

Jürgen Stark: Delivering price stability – benefits and challenges

Speech by Mr Jürgen Stark, Member of the Executive Board of the European Central Bank, at the conference “Defining Price Stability: Theoretical Options and Practical Experience”, Frankfurt am Main, 26 November 2007.

* * *

Ladies and Gentlemen,

It is a great pleasure for me to be here today at this conference reflecting on themes that are close to my heart. This conference will explore, in a nutshell, firstly the benefits of price stability or, to put it differently, the steady state costs of inflation, and, secondly, the relative merits of institutional arrangements by which a central bank can be mandated to its primary task of preserving the purchasing power of the currency through time.

These are the two main themes on which I have been reflecting myself for some time, and I welcome the opportunity offered by this conference to straight up my own thinking and cross-check my opinions with the most recent findings of the academic and central bank research. Overall, I believe much is known now that was subject to dispute only ten years ago. Where I think that our knowledge has not progressed enough in areas that are critical to practical policymaking – which is always the perspective that I want to bring to this conference – I will ask the audience and the prominent scholars present here today to do more work in the future.

The two themes I have just referred to pertain to two logically distinct stages of institutional design. The first stage deals with the definition of price stability. For the Euro Area, the Governing Council has defined price stability as “a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below but close to 2%”. It was also specified that “Price stability is to be maintained over the medium term”. The announcement of a quantitative definition of price stability is an essential element of the ECB’s stability-orientated monetary policy strategy. It provides a clear compass for price and wage setters seeking guidance over an uncertain future and a measurable benchmark against which the public can hold the ECB accountable, thus enhancing the transparency of the overall monetary policy framework. I view the results presented during this conference as providing solid support to the ECB’s quantitative definition of price stability.

The second stage of institutional design takes the first as its starting point and asks the following question: how can a central bank ensure that, over the medium term, policy consistently delivers on the promises that are implicit in the system and, in so doing, it validates expectations and preserves the viability of the regime in place? This second stage complicates the analytical setting by adding economic disturbances and imperfect knowledge. Shocks can produce occasional departures from price stability. How should a central bank view past slippages? Should the central bank always look forward and never pause to reflect on its past record?

1. The quantitative definition of price stability as a medium term objective

Let me start now with the first part of my intervention. Historical experience, empirical regularities and common practice in modern central banking clearly advocate the primacy of price stability as the ultimate objective for monetary policy. Price stability has indeed proved to be the best contribution that monetary policy can give to sound macroeconomic management.

Long term inflation and economic performance

Empirically, the relationship between inflation and economic performance in the long run has been extensively studied. Simplifying, one could argue that the famous Phillips curve has been rotating in the minds (and charts) of macroeconomists in the last 35 years or so.

It was positively sloped when I studied macroeconomics: a little bit more of inflation was supposed to bring a little bit more of real income as a permanent effect. Then, it became vertical, as rational expectations advocates belied the Samuelson-Solow consensus model and drew attention onto a principle that had long been discovered and forgotten: monetary neutrality. It is futile for a central bank to manoeuvre inflation in the hope of systematically stimulating growth, as this policy is doomed to failure in the end, and produces inflation as the only certain outcome.

In more recent years the measured slope has bent to negative. Many of the papers presented at this conference give indications that a negative Phillips curve in the long run not only conforms to evidence, but is born out of general equilibrium micro-foundations.

To be sure, at lower rates of inflation, the empirical long-term link between growth and inflation seems difficult to ascertain, at least on the basis of reduced-form, non-structural analysis. This might motivate the fact that for years – in the absence of data-congruent structural models – the slope issue was considered unsettled. I should note here, to qualify, that – despite these shortcomings – ECB research using sophisticated time series techniques has been successful at extracting more conclusive results from an analysis of the statistical connection between permanent inflation trends and growth. It unambiguously shows that permanent increases in inflation do have a permanent, negative, effect on long term macroeconomic performance.¹

But, structural analysis is certainly best placed to bring more evidence to the issue. And this conference offers a representative menu of last-generation results on the extent to which the Phillips curve is tilted in the “wrong direction” – more inflation being associated with less, not more, growth – and on the welfare implication of inflation in the long run.

