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# **THE ECONOMIC CONSEQUENCES OF LOW INTEREST RATES**

Public lecture by

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Ladies and Gentlemen<sup>1</sup>,

It is a pleasure to be here at the ICMB.

In recent years, monetary policy interest rates have been reduced to exceptionally low levels. The main reason for maintaining highly accommodative monetary conditions has been to avert the risk of an economic depression and to counter deflationary pressures. At the same time, given the financial disruptions which led to what is now widely called “the Great Recession”, the reduction of interest rates has helped to offset the excessive increase in borrowing costs caused by the widening of financial spreads. From this perspective, monetary policy actions have favoured borrowers.

Over the same period, returns on safe financial assets have been very depressed. This has implied that on the one hand, savers in search of safe investment opportunities have found themselves having to accept extremely low rates of return – possibly negative when corrected for inflation – while on the other hand low rates have boosted asset prices and, hence, have favoured households and firms with a positive net wealth. Yet, given the length of the economic slowdown and the persistence of the low interest rate environment, the media on both sides of the Atlantic have been reporting on the difficult investment climate for savers.<sup>2</sup>

The correlation between these two facts – low monetary policy interest rates and low returns on safe financial assets – may suggest a causal explanation. After all, low nominal yields on safe, long-term bonds are the result of current and expected low interest rates as well as of a term premium. It is tempting to conclude that, facing a choice between helping borrowers and supporting lenders, central banks have chosen the first group. The reduction of monetary policy interest rates would thus be seen as aiming to reduce borrowing costs for consumers and firms. Savers would simply have to suffer the collateral damage from a policy aimed at other objectives.

In my remarks today, I wish to argue that this conclusion is unwarranted.

Specifically, I will maintain that persistently low asset returns or, more generally, poor investment opportunities are simply one of the many manifestations of a deep recession. In such an environment, looser monetary policy conditions are not the *result* of a desire to favour borrowers, but rather the necessary *response* to bring the economy back on to a sustainable growth path in an environment of price stability. Far from helping savers, higher monetary policy interest rates would only have depressed the economy further, delayed the recovery and contributed to downside risks to price stability. Asset returns would have been dampened for longer and savers would have suffered for longer.

### **Policy rates at historically low levels**

Let me start by summarising the facts.

The key ECB policy rates are at a historical low. After being cut to 1% in May 2009, the interest rate on the main refinancing operation (MRO) has remained at low levels over the past four years. It currently stands at 50 basis points. The deposit facility rate is at zero and the marginal lending facility rate is at 100 basis points, which implies that our interest rate corridor is also unprecedentedly narrow.

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<sup>1</sup> I wish to thank Giovanni Lombardo and Oreste Tristani for their contributions to these remarks. I remain solely responsible for the opinions contained herein.

<sup>2</sup> See, among others, Süddeutsche Zeitung, “Niedrigzinspolitik der EZB: Zinstief kostet deutsche Sparer Milliarden”, 3 August 2013; New York Times, “As Low Rates Depress Savers, Governments Reap Benefits”, 10 September 2012.

Even if the MRO rate stands at 50 basis points, the effective cost of funds for some banks has fallen even further. Banks in countries under stress have faced higher borrowing costs, on both retail and wholesale sources of funding, and in some cases have become altogether unable to raise funds in the interbank market. They have therefore had to rely on the ECB for their liquidity needs. The ensuing increase in the overall amount of liquidity available in the system has led to a fall in the overnight rate on unsecured borrowing— the refinancing rate for banks perceived as safe. The average overnight rate, or EONIA rate, has hovered around levels very close to the rate on the deposit facility over the past four years. It currently stands below 10 basis points.

At the same time, returns on long-term safe assets have never been so low since the creation of Economic and Monetary Union. For example, ten-year German government bonds pay a nominal interest rate of just above 170 basis points. This is partly the result of a slight downward trend in euro area safe asset returns over the past decade, and mostly the consequence of the worsening sovereign debt crisis in 2011, when risk-free real rates were pushed into negative territory as investors adjusted their portfolios towards the few assets which were perceived as safe. Since long-term euro area inflation expectations are well anchored at just below 2%, consistent with our definition of price stability, these low nominal rates translate into expected real returns on safe assets that are slightly negative.

