifbindung.



Higher German inflation: Mission impossible?

adding about 300,000 persons p.a. to German labour supply will temporarily ease wage pressure by shaving off at least 0.2 pp of wage growth.⁶

Credit development – little dynamism in Germany

According to Milton Friedman, inflation has been and always will be a monetary problem. It should thus be clear that the credit mechanism exerts a key influence on an economy's susceptibility to inflation. The role of the central banks is definitely controversial as – at least in the short and medium term – the credit volume is partially determined endogenously as a function of cyclical developments and thus the behaviour of commercial banks and borrowers is of key importance.

Cointegrating equation

17

| | Germany | | France | | Italy | | Spain | | United Kingdom | |
|---|-------------|-----|-------------|-----|-------------|-----|-------------|-----|----------------|-----|
| log(real total credit) | | | | | | | | | | |
| log(real GDP) | 1.13 | *** | 1.10 | *** | 2.31 | *** | 5.85 | *** | 4.09 | *** |
| 10Y govt bond yield | -0.07 | *** | -0.05 | *** | -0.17 | *** | 0.12 | *** | 0.33 | *** |
| Error correction term (-1) in short-term equation | -0.03 | ** | -0.03 | ** | -0.11 | *** | -0.02 | *** | 0.00 | |
| Observation period | 70Q1 - 07Q3 | | 70Q1 - 07Q3 | | 98Q1 - 07Q3 | | 85Q1 - 07Q3 | | 70Q1 - 07Q3 | |

*** 1%, ** 5% and * 10% significance level
Source: Deutsche Bank Research

Using a simple error correction model we have estimated the real credit volume as a function of real GDP and the 10-year government bond yields of selected countries. We have chosen the longest possible periods (since the early 1970s), which we had to partly shorten, however, due to data availability issues or the lack of stability of the parameters. The results should thus be viewed with caution. Moreover, the positive signs for bond yields in the UK and Spain are puzzling at first glance, but are probably the result of the protracted housing bubbles in these countries. Nevertheless, it is striking that in Germany both the influence of GDP and interest rates is lower than in Italy and much weaker than in Spain or the UK. (It is also noteworthy that the coefficient of the equations for Germany and France are almost identical!). Overall, the estimates support the assumption that the credit volume in Germany responds comparatively weakly to the economy and interest rates and thus the risk of credit-driven overheating of the economy or asset markets is rather limited.

Are the Germans different?

In the previous section economic, political and institutional factors and their implications for the inflation aversion of a society have been analysed. However, these factors are almost exclusively the result of the historical and cultural development of a society. This is impressively reflected in the analyses of Scheve⁷: his country comparison showed that even taking into account the economic and institutional context, there were still considerable national differences, with the Germans showing the highest inflation aversion of all 20 countries analysed, with in part substantial differentials to the other eurozone countries.

⁶ Bräuninger, Dieter and Heiko Peters (2014). Temporary immigration boom: A wake-up call for politicians? Standpunkt Deutschland. Deutsche Bank Research. July 28, 2014.

⁷ Kenneth Scheve (2002). Public demand for low inflation.



Higher German inflation: Mission impossible?

Determination index for inflation aversion

18

| Regressor | | Regressor | |
|-------------------------------|--------|-------------|--------|
| Inflation | 0.065 | Spain | -0.109 |
| Unemployment gap ¹ | -0.056 | France | -0.429 |
| NAIRU | -0.065 | Ireland | -0.110 |
| Income quartile ² | 0.079 | Netherlands | -0.457 |
| Number of unemployed | -0.251 | Portugal | -0.798 |
| Age | 0.004 | Norway | -0.113 |
| Gender ³ | -0.237 | Finland | -0.539 |
| Education | -0.001 | Sweden | -0.816 |
| 1980s* | 0.208 | Austria | -0.354 |
| 1990s* | 0.426 | Australia | 0.316 |
| Belgium | -0.292 | US | 0.153 |
| Denmark | -0.150 | Canada | 0.080 |
| Germany | 0.276 | Japan | 0.221 |
| Greece | -0.283 | New Zealand | 0.255 |
| Italy | -0.510 | Constant | -0.706 |
| Number of observations | 55,194 | | |

