Università Cattolica del Sacro Cuore
A Future for Europe. Conference in memory of Giacomo Vaciago

Monetary policy in the euro area: past, present and near future

Speech by the Deputy Governor of the Bank of Italy

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1. Introduction[1]

The figure of Giacomo Vaciago is part of our country's recent history. Following his studies at the Catholic University of Milan and at Oxford, Giacomo was a Professor of Economics at Ancona and then Professor of Political Economy and Monetary Economics at the Catholic University of Milan. In 2016 the Catholic University awarded him the title of Emeritus Professor, closing the circle that began with his graduation in 1964. The strength of Giacomo's commitment to society and its institutions is well-known: columnist for the newspaper *Il Sole 24 Ore* from 1983; advisor to the Minister for the Treasury (1987-1989) and to the Prime Minister (1992-1993); Mayor of Piacenza (1994-1998); advisor to the Ministry of Art and Culture (2003-2005) and to the Minister of Labour and Social Policies (2014-2016).

Giacomo was a committed European. His last book, *Un'anima per l'Europa* (A soul for Europe), posed some key questions about the future of the Union.[2] Four years ago he urged Europeans to 'pool their virtues rather than their vices' – something they had often done in the past – and his words still hold true today.

But first and foremost, Giacomo was a friend I had the good fortune to work with on several occasions. Our conversations were an opportunity to look more closely at problems and analyse them rigorously, but also a way to defuse situations, tongue-in-cheek.

The page commemorating Giacomo on the Catholic University's website opens by noting that 'students who attended Giacomo Vaciago's lessons on Monetary Economics and Political Economy were very fortunate, because they learned things that are not in the textbooks'. Indeed, the monetary policy of recent years can certainly not be found in a textbook: it is no coincidence that Giacomo observed it carefully and was a strong supporter.[3]

In a speech I gave in April 2016 my starting point was the observation that in the decade following the collapse of Lehman Brothers central banks have been more creative and

[1] I would like to thank Piergiorgio Alessandri, Marco Casiraghi, Pietro Rizza, Stefano Siviero, Emilio Vadalà and Gabriele Zinna for their useful comments and help in preparing the text.

[2] 'Continue along the path of Union? How? Only a small part of what we have today is an economic union: the decisions of national and local governments and the many corporations in each country still count for too much. Nor can we speak of monetary union until banking union has been achieved. So what is lacking in our very incomplete union?'

[3] Interviewer: 'But can quantitative easing work?' Giacomo Vaciago: 'It took Draghi a year to convince the Germans that it was possible and he has never backed down on this; it is he who is the true German at heart'. (AGI Roma, 8 March 2015).

enterprising than might have been expected.[4] It's natural to wonder what has changed in the last two years and to revise those reflections in the light of the challenges that central banks face today.

2. Inflation in Italy and in the rest of the world: the outlook beyond the short term

Inflation in the leading economies has been anomalous recently for at least two reasons. First of all, after the onset of the financial crisis, inflation was very low compared with that recorded after World War II (Figure 1).[5] Moreover, it has varied considerably less than in the past. This exceptionally and persistently low inflation has provoked a debate over the adequacy of central bank objectives, tools and strategies.

The scale and variety of the monetary policy interventions implemented by the major countries in the last few years is well-known and there is no need for me to list them here.[6] Less well-known is the evidence for the strong impact of these interventions on inflation and growth in the Eurozone.[7] The first clear sign of their effectiveness is the lower risk of deflation: in 2014, before the announcement of the Public Sector Purchase Programme (PSPP),[8] the probability of deflation over a five-year time horizon was more than 30 per cent (Figure 2);[9] this gradually declined to practically nil in 2017. As for growth, our estimates show that the Asset Purchase Programme (APP) raised productive activity by almost 2 percentage points cumulatively in the two years 2016-2017,[10] which is consistent with President Draghi's assessments.[11]

The benefits of monetary stimulus have not come to an end. In the light of the recent positive signs for the economy, last October the ECB Governing Council decided to extend its

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[4] Cf. Panetta (2016).

