Vítor Constâncio: Monetary policy challenges in the euro area

Speech by Mr Vítor Constâncio, Vice-President of the European Central Bank, at the Annual Conference of the Marshall Society on "The power of policy: solving problems and shaping the future", Cambridge, 31 January 2015.

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Summary

The monetary policy experience of the past seven years is reviewed. In pursuit of its objectives, the ECB has been very flexible in adjusting and expanding its toolkit.

In a first phase, from 2008 to 2013, monetary policy measures aimed at easing financial constraints arising from malfunctioning money and funding markets. Non-standard monetary policy was conducted in a context of well-anchored inflation expectations. It was not aimed at, but unavoidably resulted in, the expansion of the ECB's balance sheet.

The second phase, since 2013, is characterised by a more active use of the ECB's balance sheet, as inflation started to fall significantly below 2%, accompanied by declines in various measures of long-term inflation expectations. Non-standard measures, introduced as from July 2013, included a policy of forward guidance, asset purchase programmes of private debt, a programme to provide targeted long-term funding to banks and an enlargement of the asset purchase programme to include sovereign bonds.

A number of concerns have been voiced regarding the adoption of a large scale asset purchase programme (APP) in the euro area. It is argued that these concerns are unfounded since: the transmission channels of the APP go well beyond the direct effect on the price and yield of the purchased assets; government fiscal discipline should not be achieved at the expense of central bank independence; central banks have instruments to absorb the effects of an expanded monetary base should inflation become a risk in the future; and finally, exuberance in specific asset markets should be addressed with macro-prudential policy tools, at national level, since price stability relevant for monetary policy refers to the market of goods and services, not to asset markets at large.

At the moment, the euro area is suffering mostly from weak aggregate demand. Supply-side policies are necessary to increase the medium-term growth potential. Monetary policy, aiming at price stability by stimulating demand and supporting investment, should reduce employment and output gaps, thereby positively affecting medium-term growth.

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Ladies and Gentlemen,

Let me start by thanking the organisers for this invitation to participate in the Annual Conference of the Marshall Society. It is a pleasure to be here and support the Marshall Society's quest to further young economists' interest in economics.

The subject of this year's conference is ambitiously on the power of policy to solve problems and shape the future.

In modern times, monetary policy is usually considered the most powerful of the macro policies to stabilise the economy. It was not always assessed like that and it is important to be aware of its limitations. For instance, it is sometimes said that the world avoided the worst in 2008, only because central banks made bold use of their tools, cutting rates and providing abundant liquidity. The truth is that without the significant use of fiscal policy in 2008 and 2009 stimulating our economies and supporting the banking sector, the meltdown of the financial system could not have been avoided. At their meeting in Toronto in 2010, the G20

decided to reverse the policy and embarked in fiscal consolidation, to different degrees, leaving monetary policy to deal with macroeconomic stabilisation. In this context, it is easier to explain by fiscal policy short-term effects, the double dip suffered by the euro area economy after 2011, than by the behaviour of monetary policy.

The tasks for monetary policy became particularly challenging in the euro area, in view of the imbalances built prior to the crisis by private debt expansion and the subsequent sovereign debt crisis of 2010–2012.[1] The resulting financial fragmentation made the proper transmission of monetary policy more difficult.

The first part of my remarks today will be dedicated to briefly review the experience of the past seven years in order to illustrate two broad features of the Governing Council's response to the evolving phases of the crisis. The first feature is naturally that all ECB actions have always been guided by the compliance with its mandate, which is to maintain price stability as a primary objective as I will clarify below.

The second feature is that, in the pursuit of its objectives, the ECB has been very flexible in adjusting and expanding its toolkit. Flexibility has been an important principle to ensure that economic and financial shocks would be met by the most efficient response at any point in time. Without going into the details of the individual instruments that we have operated, I will identify two broad phases in our response to the crisis. The two phases are characterised by different uses of our balance sheet as an instrument of monetary policy.