¹ GAP between actual unemployment rate and NAWRU

² 1 to 4, for lowest to highest quartile

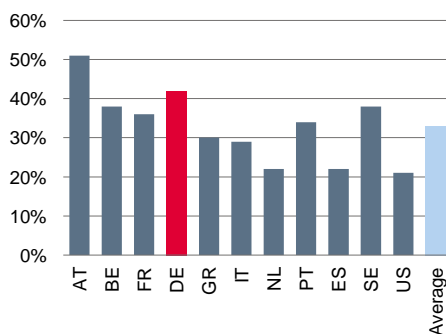
³ females = 1, males = 0

* Survey date

Source: Bank of England (Kenneth Scheve "Public demand for low inflation")

Thrifty as a value in a child's upbringing
(share of "Important" responses)

19



Source: World Value Survey

True, other industrial countries have also suffered from periods of extremely high inflation rates. The German hyperinflation of 1923 and the high inflation period ended by the currency reform of 1948 stand out, however. For instance, the price of bread rose from 3.50 Marks in 1922 to 700 Marks in January 1923 and to as much as 670 m (!) in October. The currency reform was called by historians "the largest expropriation for cash holders in German history" (cash, bank and savings deposits were converted in a ratio of 100:6.5). Given that hyperinflation was a result of WWI and the conflict about reparations which was one factor contributing to the political developments in Germany that led to WWII, might have contributed to hyperinflation becoming the mother and son of all evil in Germans' collective perception. Such caesuras are reflected in the collective memory and cultural heritage of a society. On the one hand, via socialisation as parents put emphasis on certain character traits for their children⁸. For example, German parents consider an upbringing in accordance with the principle of thrift to be particularly important. On the other hand, this also applies to institutional arrangements. In Germany, this certainly included the Bundesbank. In 1992, the then president of the European Commission made the remark that not all Germans believe in God but that all Germans believe in the Bundesbank. Several ministers of finance who picked a fight with the Bundesbank came to realise that public opinion in general supported the Bundesbank whenever exchange-rate adjustments or assaults on the gold reserves of the Bundesbank were the matter⁹. The historian Herfried Münkler regards the D-Mark and the German economic miracle as a founding myth of the young federal republic: "Everybody carried the currency as a material substrate of the founding myth with him and was able to check every day whether the promises given with it still applied."¹⁰ This is in keeping with surveys, in which price stability is seen – not only by the Germans – as a matter of national prestige.¹¹ As in the German media as well the topic of inflation

⁸ Farvaque, Etienne and Alexander Mihailov (2011). Intergenerational Transmission of Inflation Aversion: Theory and Evidence.

⁹ Die Welt. Notenbank zeigt Waigel die Zähne. May 30, 1997.

¹⁰ Münkler, Herfried (2011). Die Deutschen und ihre Mythen.

¹¹ Shiller, Robert J. (1996). Why people dislike inflation.

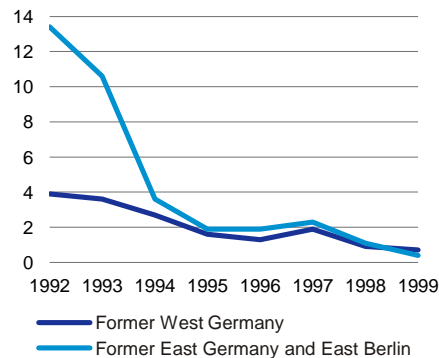


Higher German inflation: Mission impossible?