[5] Low (or negative) inflation rates were more common between the end of the 19th century and World War II. But things were different then: the gold standard limited the money supply and full employment and growth did not influence the decisions of the monetary authorities (Bordo and Schwartz, 1999).

[6] Cf. Visco (2016) and Bank for International Settlements (2015).

[7] Cf. Casiraghi, Gaiotti, Rodano and Secchi (2016).

[8] The PSPP, launched in March 2015, provided for the purchase on the secondary market of public sector securities with remaining maturities of between 1 and 30 years. Purchases are limited to an issue share of 33 per cent, mainly so as not to influence market prices.

[9] Estimates were based on inflation option prices; see Cecchetti, Natoli and Sigalotti (2015).

[10] Estimates were calculated using the model proposed by Burlon, Gerali, Notarpietro and Pisani (2015).

[11] Cf. Draghi (2018).

asset purchases until September 2018, reducing the monthly pace from €60 billion to €30 billion, and strengthen its forward guidance at the same time.[12]

Inflation and growth signals are encouraging, but the objective has not yet been reached. It is crucial, therefore, to analyse the causes of low-flation. The fundamental question is to what extent low inflation is a structural rather than a cyclical phenomenon. The answer to this question has implications both for managing monetary policy in the short term and for deciding on central banks' strategies and tools for the next few years.

3. The causes of low-flation

Among the root causes of low-flation, experts often cite the structural changes that have taken place in recent decades, first and foremost the globalization and technological progress that are transforming production processes worldwide.[13]

Globalization – and with it the entrance of several emerging countries, notably Eastern European countries and China, on the world trade stage – has fostered the delocalized production of goods and services, making inflation in the advanced countries less sensitive to domestic economic conditions, especially in the labour market. In the advanced economies this has caused production costs in a number of traditional sectors to fall, converging towards those of the emerging countries.[14]

The second factor, i.e. the spread of new technologies, can directly curb inflation by raising productivity or by exerting downward pressure on wages and by reducing or eliminating certain low-value-added jobs that are increasingly taken over by machines. Productivity, however, has slowed in the advanced economies in the last ten years.[15] Technology can affect inflation indirectly as well, by fostering globalization and the development of global value chains.[16] The 'Amazon effect' is one such technology factor:[17] the internet allows consumers to compare prices, thereby reducing retailers' margins with repercussions on price levels and dynamics.[18]

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[12] Rates will be raised and reinvestment interrupted only well past the horizon of the ECB's net asset purchases.

[13] See, for example, Jens Weidmann's speech on 18 January 2018.

[14] Cf. Auer, Borio and Filardo (2017).

[15] See Manaresi and Pierri (2017).

[16] A global value chain is a type of organisation in which the individual stages of production are carried out by companies located in different countries.

[17] See Forbes (2016).

[18] Cf. Yellen (2017).

Thus, a country's inflation would be largely independent of the domestic economic situation, making it harder for central banks to control it.

This is only part of the story, however. Globalization and technology have undoubtedly exerted downward pressure on prices. Such factors have been at play for some time, though, and may account in part for the slow decline of inflation in recent *decades*, but for the very same reason they cannot explain the rapid decrease of recent *years*.

Moreover, globalization has been slowing lately, not accelerating. This has happened with integration through global value chains: the share of export value added generated outside the exporting country has ceased to grow worldwide since the onset of the crisis in 2008 (Figure 3).[19] The same applies to e-commerce, which in recent years appears to have had less of an effect on prices than before: in the United States the Amazon effect is estimated to have reduced personal consumption expenditure inflation by 0.1 per cent, which is less than the Walmart effect did at the beginning of the millennium.[20] The profit margins of traditional retailers cannot keep falling forever: once equilibrium is reached, any cost increases are bound to be transmitted to the prices of final goods.