Analyses point to potentially sizeable costs of sustained inflation, in terms of lost output and diminished consumption opportunities, even when inflation proceeds at moderate rates. This conference articulates the scope of welfare analysis at least in three directions. The first is most established. A vast research agenda has been locating the costs of inflation in the productive sector and has identified the primary source of welfare erosion in the inflation-generated dispersion of wages and prices. This conference documents how the interactions between nominal rigidities, imperfect competition and real rigidities can potentially have complex and sometime ambiguous implications when it comes to measuring the welfare cost of inflation.

The second direction, re-distributive considerations, investigates an aspect that was often neglected in welfare studies of inflation in the past. A positive inflation rate implies a transfer of wealth that may have important real effects, a fact that we have observed in infamous episodes of the past – the Great Inflation, for example – and which squares with our intuition. In an environment of high inflation, the reduction in the real value of nominal debt obligations may very well act as a deterrent for lenders to supply credit as a matter of regularity.

The third direction adds money and financial choices to the set of variables that are considered in the optimising analysis. Models used to quantify the costs of inflation tend to be cash-less. An interesting paper in this conference shows that when money is appropriately brought into the picture, the result of a negative slope in the long-run Phillips curve – more inflation bringing less activity – is even reinforced.

¹ See Benati (2007)

Overall, recent academic research in general and the papers to be presented and discussed today and tomorrow in particular contribute in important respects to advance our understanding of the mechanisms by which inflation erodes welfare and compresses consumption opportunities over extended horizons. These costs are sizeable and increasing with positive rates of inflation.

Why should central banks tolerate small positive rates of inflation?

This insight brings me to my first question to experts. Inflation is a tax on nominal wealth, so if asked individually about whether that tax should be positive or zero – or even negative, thus becoming a subsidy – agents in the economy would tend to choose the lowest possible tax. But assuming that the economy faces various frictions, and that those frictions interact with zero or negative inflation in ways that might be costly for the economy as a whole, theory argues that a “benign optimizer” would not necessarily opt for a zero or negative inflation tax. How are we to weigh inflation costs to individual agents against the benefits of price stability – defined as low but positive inflation – as an insurance mechanism against various macroeconomic pathologies? This conference makes some progress on two families of such pathologies, those associated with the so-called lower bound to the nominal interest rate, and those possibly arising from downward nominal wage rigidities.

The lower limit to the nominal interest rate is an area of investigation in which research is advanced and, I note in passing, converging to a consensus view. Here, the argument in favour of a low but positive long term inflation rate is well known: it relates to the risk that the zero-floor to the setting of nominal interest rates might at times interfere with the ability of the central bank to stabilise inflation in the face of expectations that prices might start spiralling down. Maintaining a small positive inflation rate on average over the business cycle rather than aiming for literal price stability – that is, a zero inflation rate over the business cycle – would, from this perspective, reduce the probability of approaching very low levels of nominal interest rates, thus preserving some room for stabilising action on the side of monetary policy. Such considerations, I submit, played an influential role in our reflections about the overall design of our strategy and, specifically, the appropriateness of our numerical objective of price stability in the early months of 2003. Extensive internal research at the time, suggested that building a buffer – within the range of rates of inflation to be considered consistent with our objective of price stability – would reduce the likelihood of hitting the zero lower bound of nominal interest rates to insignificant levels.²

A second line of argument in favour of positive rates of inflation has to do with limited downward flexibility in prices and nominal wages. Notably, if wages are rigid to downside movements economic adjustment to shocks could become exceedingly sluggish and a smooth response to economic shocks might be difficult to achieve. In this context, it is also often mentioned that the presence of sizeable and persistent differences in average inflation across euro area countries could exacerbate the cost of downward nominal rigidities in countries with lower inflation. Against the background of these considerations, some positive inflation rate is thought to “grease” the wheels of real adjustment in the macro-economy to various shocks, allowing real wages to moderate in response to, say, unfavourable supply shocks even in the absence of conspicuous – and possibly politically infeasible – nominal cuts.

² Coenen (2003) analyses the implications of the zero lower bound on macroeconomic performance under different assumptions regarding the characteristics of the euro area inflation process, notably the degree of its persistence. His results suggest that the performance of the euro area economy could deteriorate somewhat for inflation targets set below 1 percent. Klaefferling and Lopez Perez (2003) study the level of inflation that maximises the welfare of a representative agent within the framework of a non-linear Neo-Keynesian rational expectations model. They find that the probability of hitting the zero lower bound on nominal interest rates increases rapidly as the inflation target drops below 1 percent.