This will lead me to comment on the implications of our approach for the current cyclical phase. The main message that I would like to convey is the following: even if the traditional instruments of monetary policy, short-term interest rates, are constrained below zero, central banks have other tools, including large scale asset purchases, to ensure price stability over the medium-term. The ECB has never hesitated to use these tools, in accordance with its mandate. The monetary policy measures announced between June 2014 and last week are a testimony of our resolve and our independence.

The ECB's goal and strategy

Let me start by recalling the exact contours of the ECB mandate. Monetary policy in the euro area has a strictly lexicographic mandate. Price stability is its primary objective according to Art. 127 of the Treaty. It is only without prejudice to the objective of price stability that the ECB should support the general economic policies in the Union, including the stabilisation of output and unemployment, as well as financial stability.

The review of the ECB strategy in May 2003 clarified that price stability in the euro area is to be understood as a year-on-year increase in the harmonised index of consumer prices (HICP) below but close to 2%. Another fundamental aspect of the ECB's monetary policy is that it aims to pursue price stability over the medium-term and not every quarter or every year. This emphasis on the medium-run recognises the fact that monetary policy cannot stabilise prices at short-horizons and that short-term fluctuations are inevitable, especially if they result from supply shocks. Hence, the ECB is not an "inflation nutter", to use the expression of Mervyn King, ready to implement extreme changes in its policy instrument to try to prevent any blip in inflation. As long as they are temporary, short-term fluctuations in inflation do not pose a threat to price stability, because they do not affect inflation expectations in the medium-term, and, therefore, key economic decisions such as wage formation or real interest rates.

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[1] See Constâncio, V. (2013), "The European Crisis and the role of the financial system" Speech at the Bank of Greece conference on "The crisis in the euro area" Athens, 23 May 2013, http://www.ecb.europa.eu/press/key/date/2013/html/sp130523_1.en.html.

This medium-term approach to the inflation target, as demonstrated by Lars Svensson[2], an eminent supporter of a "flexible inflation targeting" framework, is equivalent to an optimal policy rule resulting from optimising an objective function containing simultaneously the deviation of inflation from the target and the output gap. This means that a medium-term strategy for the inflation target does not ignore what is happening with the output stabilisation or the slack in the economy. More trivially, it is clear that there are many situations, like the present one, where aiming at the inflation target by influencing aggregate demand is fully aligned with the goal of stabilising the output gap.

These two features of monetary policy in the euro area – an overriding emphasis on price stability accompanied by a publicly announced, numerical definition of the inflation objective – are also key characteristics of inflation targeting strategies. According to an influential definition, the inflation targeting approach "is characterised, as the name suggests, by the announcement of official target ranges for the inflation rate at one or more horizons, and by explicit acknowledgment that low and stable inflation is the overriding goal of monetary policy."[3]

In practice however, the debate on the monetary policy strategy of the ECB has mostly focused on its differences from the theoretical notion of "flexible inflation targeting".[4] Specifically, the ECB itself has emphasised its reliance on two pillars: a broadly-based assessment of the outlook for future price developments and a prominent role for monetary analysis. However, since the review of the ECB strategy in May 2003, the high-level similarities between our two-pillar strategy and inflation targeting are even more striking. In particular, the Governing Council clarified the definition of price stability. As a safeguard against the risks of deflation, it stressed that inflation should remain "below, but close to 2%", not just "below 2%", over the medium-term. The Governing Council also emphasised that monetary analysis mainly serves as a means of cross-checking, from a medium to long-term perspective, the short to medium-term indications coming from economic analysis. It therefore decided to discontinue the previous practice of conducting a review of the reference value for a broad monetary aggregate on an annual basis. This decision was also consistent with the ongoing deepening and broadening of the analysis, under both pillars, to go beyond any individual indicator.

The publication of the ECB staff macroeconomic projections for the euro area, available since June 2004, goes in the same direction of underscoring the similarities between our two-pillar strategy and the notion of inflation forecast targeting.