The integration of the markets for goods and factors of production seems to have produced limited effects. The link between Eurozone inflation and global unutilized capacity is tenuous.[21] Empirical analyses support the hypothesis that globalization has not altered the relationship between inflation and output gap.[22]

All told, it is difficult to pinpoint the causes of low-flation without resorting to standard explanations from macroeconomics textbooks: a negative output gap and weak inflation expectations. Such an interpretation fits the observation that inflation has become increasingly sensitive to the Eurozone economic cycle in recent years,[23] but the data need to be analysed with care.

The rate of unemployment in the Eurozone has diminished by some 3 percentage points since 2013, falling to the current level of 9 per cent. Unemployment is back to what it was before the sovereign debt crisis, but inflation is still below the level observed at that time. This

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[19] OECD (2017).

[20] Charbonneau, Evans, Sarker and Suchanek (2017).

[21] Several studies have looked at the possibility of including measures of global value chains and unutilized capacity in analyses of Eurozone inflation based on the Phillips curve; see European Central Bank (2017).

[22] See, for example, Gaiotti (2010).

[23] Riggi and Venditti (2015).

seemingly contradicts the explanation of low-flation as being due to factor underutilization and below-potential economic activity.

The contradiction is only apparent, however. The unemployment rate is an imperfect measure of actual labour utilization as it only considers job-seekers. In fact it rises to 18 per cent if labour utilization is calculated to include underutilized labour.[24] The figure is not far off the value recorded in 2013 (20 per cent), at the end of the last recession.[25] Empirical analyses[26] lend support to the hypothesis that wage growth was held down in the last expansionary phase of the cycle by the fact that actual labour utilization was less than the unemployment rate indicated.[27]

The second traditional determinant of inflation – i.e. expectations regarding its future path – can also be influenced by low observed inflation. When the economic context is undergoing change, firms and households without exhaustive information about the state of the economy may form their inflation expectations through a process of gradual learning, attributing the greatest weight to recent dynamics. Hence, a series of deflationary shocks (like those observed in the euro area from 2013 on) may contribute to de-anchoring inflation expectations, making convergence towards the central bank's aim a lengthier and more costly process.[28] This type of mechanism fits the data in the Bank of Italy's Survey on Inflation and Growth Expectations: in recent years firms' expectations have been heavily influenced by (low) inflation. Moreover, firms now concur in forecasting low inflation, whereas previously an inflation rate that was far from the objective was associated with a wide dispersion of expectations. This would suggest that low-flation is no longer regarded as an anomaly, but increasingly as the norm.[29] Lower and less widely dispersed inflation expectations entail a risk they will become de-anchored, so that observed future inflation will be more likely to remain low.

These trends are reflected in wage negotiations**.** On several occasions between late 2015 and early 2016, the social partners in Italy did not take inflation expectations into account in their negotiations,[30] so that many of the contracts signed at the time either ignored inflation or

[24] Underutilized labour includes part-time workers (who would be willing to work longer hours), job-seekers not immediately available and discouraged workers (those willing to work but no longer actively job-seeking).

[25] The number of hours worked per employee is still 4 per cent below the pre-crisis average.

[26] Bulligan, Guglielminetti and Viviano (2017).

[27] Nominal wages grew on average by 1.3 per cent from 2013, well below the pre-crisis rate.

[28] Cf. Busetti, Ferrero, Gerali and Locarno (2014).

[29] Cf. Bartiloro, Bottone and Rosolia (2017).

[30] This is also due to an attempt by firms to recoup at least part of the pay rises paid in 2013-15 over and above observed inflation.

included automatic ex-post wage indexation. In other cases the renewal of expired agreements was postponed. As a result, less than a fifth of the labour contracts in force at the end of 2016 included expected inflation among the parameters for calculating pay rises.