From the perspective of a saver, these returns are obviously very low, compared with average historical conditions. Over the very long run, real rates are determined by investors' time preference rate and expectations about the trend growth rate of the economy. At more intermediate maturities, however, returns on safe assets are affected by current and expected future monetary policy conditions, with the addition of term premia mainly reflecting the maturity of the assets and the expected volatility of inflation. Expectations of persistently low short-term policy rates will tend to lower yields at medium-term maturities. As long as inflation expectations remain well anchored, real medium- to long-term yields will also tend to edge down. Monetary policy is therefore contributing to keeping real yields at low levels along a good part of the yield curve.

### **Real interest rates during a prolonged economic downturn**

But are interest rates currently excessive low? To answer this question, one needs to define a benchmark. In practice, this is a very difficult task, both conceptually and in terms of quantitative measurement. Indeed, the overall assessment of the risks to price stability in all central banks can be understood as a way of operationalizing this task, through extensive analytical information and a good deal of judgement.

Theory, however, offers some guidance on how to think of a benchmark for the neutral level of interest rates within simple modelling frameworks. This is a useful starting point for my discussion.

The natural starting point for an economist is the Wicksellian natural rate of interest: the "certain rate of interest on loans which is neutral in respect to commodity prices, and tends neither to raise nor to lower them".<sup>3</sup> A more precise definition of the natural rate of interest has been provided in the context of dynamic economic models.<sup>4</sup> In this context, the natural rate of interest is the short-term real interest rate which would prevail in an ideal "real economy", where nominal variables play no role. In such an economy, monetary policy would have no reason to exist. All economic variables would be determined independently of the actions of the central bank.

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<sup>3</sup> See K. Wicksell, *Interest and Prices*, Royal Economic Society, 1936.

<sup>4</sup> See M. Woodford, *Interest and Prices*, Princeton University Press, 2003.

In this ideal world, a prolonged economic contraction would be accompanied by an initial fall, and then by a gradual recovery of the natural rate of interest. The level and the persistence of the natural rate of interest are linked to the pace of the economic recovery. Various economic forces would contribute to this outcome. On the one hand, the contraction would be associated with a persistent fall in the profitability of new investment. Expected returns on all investment opportunities would therefore tend to remain low. On the other hand, uncertainty would also tend to increase during the recession. As a result, precautionary saving would also increase, exerting further downward pressure on the natural interest rate.<sup>5</sup> Investment in new projects would also be discouraged in this situation of greater uncertainty.<sup>6</sup> All in all, the demand for new borrowing in the economy would fall and, other things being equal, the excess supply of funds would exert further downward pressure on the real interest rate.

More specifically, compared with the rates of return which can be earned under normal conditions, the low interest rate would be disadvantageous for savers and lenders, and relatively more favourable for borrowers, also in this ideal economy. These conditions, however, would not be the result of a special monetary policy objective favouring one economic group over the other, but rather part of the automatic rebalancing of the economy after the recession. Of course, relative advantages would be reversed during economic expansions, when real interest rates would become higher, to the relative benefit of savers as opposed to borrowers. On average, over many expansions and recessions, lenders and borrowers would be treated symmetrically.

Let me emphasise that the scenario I just described is related to an ideal economy.

Nevertheless, the described scenario mimics quite well actual developments since the Great Recession. From a qualitative perspective, therefore, a low-interest-rate environment is fully warranted in the real world as well. Had we at the ECB not pursued a policy of low interest rates, we would have impaired the fragile recovery of the European economy and delayed the return of real rates to levels motivated by genuine, sustainable growth.

It remains unclear, though, whether actual interest rates in the real world are excessively low from a quantitative perspective. How can we assess whether this is the case?

Once again, the theoretical natural rate benchmark can help to answer this question. An economy in which nominal variables play no role is in fact equivalent to an economy in which inflation is always constant at zero. The natural rate benchmark therefore indicates the ideal interest rate setting for a central bank aiming to maintain price stability in a monetary economy. Taking a Wicksellian perspective, policy interest rates below the natural level would produce inflationary pressures, while higher rates would push the economy into deflation.

It follows that a simple gauge of whether the level of actual policy interest rates is consistent with an ideal natural level, or instead excessively high or low, is to look at inflation expectations. The latest ECB Staff macroeconomic projections for the euro area foresee a rate of annual inflation in 2014 of only 1.3%, down from 1.5% in 2013 – both rates somewhat below our own definition of price stability, which is below, but close to, 2%. Inflation projections therefore do not support the hypothesis that ECB policy interest rates are excessively low.