Hence, at a broad level, the ECB monetary policy strategy is not radically different from inflation targeting. Differences emerge when we look at a finer level. For example, although the review of our strategy led to a reduced emphasis on the role of the broad monetary aggregate M3, our broader monetary pillar continues playing a role. The evolution of credit and the growth rate of various monetary aggregates are for instance relevant inputs in our assessment of the risks to price stability in the medium to long-term.

All in all, the signposts guiding ECB actions have remained unchanged since the launch of the Monetary Union in 1999. They include the primary goal of price stability, as defined numerically in 1998 and clarified in 2003, and a comprehensive strategy which encompasses information from both economic and monetary analyses.

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[2] Svensson, L., (1997), "Inflation Forecast Targeting: Implementing and Monitoring Inflation Targets" European Economic Review, 41, 1111–1146. Previously published as NBER Working Paper 5797.

[3] See Bernanke, B. S. and F. S. Mishkin, (1997), "Inflation Targeting: A New Framework for Monetary Policy?, Journal of Economic Perspectives 11, pp. 97–116.

[4] See ECB (2011), "The monetary policy of the ECB", third edition, May. For a detailed review of the theoretical features of inflation targeting, see Svensson, L., (2010), "Inflation Targeting," in: Benjamin M. Friedman and Michael Woodford (ed.), Handbook of Monetary Economics, edition 1, volume 3, chapter 22, pp 1237–1302.

The precise instruments employed by the ECB to pursue its goals have, however, starkly changed after the financial crisis. We have devised many new tools, which we have defined as "non-standard measures". In describing such measures, I think it is useful to identify two broad phases, which I describe in turn.[5]

The ECB as a lender of last resort

The first phase covers the period from 2008 to 2013. Following the ECB's decision to immediately and sharply reduce interest rates in the aftermath of the Lehman bankruptcy, this phase was marked by the decision to conduct many different types of operations to refinance banks.

The immediate objective of these operations was to ease unwarranted liquidity constraints for financial institutions, arising from the malfunctioning of the money market and bank funding markets in general. Our measures ensured that solvent but illiquid institutions could continue to have access to our primary liquidity provision. This can be characterised as performing a role of lender of last resort, a traditional function of central banks since the 19th century.[6] In the face of impairments in private funding markets, the ECB stepped in and provided unlimited liquidity to all banks subject to adequate collateral.

In late 2011 the banking sector faced a new severe liquidity squeeze and two large extraordinary liquidity provision operations were conducted, amounting to €1 trillion, for a three year maturity but payable after one year.

While the immediate objective of this lender of last resort activity was to ease funding constraints and prevent sound institutions that were experiencing temporary liquidity shortages from collapsing, its ultimate objective was to pre-empt risks to price stability over the medium-term, and therefore fully in line with our mandate. If left unaddressed, funding tensions would have led to impairments in the euro area monetary policy transmission mechanism, with adverse consequences on the provision of credit, the real economy, and ultimately inflation. As history has taught us, a liquidity crisis could have triggered a wave of bankruptcy, leading to a Great Depression scenario. Thanks to our non-standard measures, this scenario did not materialise. The fall in inflation rates at the peak of the Great recession was short-lived and inflation expectations remained solidly anchored at levels that were fully consistent with our definition of price stability.

A side-effect of the non-standard measures implemented in this phase was to produce an increase in the size of the ECB balance sheet. Starting with the collapse of Lehman Brothers, the increase in financial institutions' demand for ECB liquidity led to a progressive, and sizeable, increase in bank reserves. Between 2007 and mid-2012, the ECB balance sheet more than doubled in size. This increase was not the direct objective of our non-standard measures, but only the endogenous result of liquidity needs from the banking sector. Indeed, after a fast growth, the balance sheet started to slowly decline from mid-2012 onward, as the funding situation in the banking sector improved.