Thus, the data indicate that labour is still a widely underutilized factor of production and that inflation expectations reflect the deflationary shocks of recent years. These are cyclical problems, not structural ones.

4. Monetary policy implications

These considerations explain and justify the Eurosystem's current expansionary monetary policy stance, which is designed to stimulate demand, increase factor utilization and exert upward pressure on wages. The goal is to secure a self-sustained return of the inflation rate towards levels that are below but close to 2 per cent, one that is not solely based on current policies or on temporary factors like oil prices. As President Draghi has pointed out, this requires trust in the effects of monetary policy, persistence in pursuing the objective, and patience in waiting for the effects to emerge.

The Eurosystem's policies reflect the degree of prudence required during this phase. The ECB Governing Council has recently recalibrated its asset purchases, both public and private, and has reinforced its forward guidance. It has announced that rates will remain at their present levels for a prolonged period of time, well past the end of net purchases under the programme, which will continue at least until September 2018. In addition, the Eurosystem will reinvest the principal payments from maturing securities for an extended period of time after the end of its net asset purchases, and in any case for as long as necessary. It has also clarified that the intensity of the monetary stimulus will depend on economic and financial conditions in the Eurozone. In March, the Council adjusted its communication to reflect the economy's lower exposure to tail risk as compared with the past.[31]

Naturally, this does not eliminate the need to assess well in advance, even as of now, the implications of monetary policy normalization, which will occur sooner or later. The experience of others countries[32] indicates that the normalization process is a delicate transition, one where

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[31] Reference to the possibility that the Council might increase the amount and duration of purchases was eliminated following particularly weak inflation dynamics.

[32] The Federal Reserve ended its asset purchase programme in 2014 and raised rates for the first time one year later. Only subsequently did it reduce the stock of securities in its portfolio. The Bank of England's normalization was altered by the unexpected outcome of the EU referendum, requiring additional expansionary measures.

tensions and sudden increases in volatility are possible.[33] But even this process, if prudent and gradual, may be managed without shocks to the financial system and the economy. The Federal Reserve Chairman Powell underlined the importance of gradualism in adjusting monetary policy to the macroeconomic outlook and in achieving the Federal Reserve's objectives.[34]

There is no reason to believe that monetary policy normalization in the Eurozone cannot be achieved without shocks to the financial system or the real economy, as long as it takes place gradually, within a context of robust growth. Gradualism is always essential when there is marked uncertainty about current macroeconomic conditions – and in the euro area this largely reflects the difficulty of accurately measuring potential output and labour utilization. Prudence is also needed to ensure that inflation expectations are consistently in line with the objective of price stability following the long phase of low-flation. Lastly, another important factor is the asymmetric distribution of risks – an early exit would involve greater risks than a late one, in that it could hamper the recovery and the return to price stability.

The signs are encouraging. For example, labour contracts signed in Italy in recent months have again started to refer to expected inflation.[35] But monetary policy must remain expansionary for an extended period of time.

5. The outlook for the Italian economy

The Italian economy is able to absorb a rise in the yield curve as long as it is associated to a strengthening of the business cycle. Compared with the most serious phase of the crisis, GDP has returned to steady growth, boosted by both domestic and foreign demand. The improvement in labour market conditions and in confidence is buoying consumption. Given the favourable expectations for demand, investment has returned to sustained growth; it should regain pre-crisis levels in 2019. The growth in exports since 2010 exceeds that of potential foreign

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[33] In the spring of 2013 the first signs of a possible reduction in monetary stimulus by the Federal Reserve provoked a brusque reaction in the markets (the 'taper tantrum'): interest rates in dollars rose sharply, causing a drop in share prices and an increase in volatility and risk premiums. The Federal Reserve kept its asset purchases unchanged until the end of the year, underlining the difference between changes in the programme and the management of interest rates. An increase in volatility was also recorded in February, when the release of better than expected employment figures generated fears that rates would increase faster than projected. The correction was amplified by the widespread use of 'short volatility trades'. Cf. Bhansali and Harris (2018).