This conference adds evidence and modelling discipline to this issue. The scant data observations that we possess indicates that nominal wage cuts appear feasible and in fact all but rare if one tries to measure the skeweness of the frequencies of wage adjustments. Provided the monetary regime in place is properly communicated by monetary authorities and solidly internalised by social partners, the economy appears capable of sectoral and macro-wage adjustments if macroeconomic circumstances so require, even at very low rates of expected and realised inflation. So, do wage rigidities build a valid case against very low inflation for modern economies where means of communication and economic literacy have progressed as never in the past? Is the case for positive inflation predicated on wage rigidities perhaps over-stated and based on a macroeconomic and institutional landscape that have long ceased to exist? I sense that we do not know enough to venture an answer and I maintain great expectations about the results of an ECB-Eurosystem research undertaking – the Wage Dynamics Network – which, I am sure, will shed some light on this key aspect of monetary policy and macroeconomic governance.

All in all, a wide consensus has solidified around the fact that the costs involved in sustained inflation – even at relatively low rates – are sizeable and that maintaining inflation at rates relatively far from zero entails asymmetric trade-offs. One has to forgo benefits that are certain – those associated with literal price stability – as a price for defusing risks that are – by their very nature – of an uncertain nature and magnitude.

2. Implementing price stability

The implementation of a stability-orientated monetary policy in the medium term is my second theme. As I said, this takes the medium term objective as given, and tackles the problem of designing the conduct of a price-stability oriented monetary policy in a complex and stochastic economic environment. The first and foremost complication in this setting is credibility. The credibility problem has to do with the way a central bank can establish a mutual understanding with its public in which policy actions – when they are taken – are correctly interpreted. Ultimately, the credibility problem for a central bank entails identifying the framework and procedures by which the public observes and keeps record of the consistency of policy decisions over time.

Credible commitment to price-stability and the associated gains from a rule-like behaviour

There are two guiding principles to the successful implementation of price stability. The first is that a commitment to a monetary policy strategy, if perceived as credible by economic agents, is superior to unfettered, discretionary policy. The second principle is that, to build and maintain a high level of credibility, a central bank cannot ignore the past, and the promises – implicit or explicit – made in the past, when designing present policy. I will offer some thoughts on both principles in turn.

The first principle is uncontroversial. A broad strand of literature on optimal monetary policy under rational expectations has found that it is crucial to take account of the effects of the systematic and predictable component of monetary policy on expectations for future policy. A clear monetary policy strategy, made of a broad analysis and assessment of the state of the economy and of a disciplined framework for consistent decision-making, delivers a better outcome than a fully discretionary setting, whereby decisions are taken sequentially pursuing, at each point in time, objectives that policymakers occasionally select in a fully discretionary and possibly inconsistent fashion. If the central bank is able to convince economic agents and markets participants of its analysis and assessment of the outlook, and about the policy decisions that it is going to take in response to it, expectations of the short-term interest rates will adjust in an equilibrating direction. Such a leverage of central bank pronouncements and actions over private economic behaviour is an asset that can turn out to be very beneficial in cases of major shocks and risks.

As regards the ECB, our commitment to fulfil our mandate by implementing consistent and systematic policy actions is deeply rooted in the institutional framework of EMU on the one hand and in the ECB's monetary policy strategy on the other hand. Briefly, let me just recall in particular that this credible commitment is enshrined in the Treaty, which guarantees for the independence of the ECB and thereby ensure that the ECB will have no impediment in pursuing its primary objective of price stability. Turning to the elements of the strategy, I would like to highlight the clarity of the ECB's objective, the comprehensiveness of the analysis leading up to the Governing Council's policy decisions as well as the medium term orientation of our strategy.

Maintaining credibility for the conduct of monetary policy

A second guiding principle for monetary policy conduct is that a central bank cannot ignore the promises – implicit or explicit – made in the past, when designing present policy. In a world of imperfect knowledge and bounded rationality, the track record of a central bank is the only guide for the public to build a view on the true objectives guiding monetary policy, the authentic motives that direct its actions, over and beyond the official purposes that it openly professes. This conference assigns such practical principle of policymaking the theoretical dignity that it deserves.