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[5] This discussion does not consider the measures targeted at the sovereign bond crisis, the SMP and the OMT, which would require a more complex treatment.

[6] In the modern context, the expression "lender of last resort" is sometimes reserved to designate the provision of Emergency Liquidity Assistance" (ELA) to individual institutions and not to the system as a whole. Extraordinary provision of liquidity through regular lending operations, ELA, as theorised by Bagehot in the 19th century, is also provided against collateral but at penalising rates above the main policy interest rate. Nevertheless, the regime of full allotment of liquidity (whatever the banks demand against collateral) was made available since October 2008 at the normal interest rate and had the unique rationale of being the fulfillment of the role of lender of last resort in the broader sense of the expression.

Some commentators have interpreted the size of the balance sheet as a direct signal of future high-inflation risks. Similarly, the more recent reduction in the size of the balance sheet was interpreted by some as a cause of recent deflationary pressures.[7]

These views are wrong and based on traditional technical monetarism, are ultimately rooted in the existence of a long-run link between money and prices and on a predictable relation between the monetary base (or simply, the size of their balance sheet) and the broader monetary aggregates. When applied to the euro area experience, it must however be qualified in two important ways.

The first qualification is theoretical, but related to a property of the operational framework of the ECB. The unlimited provision of liquidity to banks was accompanied by a policy of remuneration of bank reserves at an interest rate linked to our main policy rate – the rate on our Main Refinancing Operations (MRO). This policy has been in place ever since the start of the Monetary Union and it implies that banks can smoothly adjust their desired amount of central bank liquidity without bearing a large cost, when excess liquidity is deposited at the central bank in the form of excess reserves. In the case of a monetary framework where reserves are fully remunerated, changes in the amount of bank reserves become completely endogenous. Increases in the quantity of reserves can be the result of temporary liquidity shocks and, as a result, never be followed by corresponding increases in prices.[8]

The main point though is that those predictions are not supported by the empirical evidence. The large increase in the euro area monetary base until mid-2012 has never led to an acceleration of inflation. In the same vein, the decrease of our balance sheet since mid-2012 is not responsible for the trend of low inflation that started in 2013. Even over the longer sample ranging from the beginning of 2007 to the end of 2014, this interpretation of the balance sheet suggests that today we should be concerned about strong, upward risks to inflation, because the monetary base in the euro area increased by about 120% over this period. The problem today in the euro area, however, is not too high, but rather too low inflation. Let me recall that this disconnection between the monetary base and inflation has also been observed in other countries. It is especially striking in the United States, where the monetary base increased by more than 300% between 2007 and 2014[9] and there were no signs of strong inflationary pressure.

There is no theory of inflation, even in technical monetarism, based only on the central bank monetary base increase without a corresponding development in broad monetary aggregates and this never happened. During the Great Recession, when the ECB balance sheet started its expansion, M3 growth fell dramatically to negative levels. Since 2010, M3 growth has remained very low, at average levels below 2%.

To sum up, the first phase of non-standard monetary policy was conducted in a context of well-anchored inflation expectations. Our non-standard measures over this period were aimed at addressing specific market impairments, to pre-empt risks to price stability over the medium-term. These measures produced implications on the size of the ECB balance sheet only as a by-product, as the size of the balance sheet was passively determined by the demand for liquidity emanating from the banking sector.

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[7] See for instance Orphanides, A. (2014), "European Headwind: ECB Policy and Fed Normalization". MIT Sloan Research Paper No. 5119–14.

[8] See also the discussion in Curdia, V. and M. Woodford, (2011), "The Central-Bank Balance Sheet as an Instrument of Monetary Policy," Journal of Monetary Economics, Vol. 58(1), pp 54–79, January.

[9] See also Williams, C. J., (2012), "Monetary Policy, Money and Inflation", Federal Reserve Bank of San Francisco, Economic Letter, 9 July.