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<sup>5</sup> For a discussion of the determinants of saving during the Great Recession, see Mody, Sandri and Ohnsorge (2012) "Precautionary savings in the Great Recession", Voxeu, <http://www.voxeu.org/article/precautionary-savings-great-recession>.

<sup>6</sup> See N. Bloom, The Impact of Uncertainty Shocks, *Econometrica*, Vol. 77, No. 3 (May, 2009), 623–685

If anything, our staff estimates that real output in the euro area will contract by 0.4% in 2013, and return to a timid 1% growth in 2014, justify an easing bias to future monetary policy decisions.

Such a bias is an integral part of the design of the recent and unanimous Governing Council decision to provide forward guidance. While our MRO rate is still strictly above its zero lower bound, giving us some scope for further reductions if deemed appropriate in the light of incoming economic and monetary data, our forward guidance is primarily intended to reduce uncertainty about future policy decisions. This act of policy transparency strengthens the effectiveness of our accommodative policy stance by exerting downward pressure on medium-term interest rate expectations.<sup>7</sup>

### **Heterogeneity across countries**

I have so far argued that ECB policy interest rates are appropriate for the euro area economy as a whole, and not specifically geared to improving funding conditions for borrowers. In particular, ECB policy decisions over the past five years were dictated by the inflation outlook for the euro area, in line with past historical regularities in our interest rate settings.<sup>8</sup>

The euro area average, however, is neither representative of the conditions prevailing in all Member States, nor of the distribution of funding costs across borrowers within countries. Especially since the outbreak of the sovereign debt crisis, borrowing costs for private lenders have become increasingly heterogeneous across countries and sectors. Profitable firms located in stressed euro area economies have faced increasing funding costs as the sovereign debt crisis has escalated, with small and medium-sized firms hit harder. Only in some euro area countries have firms been able to take full advantage of the decline in key ECB interest rates. At the ECB, we have referred to this situation as “financial fragmentation” – that is, a type of financial disruption characterised by fault lines shaped by national borders, with ramifications within national borders, capital repatriation and sharp increases in the home bias in all market segments. Financial fragmentation results in renationalisation of savings, which in turn prevents euro area households and companies from reaping the full benefits of the single market for goods and services.

For example, a consequence of this fragmentation is that the average cost of borrowing for non-financial corporations in Germany in the first quarter of 2013 was slightly more than 2.5% per year, while it was about 4% in Italy. This gap also reflects the limited pass-through of our policy decisions in stressed countries: the 75 basis point reduction in MRO between the third quarter of 2011 and the first quarter of 2013 brought about a 100 basis point reduction in the average cost of borrowing for non-financial corporations in Germany but only a 50 basis point reduction in Italy.<sup>9</sup>

Within countries, our interest rate cuts have also benefited different firms to different extents, increasing the heterogeneity of borrowing costs. For example, in Germany since January 2012 the interest rate on new loans to non-financial corporations (over 5 years' duration) has dropped by about 81 basis points for smaller loans (up to €1 million) and by about 56 basis

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<sup>7</sup> See also P. Praet, “Forward guidance and the ECB”, Vox, 6 August 2013; <http://www.voxeu.org/article/forward-guidance-and-ecb>; and B. Cœuré, “The usefulness of forward guidance”, speech given before the Money Marketeers Club of New York, New York, 26 September 2013; [https://www.ecb.europa.eu/press/key/date/2013/html/sp130926\\_1.en.html](https://www.ecb.europa.eu/press/key/date/2013/html/sp130926_1.en.html).

<sup>8</sup> This statement can be corroborated by looking at the empirical relationship between key ECB interest rates and developments in inflation and other indicators of broad macroeconomic conditions, the so called “Taylor rules”, named after the economist John Taylor, who first analysed it in the early 1990s.

<sup>9</sup> See “Assessing the retail bank interest rate pass-through in the euro area at times of financial fragmentation” Monthly Bulletin, August 2013, European Central Bank.

points for larger loans (down to 280 and 283 basis points respectively). For Italy, the reductions amount to about 29 basis points and 140 basis points respectively (down to 577 and 353 basis points respectively). So while larger firms in stressed countries are experiencing improvements in their financing costs, smaller and medium-sized firms in these countries are still lagging behind.