[34] 'We are in the process of gradually normalizing both interest rate policy and our balance sheet'. 'In the [FOMC's] view, further gradual rate increases in the federal funds rate will best promote attainment of both of our objectives' (Powell, 2018).

[35] Some contracts signed in the third quarter of 2017 (trade, telecommunications, goods transport and logistics, postal services) provide for significant wage increases (see Banca d'Italia, 2018). Moreover, unlike in the previous two-year period, they did not incorporate automatic adjustments for actual inflation, which could limit wage growth in a context of low inflation.

demand; it was more than 5 per cent in 2017, despite the appreciation of the euro. The balance on current account, which had been positive since 2013, recorded a surplus of nearly 3 per cent of GDP in 2017. The net debtor position has decreased considerably, from 25 per cent of GDP in 2014 to less than 7.5 per cent in 2017, the lowest figure since 2002. According to our projections, the net international investment position will continue to improve over the next three years, to the point where it will turn positive.

Against this background, the financial situation of households and firms and that of banks has improved. The latter, as well as recording a sharp drop in the flows and stocks of non-performing loans, will benefit from the increase in profits stemming from the upturn in market yields.[36]

Despite the high debt-to-GDP ratio – partly a legacy of the crisis – an increase in yields under orderly conditions would not put the sustainability of public finances at risk. After increasing by 30 percentage points since the onset of the crisis, over the last few years the debt-to-GDP ratio has remained essentially stable thanks to the improvement in growth and to the primary surpluses. Furthermore, the high average residual maturity – more than 7 years – significantly tempers the sensitivity of the cost of debt to interest rate shocks. According to our estimates, a permanent increase of 1 percentage point in debt issuance costs would mean an increase in the ratio of interest expense to GDP of about 0.1, 0.2 and 0.4 percentage points over one, two and three years respectively.[37]

While these trends may be reassuring, they are not sufficient to eradicate doubts or fears regarding the sustainability of debt in the medium term. Over the next decade, the public debt-to-GDP ratio is expected to narrow, partly owing to an increase in interest rates, but only if the differential between the cost of debt and real GDP growth remains small and budgetary policy is prudent (Figure 4). In this type of scenario, debt could fall to 100 per cent of GDP in ten years if the primary surplus stays in line with the objectives set out last September in the Update to the Economic and Financial Document.[38]

The main element in these analyses is not just the real interest rate – '*r*' as the macroeconomists call it – but the gap between this rate and that of real GDP growth, i.e. '*r-g*':

[36] Bank of Italy (2017a).

[37] Bank of Italy (2017a).

[38] In the baseline scenario in Figure 4, in which the public debt-to-GDP ratio falls below 100 per cent in 2027, we assume that the primary surplus rises to 3 per cent in 2020, that GDP grows by 1.5 per cent and that the average real interest rate paid on government debt converges to 2.5 per cent over the next 20 years.

given the same initial debt, a rapidly growing economy can clearly bear greater financial burdens.[39]

We must not forget that the cost of debt also depends on the sovereign spread demanded by investors. Keeping the spread down is obviously easier if the outlook for growth is solid, so robust growth is crucial to ensure debt sustainability against a backdrop of growing interest rates.[40] Without it, no financial alchemy or miraculous measures of austerity can guarantee the correction of the public finances.

Nor should we forget that, when the time is right, monetary policy will gradually be normalized at a pace in line with the macroeconomic trends in the euro area as a whole and not with those in Italy. The economic situation is improving in this country, but any increase in potential long-term growth – indicated by g – requires us to persevere resolutely with the reforms already under way to resolve the structural problems of Italy’s economy.

It is a question of expanding the potential for growth and no longer, or not only, of narrowing a negative output gap. If we act quickly we will be able to exploit the synergy between monetary and structural policies: an expansionary monetary policy to sustain aggregate demand helps in carrying out reforms, thereby reducing the short-term costs.