The more recent phase: more active steering of the ECB balance sheet

The second phase of our non-standard measures started in 2013 and corresponds to the period during which inflation started to fall significantly below 2%. HICP inflation hovered below 1% in the second half of 2013 and kept drifting down over the entire 2014, reaching a slightly negative level, –0.2%, last December. These developments were accompanied by a significant decline in various measures of long-term inflation expectations.

This situation is different from the one faced by the Governing Council in previous years. One way to characterise the difference is in terms of the nature of the shocks that are likely to have determined economic outcomes. Specifically, the Great Recession and the years before 2013 were characterised by a large increase in financial spreads and relatively stable inflation. This suggests that financial disruptions were the root cause of real economic developments. Recent academic results for the United States have confirmed the realism of this hypothesis from a quantitative perspective.[10] In contrast, current downward pressures on both output and inflation are not accompanied by an increase in financial market spreads. For instance, the spread between the three-month EURIBOR and three-month euro overnight interest swap (OIS), identified as a key indicator of money market tensions, is currently hovering around levels last seen during the pre-crisis period. Right now, with more favourable yields and spreads the situation suggests that current developments of low inflation, high unemployment and significant economic slack, are more likely to be driven by a negative aggregate demand shock. There is a general lack of demand in the euro area and at the present pace the negative output gap would last until 2019, with a corresponding high unemployment that is fostering socio-political tensions.

Maintaining price stability in the face of insufficient aggregate demand and downward inflationary pressures requires a more expansionary monetary policy stance that, by reducing the economic slack, will contribute to improve price stability in the medium term.

In response to these developments, the Governing Council of the ECB introduced, in July 2013, a policy of forward guidance, indicating its intention to keep interest rates at prevailing or lower levels "for an extended period of time".[11] In June 2014, the Governing Council also introduced two purchase programmes, for asset backed securities (ABS) and covered bonds, and a programme to provide longer-term funding to banks for new loans, which we refer to as targeted long-term refinancing operations (TLTRO).

The negative developments after the preparation (in November) of the December staff projections and the relatively weak use by the banks of the TLTRO, led the ECB to enlarge the Asset Purchase Programme (APP) by including sovereigns bonds and by deciding to calibrate a monthly amount of €60 billion purchases of the three types of assets. This amount of purchases is "intended to be carried out until end-September 2016 and will in any case be conducted until we see a sustained adjustment in the path of inflation which is consistent with our aim of achieving inflation rates below, but close to, 2% over the medium-term".[12]

The switch to a more active steering of the ECB balance sheet is the distinguishing feature of the new phase of our non-standard measures. It is important to underline the nature of this new phase. We are not thinking of increasing our monetary base, expecting that through a working and stable multiplier the monetary aggregates will increase correspondingly thus

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[10] Christiano, L., M. Eichenbaum and M. Trabandt, (2015), "Understanding the Great Recession", American Economic Journal: Macroeconomics, Vol. 7 No. 1 (January 2015).

[11] For a detailed assessment of the effects of forward guidance in the euro area, see Coenen, G. and A. Warne, (2014), "Risks to Price Stability, the Zero Lower Bound, and Forward Guidance: A Real-Time Assessment," International Journal of Central Banking, vol. 10(2), pp 7–54, June.

[12] Introductory statement to the press conference by Mario Draghi, President of the ECB, Frankfurt am Main, 22 January 2015.

achieving an upward movement in inflation, by whatever ways the traditional quantitative approach conceived. We decided on a Large Scale Asset Purchase (LSAP) mostly to be able to use several new channels of transmission of an expansionary monetary policy. The increase of the monetary base and the total balance sheet is a consequence of this new type of monetary stimulus.

By purchasing this type of long-maturity assets, we intervene directly on medium-term rates, we extract duration from the market, we provide liquidity directly to non-bank entities, we open space in banks' balance sheets for increasing credit. Also, by reducing persistent market spreads, in ABSs for instance, we encourage banks to increase their supply. As new money origination can only be achieved through the creation of more loans, this measure has the potential to increase the supply of credit and reduce the price at which it is granted.