This picture of heterogeneity within and across countries can be linked to the difficulties encountered by banks during the financial crisis. The dramatic fall in asset values experienced during the crisis has worsened the balance sheet of financial intermediaries, leading to a sharp contraction in credit in a number of euro area countries. The ensuing deflationary pressure has further exacerbated the balance sheet contraction through the Fisher effect on the real value of outstanding liabilities of banks.<sup>10</sup>

There is a two-way relationship between financial fragmentation and the heterogeneity in economic fundamentals across the euro area.

We have observed sharp cross-country dispersion in the cumulated changes in real GDP since the start of the crisis. In 2012 the level of real GDP was around 20% lower than in 2007 in the country most affected, while it was around 10% higher in the country least affected by the crisis. European labour markets offer a similar, well-known picture. The diverging distribution of economic and financial conditions within the euro area has mainly been exacerbated by the ailing fiscal conditions at national level. In particular, banks' funding costs have remained persistently high in some countries despite cuts in the ECB's policy rate, in part reflecting fundamental- as well as non-fundamental risks associated with large sovereign debt. In stressed countries, the limited and costly availability of credit has further hampered hiring and investment, while in the other countries, borrowing conditions have been favourable, making the fault line even deeper.

Lenders in stressed countries as well as savers in all countries have suffered from the consequences of financial fragmentation. The ensuing flight to safety has led to soaring yields and lending rates in stressed countries. But the resulting excess demand for safe assets has also squeezed yields in core countries. *Therefore, financial fragmentation has negatively affected both borrowers in stressed peripheral countries and savers in the core euro area.*

Furthermore, a key ingredient in conducting a single monetary policy for several countries is capital mobility. Through capital mobility, real *ex ante* returns, expressed in terms of the same consumption units, are equalised across countries. When this condition holds, there is only one reference Wicksellian natural rate against which we can assess the neutrality of our policy stance. When financial markets are fragmented, the efficient allocation of capital across countries is impaired and monetary policy ceases to have a single reference rate to pursue: the natural rate itself is fragmented.

In this light, the ECB, acting within its mandate, has had to re-establish the allocative efficiency of financial markets. Consequently, we have implemented a number of non-standard monetary policy measures specifically designed to offset financial impairments. Such measures have had their effects, mainly by boosting the ability of the financial intermediation sector to provide funds to households and firms. The revitalisation of local financial conditions has significantly reduced euro-area financial fragmentation, thus repairing the transmission channel of standard monetary policy. By lowering short-term interest rates and signalling, through forward guidance, our willingness to keep rates low for an extended period of time, we are aiming to reactivate the real economy and to avoid the deflationary pressures that can undermine the fragile recovery of the financial intermediaries.

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<sup>10</sup> See M. Brunnermeier and Y. Sannikov, "The I Theory of Money", unpublished working paper, Princeton University (2011).

In this respect, it has been argued that reducing fragmentation can imply a redistribution of risk in times of crisis, and further, that it is the redistribution of risks that makes monetary policy effective.<sup>11</sup> For example, by relaxing collateral requirements for their lending programmes, central banks can insure against a tail event in which the borrower and the collateral fail to cover the borrowed amount. The main insight here is that the redistribution of risk is not a zero-sum game, but that the overall risk in the economy, in our case in the monetary union, can be reduced. I agree with this view, but I would like to stress that the redistribution of risks is only a means to an end – achieving price stability. And any such insurance provided by the central bank should come with appropriate safeguards to mitigate moral hazard, or we would be trading short term stability against long term instability.

In terms of impact on our balance sheet, our main non-standard measure is represented by the unlimited provision of liquidity at maturities up to three years and the enlargement of the set of eligible collateral within our risk control framework. Banks' recourse to ECB's unlimited provision of liquidity has been particularly intense in countries under pressure in sovereign bond markets. This measure has helped to ease bank funding constraints. In countries facing stress in sovereign bond markets, this has made it possible for banks to ease lending standards and foster better credit conditions for borrowers.