Seizing the opportunities provided by the current favourable economic situation will also provide greater room for manoeuvre to deal with adverse cyclical situations in the future. Lower public debt would also make it possible to reduce the distortions caused by a high tax burden and to boost investment in human and physical capital.

These reflections on the normalization of monetary policy remind us that a prudent budgetary policy is in Italy’s interests, regardless of the indications provided by the international institutions. It is also vital for economic and financial stability, and for growth.

6. Conclusions

Monetary policy has played a fundamental role in steering the economy and the financial system out of the crisis. Low-flation makes the current accommodative monetary policy

[39] If the cost of debt exceeds GDP growth ($r>g$), stabilizing the debt-to-GDP ratio requires a primary surplus (revenue exceeding expenditure net of interest payments). The higher the interest rate and the lower the GDP growth rate, the larger the balance needed to guarantee stability. Cf. Domar (1944). For an analysis of the outlook for the public finances in Italy see Visco (2017).

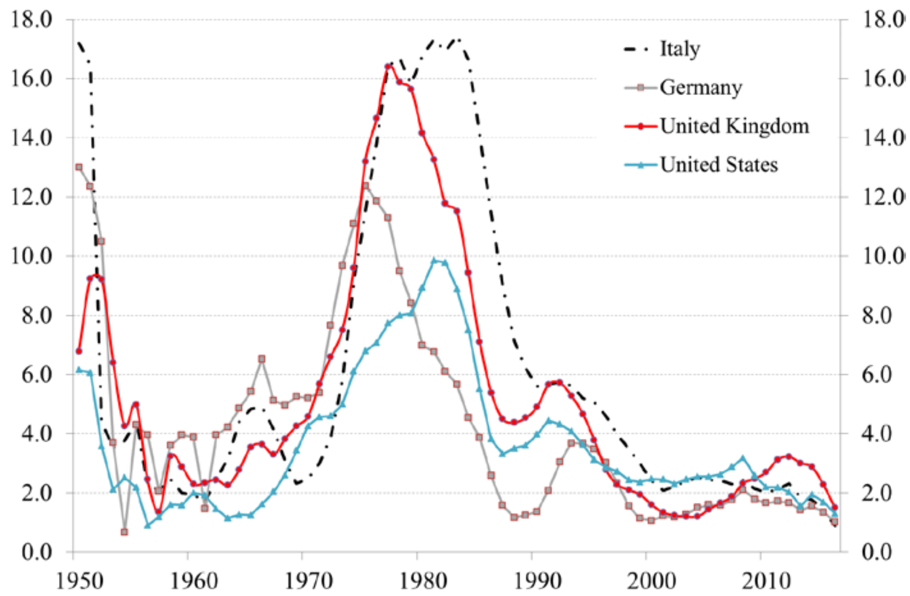
[40] A rise in interest rates accompanied by higher growth would not undermine stability even in countries with high debt levels such as Italy and Japan. Only an increase in interest rates that is not tied to prospects for growth would produce risks; cf. Blanchard and Zettelmeyer (2017).

necessary. In due course, monetary normalization will have to be gradual and calibrated to the macroeconomic situation. The Italian economy need not fear this normalization process, but it could deal with it from a much stronger position were it not hampered by a high debt-to-GDP ratio.

The debate on monetary normalization will bring the topic of reform to the fore. In an economy with high public debt and low productivity, reform is essential for increasing potential growth and making the economy less vulnerable, and it is in everyone's interest to pursue it.