Another important channel through which we expect asset purchases to work in the euro area is the broad portfolio balance channel. If different assets are imperfect substitutes, interventions by the central bank that affect the supply of various assets available to private investors could influence the prices of many other assets, including investment grade bonds, equities, real estate or foreign assets with consequences for the exchange rate.[13] Higher valuation would also facilitate the process of balance sheet repair that is ongoing in the euro area, and more generally contribute to support credit growth. We see that the various effects also impact the credit channel.

Finally, asset purchases would operate through a signalling effect, i.e. by affecting expectations of future inflation and the future likely path of the key ECB rates. In the United States, there is for instance evidence suggesting that quantitative easing contributed to increase inflation expectations, and therefore that asset purchases by the Fed reduced real interest rates.[14] Lower real rates would stimulate aggregate consumption and investment, and ultimately contribute to a faster return of the euro area inflation rate to levels consistent with our definition of price stability.

The adoption of a Large Scale Asset Purchase (LSAP) programme

The ECB is responsible for price stability which is always effectively controlled by monetary policy on a medium-term basis. Having reached the zero lower bound of our policy rates, we had the duty to try all legal instruments to fulfil our mandate. In the present case, it implied exploring new channels of transmission of monetary policy that have worked in other countries like the U.K. and the U.S.

We were, of course, aware of several objections and concerns that have been used against adopting a LSAP Programme. One concern at this point in time relates to the already very low level of government bond yields. There is certainly limited scope for further yield reductions through a government bonds' purchase programme. Nevertheless, the transmission channels of the programme go well beyond the direct effect on the price and yield of the purchased assets as I just explained. Besides the points already mentioned, government bond purchases at this point in time would firm markets' expectations that the monetary policy stance of the ECB will remain expansionary for an extended period, even if

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[13] For a detailed review of the literature, see for instance Bernanke, B., (2012), "Monetary Policy since the Onset of the Crisis", Reserve Bank of Kansas City Economic Symposium, Jackson Hole, 31 August.

[14] See for instance Krishnamurthy, A. and A. Vissing-Jorgensen, (2011), "The Effects of Quantitative Easing on Interest Rates: Channels and Implications for Policy," Brookings Papers on Economic Activity, The Brookings Institution, vol. 43(2 (Fall)), pp 215–287. For a recent analysis about the ECB, see Boeckx, J., M. Dossche and G. Peersman, (2014), "Effectiveness and transmission of the ECB's balance sheet policies" National Bank of Belgium Working Paper 275, December; See also Rogers, J. H., C. Scotti and J. H. Wright, (2014), "Evaluating asset-market effects of unconventional monetary policy", Federal Reserve International Finance Discussion Paper 1101; Butt, N., R. Churm, M. McMahon, A. Morotz and J. Schanz, "QE and the bank lending channel in the UK", Bank of England Working Paper 511, September.

interest rates started rising in other monetary areas. While current expectations are already consistent with persistently low levels of key ECB interest rates, government bond purchases should produce further reductions in yields by dampening their volatility in reaction to news and therefore their risk premia.

We should also not forget that the recent reduction in government bond yields has been the result of increasingly widespread market expectations of a forthcoming ECB programme to purchase such bonds. The announcement of such a programme would therefore be effective by merely validating those expectations and thus preserving the low yield levels.

A second concern is that purchases of government bonds may have adverse unintended consequences. Specifically, they could reduce governments' incentives to undertake the necessary structural reforms or fiscal adjustments in countries where they are needed.

All policies imply trade-offs and an independent central bank, responsible for price stability in an acute situation, cannot be condemned to inaction by arguments related to the amount of pressure that it may exerte or not on governments regarding other policies for which they are responsible. There are other instruments to achieve appropriate fiscal discipline that are in the hands of the EU Commission and Member States.