Price index for cost of living

20

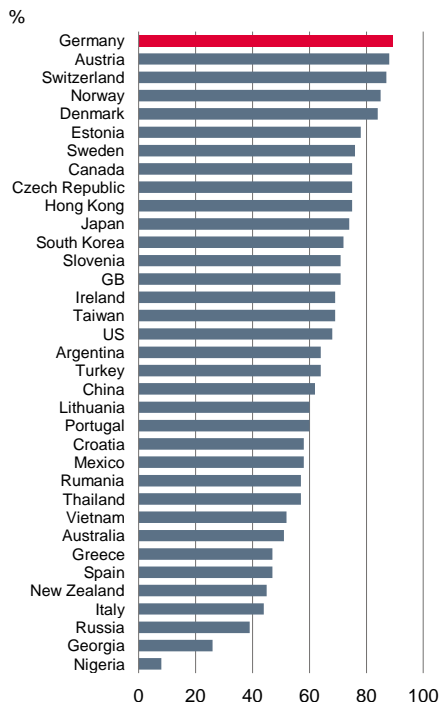
Change, % yoy



Source: Federal Statistical Office

Willingness to wait

21



Source: Norwegian School of Economics "How Time Preferences Differ: Evidence from 45 Countries"

remained an important issue for decades – not least during the heated discussions on the creation of a single European currency, German reunification and especially since the ECB has pursued an extremely loose monetary policy to fight the financial and economic crisis – it is fair to say that inflation concerns have become an element of German culture. In any event our point of reference is a common definition of culture, then individual thoughts and actions influence cultural norms and practices, and these cultural norms and practices influence the thoughts and actions of individuals.¹² Already in Goethe's *Faust*, the most powerful German poetry, the author warned 200 years ago and under the impression of the French assignat economy of the inflationary consequences of a money-based system. Such characteristics are enhanced by the attention and confirmation bias known from behavioural economics¹³, as well as the isolation effect, which lead to a distorted perception of price development. For instance, 58% of respondents in a survey stated that they had the feeling that prices in 2013 had risen more strongly than the 1.5% published by the Federal Statistical Office. A phenomenon which as "perceived inflation" has even found its way into the official statistics.

Even within Germany, different experiences have led to significantly different inflation preferences. A study by the ifo Institute comes to the conclusion that east Germans under otherwise equal conditions (rate of unemployment, occupation, political orientation etc.) are 25 percentage points more likely to mention inflation as a major problem.¹⁴ The authors attribute this to the specific experience of east Germans with almost stable prices for decades in the former GDR, the experience of the conversion of the East-Mark to the D-Mark in a ratio of 2:1 and the strong increase in consumer prices following unification given the reduction of state subsidies (rents, water, electricity).

Surveys on the basis of the five cultural dimensions developed by Hofstede¹⁵ also show strong differences especially with regard to the "Long-term orientation" dimension, which describes a (work) ethic where people are willing to make efforts which pay off only in the future. In an international comparison, 89% of the German students surveyed preferred a payment of USD 3,800 in one-month's time to a payment of USD 3,400 in the current month; similarly high values were shown in the answers of Austrian and Swiss students¹⁶. In Italy, Spain and Greece, the respective values were slightly below 50%. The authors even find a positive correlation between punctuality, working pace and the propensity to wait.

As culture, individual thinking and individual action influence one another, there is reason to presume that not only is Germany different but that the Germans are different as well. This is also reflected in international comparisons of the so-called BIG 5 character traits. Here, the German respondents show a relatively high "conscientiousness" but a low "openness to experience" and thus show that they prefer conventional behaviour and stability. This is shown by their conservative attitude towards credit and debt, the cooperative interaction between the social partners and ultimately by inflation aversion.

The studies we cite are relatively old. Furthermore, the individual factors raise questions regarding their endogeneity and multicollinearity. Nevertheless, the relevance of the variables discussed can in many cases be deduced from economic theory and is supported by experience. Cultural and individual

¹² Lehman, Chiu and Schaller (2002). *Psychology and Culture*. Quoted from Hogg, Michael A. and Graham M. Vaughan (2011). *Social Psychology*.

¹³ The attention bias describes the tendency of our perception to be influenced by recurring thought. The confirmation bias describes people's preference for information supporting their own hypothesis.

¹⁴ Berleemann, Michael and Sören Enkelmann. *Die German Angst...*

¹⁵ <http://geert-hofstede.com/dimensions.html>

¹⁶ Wang, Mei, Marc Oliver Rieger, Thorsten Hens (2011). *How time preferences differ: Evidence from 45 countries*.