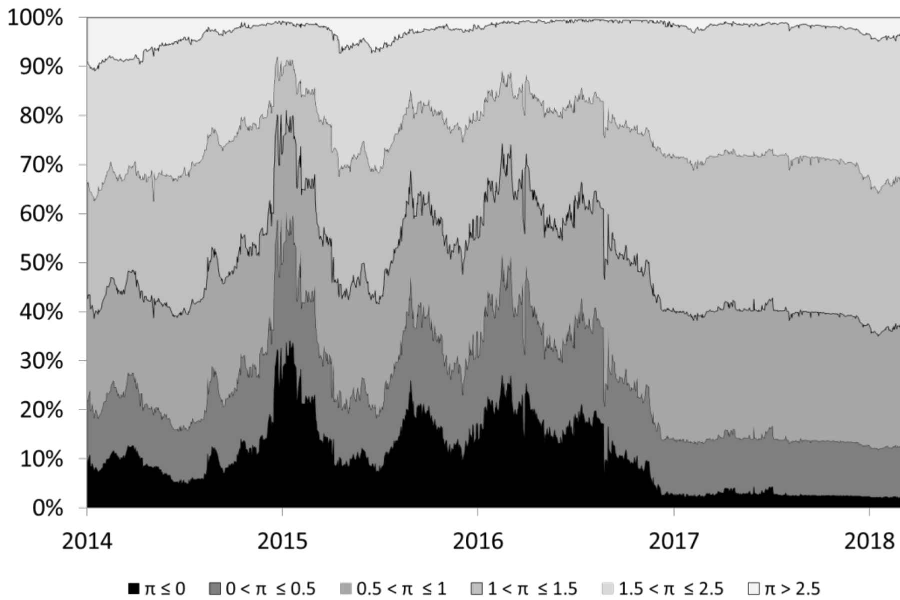
In an interview in 2013, Giacomo Vaciago answered a question on the pros and cons of the Fiscal Compact as follows: 'I still see people carrying pieces of paper from one office to another in many public institutions … I still get e-mails from people asking me to send a fax or letters that have to be put into envelopes and stamped… If we're still using 20th century technology we're clearly not ready for growth'. If we all made a concerted effort to adopt reforms and use 'this century's technology', we would be doing a favour, posthumous maybe, to the colleague and friend we are remembering today.

Figure 1: Inflation, 1946 - present



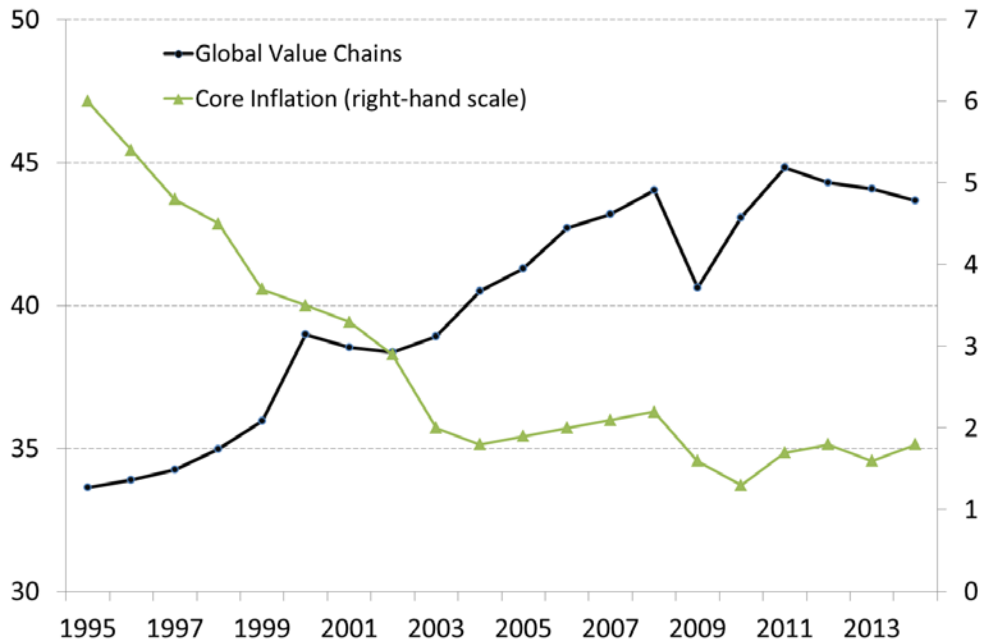
Annual growth rates of the consumer price index, 5-year moving averages. Source: C. Reinhart and K. S. Rogoff, 'From Financial Crash to Debt Crisis', NBER Working Paper, 15795.