Concerns regarding possible future inflation resulting from the increase in the monetary base have been less prominent this time. These traditional views have been disproved by the facts since 2007 and, in any case, the central banks have instruments to absorb the effects of the monetary base, if and when inflation would threaten to become a risk again.

Then, there is the argument that in the present environment of low interest rates, a LSAP Programme can reinforce the trend of search for yield and lead to instability in asset markets. The question is that monetary policy cannot tackle two objectives at the same time. Our primary mandate as stated in the EU Treaty is price stability in the market of goods and services and not the market for assets. What this implies is that central banks must be given a second set of instruments of a regulatory nature under the umbrella of what is now called macro-prudential policy. When the business cycle diverges from the financial cycle, as is the case now, bold and efficient macro-prudential policies are essential, even if their more intrusive nature raises doctrinal objections in certain quarters. Advanced economies have no alternative in the present environment of secular stagnation, because otherwise the reluctance to tame excessive leverage of finance can lead to future crisis.

Finally, there is the misguided argument that the euro area problem is almost exclusively a supply side question. The supply side policies are indeed absolutely essential to increase long-term potential growth by fostering total factor productivity, especially now when working age population is already declining. However, they take time to produce effects and there is a short-term horizon of two to three years where the question is mostly a situation of lack of aggregate demand and Europe needs to increase growth now in order to avoid vicious circles related with the so-called debt-trap.

Short-term stimulus to demand also helps the long-term and the supply side. In reality, only in our textbooks is there a pedagogical but artificial separation between the short-term and the long-term or between the supply and the demand side. The nature of mathematical economic models enhances this pseudo-difference as they feed the confusion between logical time (long-term in the models only means a logical interval until the final equilibrium) and the chronological time that we face in policy-making.

In the historical chronological time, the long-term is no more than a sequence of short-terms. In the case addressed, the main links between the short and the long-term are investment and hysteresis in the capital and labour markets. As we all know, investment has collapsed since 2007 and in the euro area is still almost 20% below what it was then. This has decreased the long-term potential growth rate as the capital became less efficient (hysteresis effect) and has not grown sufficiently. Hysteresis in the labour market means that

unemployed human capital loses quality, is discouraged and abandons the labour supply so that short-term prolonged high unemployment affects the long-term.

In the present situation, monetary policy, by aiming at inflation, stimulates aggregate demand and, by doing so, positively affects medium-term growth, if indeed investment increases and the output and employment gaps are reduced.

To conclude, I should refer to an important dimension of policy decision-making which is the cost of inaction. At the moment, default risk in the sovereign debt market is, in almost all countries, a result of the prolonged recession, rather than the outcome of current irresponsible fiscal actions. From this perspective, a sovereign bond purchase programme would foster growth and thus be instrumental in making any further consolidation of government finances possible.

We have been encouraged by the initial reaction to our decisions: the portfolio rebalancing was reflected in increases in the price of equities and bonds and on the exchange rate. A word of caution is however necessary about the measurement of the effectiveness of our decision. Indeed, it is not correct to look only for what happens to financial and real variables after the date of our decision. Firstly, because the measures have been partially anticipated by the markets, so that the effects started even before our decision was taken; secondly because it is necessary to compare with the counterfactual of what could have happened if the measures had not been adopted. As we are not in the domain of natural experimental science, the counterfactual has to be model-based with all the caveats of such endeavour.

Concerning inflation itself, in the short–term, the impact of oil price declines is likely to prevail. Nevertheless, monetary policy can indeed control inflation on its own, on a medium-term basis, provided the proper instruments are used with persistence and determination. This is a basic tenet of theory that ultimately is the argument that justifies the independence of central banks. Other policies can indeed help and should help but in the end, monetary policy alone can do it. Inflation is the main remit of central banks and a responsibility that no independent central bank can disregard. That is why, we have repeated several times in the past few months that "Should it become necessary to further address risks of too prolonged a period of low inflation, the Governing Council is unanimous in its commitment to using additional unconventional instruments within its mandate".

Thank you for your attention.