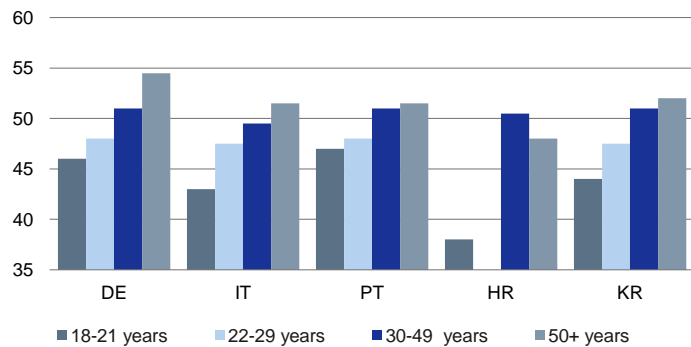


Higher German inflation: Mission impossible?

characteristics should be relatively stable also over longer periods. Thus there is much to suggest that there is a specifically German inflation aversion which is unlikely to change for some time to come and should characterise the actual inflation development in the next few years.

Conscientiousness

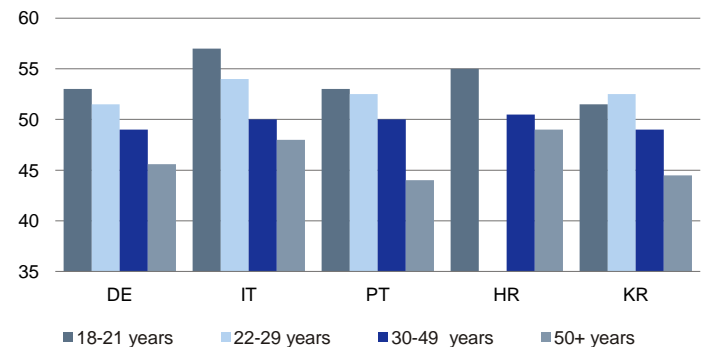
22



Source: "Age differences in personality across the adult Lifespan" R.R. McCrae et al.

Openness to new things

23

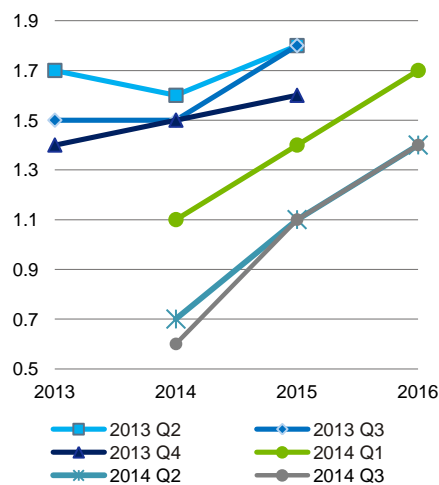


Source: "Age differences in personality across the adult Lifespan" R.R. McCrae et al.

ECB inflation forecasts

24

Change in HICP, % yoy



Source: ECB

Implications for Europe and the ECB

True, the still comparatively good economic situation combined with a too low interest environment should lead to an inflation rate above the EMU average but not necessarily to a marked acceleration in inflation; this is also reflected in the most recent inflation forecasts of the ECB experts, according to which inflation in the eurozone following 1.0% in the current year is expected to remain markedly below the 2% mark, i.e. 1.3% in 2015 and 1.5% in 2016. The Bundesbank expects inflation in Germany to come to 1.5% (excl. energy 1.9%) in 2015. In our view, this means that the adjustment burdens of the peripheral countries to restore their price competitiveness will lead to a stronger disinflationary process there.

The German peculiarities are a mixed blessing for the ECB. On the one hand, it makes intra-EMU rebalancing more arduous for the periphery and the reinvigoration of the credit multiplier more complicated for the ECB. On the other, it gives the ECB more time to run its supportive policy without creating new imbalances in the largest EMU economy.

Our analysis of the potential effects of the ECB-decisions taken on June 5 and September 4 suggests that they will be close to zero in the case of Germany¹⁷. This is in part explained by the relatively small reduction in banks' refinancing costs of around 75 bp compared to 125 bp in Spain or 195 bp in the case of Italy. In addition, a panel regression finds that the response of corporate loan growth to looser lending conditions (as reported in the bank lending survey) is negligible, which fits well to very low coefficients of our error correction model for German credit demand shown on page 8.