Figure 2: Inflation expectations derived from option prices



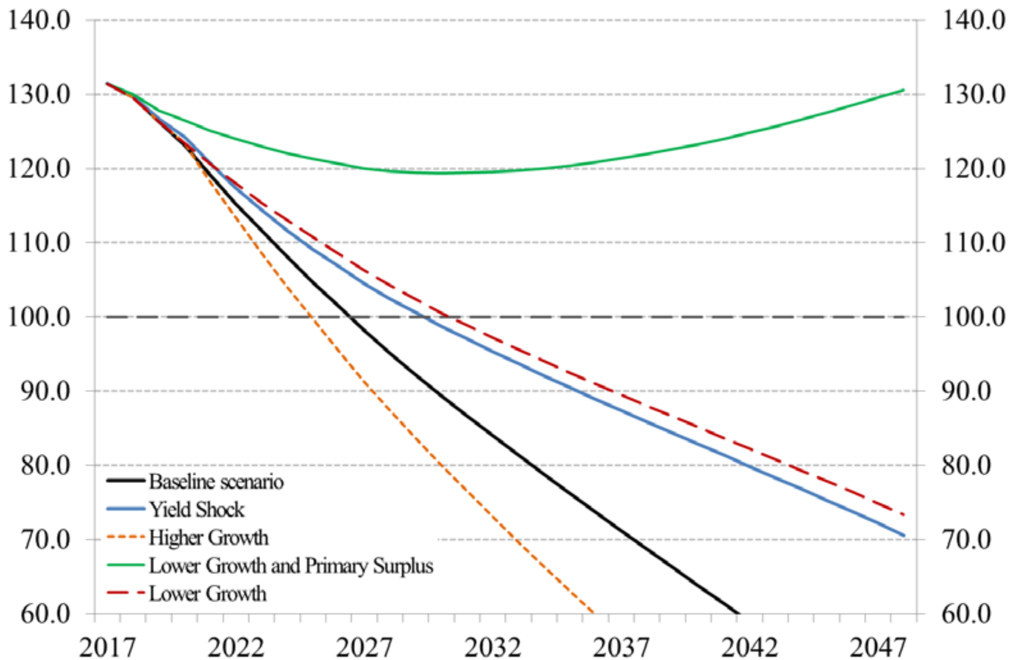
Eurozone risk-neutral 5-year inflation probability derived from the price of inflation options. For the methodology used, see Cecchetti, Natoli and Sigalotti (2015). The risk-neutral probability reflects both expected inflation and risk premiums. The figure shows the change in the probability of inflation falling within various intervals in the next 5 years. The probability of zero or negative inflation is shown in the lower section (dark area) of the figure.

Figure 3: Global value chains and inflation



For the construction of the data on global value chains, see Borin and Mancini (2015). Core inflation is calculated net of energy and fresh food products and refers to the average for OECD countries. Source: OECD.

Figure 4: Simulation of the trend in the debt-to-GDP ratio



Baseline scenario: potential growth (g) of 1.5%; average real interest rate on the public debt (r) converging to 2.5% in about 20 years; primary surplus (D) increasing to 3.0% (in 2020). The other scenarios are constructed by adjusting some of the hypotheses in the baseline scenario. Yield shock: r increases by 1 percentage point in 2018, converging to 3.5% in about 20 years. Higher growth: g=2.5%. Lower growth and primary surplus: g=0.5% and D=1.5%. Lower growth: g=0.5%.

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