The central question here is how a monetary authority profoundly committed to the objective to which it is mandated, should incorporate in its rule-based behaviour past deviations of inflation from levels that it considers consistent with price stability. A critical aspect to answering this question is the degree to which the economy learns about the economic landscape, including the central bank's own inclinations. It is clear that a scenario in which central banks' inclinations and market views are perfectly aligned is unlikely to match reality. In fact, survey evidence about private sector expectations as well as the forecasting practice at central banks suggests that a considerable amount of learning takes place in the economy and that expectations seem to be quite heterogeneous among agents. Under learning, the transmission of economic disturbances is amplified and prolonged. Learning may be a source of excess sensitivity of the economy to shocks compared to a situation where agents form model-consistent rational expectations. Moreover, long-term inflation expectations may over-react to shocks and drift endogenously, when disturbances can lead to a re-assessment by private agents of the functioning of the economy in general and the central bank's behaviour in particular.

In these circumstances, the credibility issue becomes critical to controlling expectations. From an operational perspective, a world characterized by imperfect information and learning increases the value of transparent communication about the objectives of policy, reinforced by a precise quantitative definition of price stability as well as clarity about the way those objectives are systematically pursued. However, there is no better way to establish a reputation than letting the public itself infer and recognise the true monetary policy objectives from the central bank's repeated behaviour.

A central bank systematically looking forward – and never pausing to reflect on its past record and the way this might be perceived by its public – might expose itself to the risk that past deviations of inflation from the medium term objective, by compounding over time, might endanger credibility and thus undermine the very foundations of the monetary institutions in place.

The ECB's monetary policy strategy, with the primacy that it assigns to price stability, forces policymakers to systematically pause and reflect, not only on the future design of policy, but also on past achievements. As I said, the past is a standing guide to orient expectations and is an instrument to maintain credibility. For example, our strategy directs us to the following prescription: repeated and one-sided adverse shocks which directly affect the inflation rate and may not require, if taken individually, any specific policy adjustment, could very-well become destabilising, should private agents start doubting on the commitment of the

monetary authority to maintain low and stable inflation and should expectations become disoriented.

However, this encouragement to look in both directions, which we receive from our mandate, has to be reconciled with a further principle, our medium-term orientation, which advises against excessive fine-tuning of macroeconomic variables, including inflation. We consider fine-tuning an extremely risky strategy for a central bank. Whether it might be predicated on present or past shocks makes, in the end, little difference.

This conference suggests that, overall, a regime incorporating some degree of “history dependence” – as the literature labels central banks’ concern for their past track records – can be associated with sizeable gains in terms of macroeconomic stabilisation. These findings are interesting and stimulating. But the risks of fine-tuning which might be implicit in a dogmatic approach to “history dependence” should not be understated.

How best to combine and temper the bidirectional perspective – “look at the future, do not lose sight of the past” – with the need to maintain a high level of credibility, appropriately manage expectations and avoid fine-tuning decisions is of course a challenging line of investigation. I can only encourage this distinguished audience to recognize and accept the challenge.

6. Concluding remarks

Present-day dynamic general equilibrium analysis is extremely stylised and, in many respects, still in its infancy. This being said, I consider that this analysis can have important messages for “real-life” policymakers. I tried to underscore in my intervention today the central importance of the price stability objective in the design of monetary policy, a result that the optimising analysis presented at this conference underpins and reinforces. I emphasised in particular the role of credible commitment and the efficient management of private expectations in the conduct of monetary policy. A successful monetary policy regime should build and preserve a high level of credibility. Solidly anchored long-term inflation expectations contribute to macroeconomic stability and smooth conduct of monetary policy.

The excellent track record of modern central banking in this respect should not lead to complacency. We still know too little about the way expectations determine macroeconomic outcomes, and there are wide research avenues which I am convinced you will staunchly continue to explore. While in a learning mode, we need to be vigilant. Any temptation on the side of central banks to relax their determination in responding to potentially inflationary developments would be a threat to their credibility and could undermine the progress made on the control of inflation over the past two decades.

I thank you for your attention.