Still, the bigger picture presented by the above analysis of the factors behind the quite different inflation propensities among EMU countries hints, that they cannot be bridged easily by a common institutional framework, since the reasons for these differences run much deeper and their implications go much further.

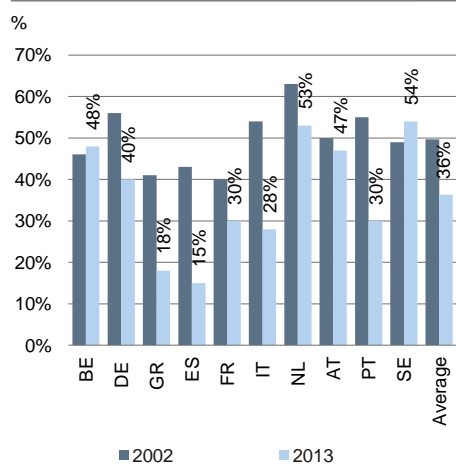
¹⁷ Deutsche Bank. Focus Europe, June 6, 2014. ECB: quantifying the package.



Higher German inflation: Mission impossible?

Trust in the ECB: Share of "Tend to trust" responses

25



Source: Eurobarometer

The quarrels about the ECB's monetary policy as well as the Stability and Growth Pact and national fiscal policy reveal that there is still no proper consensus on the tasks and limits of fiscal and monetary policies in Europe as yet. Since the financial and economic crisis, German concerns that the other countries are not quite as serious about (price) stability are likely to have increased. The demographic development and the Germans' preference for bonds and savings schemes for their private pensions should tend to strengthen the German inflation aversion. It remains to be seen whether the repercussions of the crisis and the experience with – likely temporary – disinflationary processes in the countries on the periphery of Europe will promote a convergence of cultural and individual inflation aversion. The high rates of unemployment and government debt levels as well as the need for private sector deleveraging as well seem to argue against it. But the fact of the matter is that the euro area needs some glue (political will) to hold it together. Reforms in the vulnerable countries could be a win-win strategy. Even if the Germans are unlikely to honour them with an expansionary fiscal policy (which again would run contrary to their cultural biases), it should at least generate some goodwill for more controversial monetary policies of the ECB. It would certainly be wise for the rest of Europe and the financial markets not to underestimate the German inflation aversion so deeply engrained in their culture and institutions.

Stefan Schneider (+49 69 910-31790, stefan-b.schneider@db.com)

© Copyright 2014. Deutsche Bank AG, Deutsche Bank Research, 60262 Frankfurt am Main, Germany. All rights reserved. When quoting please cite "Deutsche Bank Research".

The above information does not constitute the provision of investment, legal or tax advice. Any views expressed reflect the current views of the author, which do not necessarily correspond to the opinions of Deutsche Bank AG or its affiliates. Opinions expressed may change without notice. Opinions expressed may differ from views set out in other documents, including research, published by Deutsche Bank. The above information is provided for informational purposes only and without any obligation, whether contractual or otherwise. No warranty or representation is made as to the correctness, completeness and accuracy of the information given or the assessments made.

In Germany this information is approved and/or communicated by Deutsche Bank AG Frankfurt, authorised by Bundesanstalt für Finanzdienstleistungsaufsicht. In the United Kingdom this information is approved and/or communicated by Deutsche Bank AG London, a member of the London Stock Exchange regulated by the Financial Services Authority for the conduct of investment business in the UK. This information is distributed in Hong Kong by Deutsche Bank AG, Hong Kong Branch, in Korea by Deutsche Securities Korea Co. and in Singapore by Deutsche Bank AG, Singapore Branch. In Japan this information is approved and/or distributed by Deutsche Securities Limited, Tokyo Branch. In Australia, retail clients should obtain a copy of a Product Disclosure Statement (PDS) relating to any financial product referred to in this report and consider the PDS before making any decision about whether to acquire the product.

Printed by: HST Offsetdruck Schadt & Tetzlaff GbR, Dieburg

Print: ISSN 1612-314X / Internet/E-mail: ISSN 1612-3158