In parallel to the unlimited provision of liquidity to banks, we have designed our Outright Monetary Transactions (OMT) programme to rule out self-fulfilling, deflationary equilibria associated with unjustified fears of currency redenomination. The OMT programme has successfully contributed to the normalisation of Europe's financial market and largely restored the attractiveness of a broader set of saving opportunities. Thanks to the introduction of the OMT, the strong divergence in funding costs across countries has been to some extent reduced. The reduction in sovereign risk premia towards levels consistent with economic fundamentals can generate positive dynamics; first and foremost by improving the balance sheet of sovereign bondholders (in particular banks). These bondholders, in turn, will see their creditworthiness increase and, at the same time, be able to invest in riskier, yet more profitable, projects. Therefore, while our non-standard measures were designed for the euro area as a whole, their use has varied among counterparties and across countries. In this regard, our non-standard measures have helped restore the distributional neutrality of our monetary policy by mitigating distortions in certain asset classes or sectors. Their impact has prevented extreme economic outcomes for certain sectors and countries. However, permitting cross-country divergences to linger bears the risk of turning temporary wounds into permanent scars, thus undermining the effectiveness of a single monetary policy for our monetary union in the long run.

That said, there is only so much that the central bank can do. Many sources of financial impairment have a structural nature, having to do with lack of convergence across economies, exposure of banks to sovereign credit risk and vice-versa, and regulatory and supervisory ring fencing. The ECB cannot support the solvency of profligate sovereigns, nor can it build up the capital of banks that have extended unprofitable loans, or the own funds of companies whose business models have become outdated. This is about generating and allocating of capital in the economy, a task that does not belong to the central bank remit and which ultimately determines the natural rate of interest and the distribution of wealth between borrowers and savers.

## **Conclusions**

Let me now conclude.

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<sup>11</sup> See M. Brunnermeier, and Y. Sannikov, 2012. "Redistributive Monetary Policy", paper prepared for the 2012 Jackson Hole Symposium, Princeton University.

Five years of financial crisis and economic contraction have had far reaching implications for the euro area.

First, the deep recession in the euro area has been manifested in low asset returns or, more generally, poor investment opportunities. In such an environment, looser monetary policy conditions are the *necessary response* to bring the economy back on to a sustainable growth path in an environment of price stability. Far from helping savers, higher monetary policy interest rates would only have depressed the economy further, delayed the recovery and contributed to downside risks to price stability. Additionally, asset returns would have been dampened for longer with negative implications to the net wealth of savers.

Second, borrowers in stressed countries as well as savers in all countries have suffered from the consequences of financial fragmentation. The ensuing flight to safety has led to (i) soaring yields and lending rates in stressed peripheral countries, and (ii) squeezed yields in core countries. *As a result, financial fragmentation has negatively affected both borrowers in stressed peripheral countries and lenders in the core euro area.* Therefore, non-standard monetary policies, which aim at improving the transmission of monetary policy by reducing financial fragmentations in the euro area, have mitigated the negative implications of financial fragmentation on both borrowers and lenders.

Third, the economic contraction has been accompanied by rising unemployment and lower incomes. Undoubtedly, the pain has not been evenly shared. The distribution of income has widened in the euro area as well as in other OECD countries, with poorer households and young people being hit harder.<sup>12</sup>

However, it is not the mandate of the ECB, or of any modern central bank, to address rising inequalities or to steer the distribution of income, whether between rich and poor or between lenders and borrowers. Our mandate is to preserve price stability. This is our contribution to the efficient working of our market economy. In the current phase of the European business cycle, characterised by disruptions and fragmentation in euro area financial markets, our mandate is best served by tackling the malfunctioning of markets and ensuring a homogeneous and smooth transmission of monetary policy across sectors and countries. Any re-distributional effect of our policies must be read as a means to an end that is price stability.<sup>13</sup> These effects are bound to be temporary, as such are the real effects of monetary policy interventions. In the long run, real rates are determined by natural economic forces, by productivity-enhancing public intervention and by the quality of our market institutions that are beyond the reach of monetary authorities.

Looking forward, the welfare of euro area savers will depend on efforts to reduce financial fragmentation by building a proper banking union, with its supervision and resolution arms, by strengthening euro area governance and by enforcing rules that ensure that member countries run sustainable policies. It will depend on efforts to lift productivity by investing in technologies and skills – more than on any decision the ECB has taken and will take in the future.

Thank you for your attention.

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<sup>12</sup> See OECD, 2013. “Crisis squeezes income and puts pressure on inequality and poverty”, New Results from the OECD Income Distribution Database, 15 May 2013.

<sup>13</sup> See my speech: “Monetary policy in a fragmented world” delivered at the 41st Economics Conference of the Oesterreichische Nationalbank, Vienna, 10 June 2013, <http://www.ecb.europa.eu/press/key/date/2013/html/sp130610.en.html>