

Low long-term rates: bond bubble or symptom of secular stagnation?

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Executive Summary

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- Yields on European sovereign bonds have reached historically low levels in 2016, to between 0 percent and 1.5 percent in most cases, compared to above 10 percent at the beginning of the 1980s. This secular decline in long-term sovereign yields is not limited to the euro area, and can also be observed in the United States, the United Kingdom and Japan.
- The decline in yields over the last 30 years and the most recent fall are the result of various factors: reduced inflation, low risk premia in European countries and, most importantly, the fall in the real (ie inflation adjusted) interest rate.
- The decrease in the real rate is itself driven mainly by the secular decline of the 'neutral' rate – the short-term equilibrium rate between demand for and supply of funds compatible with full employment and price stability.
- Although there is uncertainty around the results, there is some evidence of tim

in the neutral rate, with a downward trend since the 1980s. This suggests that the decline in real rates of the last 10 years is not the result of an overly accommodating monetary policy but of a combination of structural and cyclical factors.

- The determinants of the fall in the neutral rate are all the factors affecting the supply and demand for funds. These include demographics, lower productivity growth, lower investment, rising inequality and shifting preferences for less risky assets.
- The disappointing recoveries in advanced countries have raised the possibility that we might have entered a period of secular stagnation. Understanding the mechanism at work behind this phenomenon could thus be crucial to understand why rates are currently so low.
- The main driver of secular stagnation appears to be the structural mismatch between the high proclivity of people to save and the low demand for those savings to be translated into risky productive investment, leading to a lower and possibly negative real interest rate to clear the market for funds.
- Although secular stagnation is an appealing hypothesis that provides an explanation for many of the economic features of the last 30 years, including the decline in real rates, it is too early to settle the debate. Nevertheless, even if secular stagnation remains a hypothesis, most of the structural features of secular stagnation are already weighing on growth and on interest rates.
- Low rates are the symptoms of our diseases, not their cause. It is therefore crucial to tackle the structural causes behind the fall in long-term rates, but also to find solutions for the harmful consequences that lower equilibrium rates could have for the conduct of monetary policy.

Introduction

Yields on European sovereign bonds have reached historically low levels in 2016: German 10-year government bond yields stand at 0.03 percent, French at 0.25 percent, and Italian and Spanish yields are respectively at 1.37 percent and 1.07 percent. All were well above 10 percent at the beginning of the 1980s (Figure 1a). This secular decline in long-term sovereign yields is not limited to the euro area; it is also observed in the United States, the United Kingdom, Japan and Switzerland. Short-term policy rates in the euro area and elsewhere are also at historically low levels and far from their long-term average (Figure 1b). Given that short-term rates are constrained by the zero lower bound, this has resulted in a flattening of the whole yield curve.

Figure 1: European interest rates

Source: Bruegel based on OECD Statistics, Bloomberg. Note: DF and MRO rates refer respectively to the European Central Bank's Deposit Facility and Main Refinancing Operations rates. The German Discount Rate is the equivalent of today's ECB Marginal Lending Rate.

It is therefore legitimate to ask if the current levels of long-term yields on European sovereign bonds are justified, or if there is some kind of European bond market bubble fuelled by ECB monetary policy. Unwarranted unconventional monetary policies that keep rates artificially low could distort the allocation of resources and produce harmful side effects. There is concern about a potential increase in financial stability risks because investors are searching for yield and because the profits of insurers, pension funds and banks are being strongly squeezed. There is also a fear that inequality could increase because of the rise in prices of assets that are held by only a small fraction of the population¹.

Of course, a bubble is generally difficult to identify in real time and is more easily characterised *ex post* by the rapid escalation in an asset price.

What are the determinants of long-term rates?

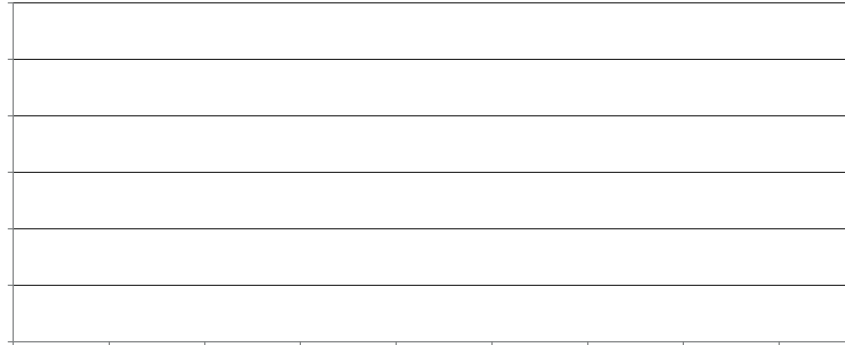
Nominal rates can be primarily decomposed into real (ie inflation-adjusted) safe rates, term premia including inflation expectations, and risk premia (to compensate investors for various risks, such as default and liquidity). Movements in long-term yields can be explained by changes in these three main components. Let's take a look at them in turn.

First, a big part of the story behind the decline of nominal long-term rates in the last 35 years has been the fall in inflation and inflation expectations. On average, inflation in the euro area fell from more than 15 percent per year at the beginning of the 1980s to around 2 percent at the end of the 1990s (Figure 2). This is mainly a consequence of the adoption by the central banks of advanced economies of credible inflation targeting regimes (with a clear mandate of price stability defined by low and stable inflation, generally around 2 percent) after the surge in inflation at the end of the 1970s and the beginning of the 1980s. In that sense, central banks have had a clear impact on long-term rates by anchoring inflation expectations around their targets.

In addition, Figure 2 also shows a more recent fall both in headline inflation, which has been trending around 0 percent for the past two years (Panel A), and in market-based inflation expectations to well below the ECB's 2 percent target.

in a quick fall in country risk premia across the euro area. However, the spreads did not return to the negligible pre-crisis levels because market participants realised that credit risks still differed in the different countries of the euro area, despite the monetary union (see again Figures 1 and 3).

Figure 3: 10y sovereign credit default swap in the euro area (basis points)



Source: Bruegel based on Eikon Reuters. Note: Credit default swaps (CDS) are financial agreements under which the seller will compensate the buyer in the event of a loan default or other credit event.

Finally, while inflation might have been the most important factor behind the downward trend in nominal rates from 1980 to the end of the 1990s, most of the decline over the last 15 years is a result of the global fall in long-term real safe rates³ (Figure 4). In turn, real long-term rates are mainly determined by the expected path of short-term rates over the life of the asset plus a small additional term premium for holding long-term debt instead of rolling over short-term debt across the entire period.

Figure 4: Long-term 'world' real interest rate (%)

Most of the decline in nominal rates over the last 15 years is a result of the global fall in long-term real safe rates.

Source: Bruegel based on Bloomberg. Note: The 'world' real interest rate is based on data for G7 countries' real 10-year yields (except Italy) computed by Bloomberg (as the difference between the generic 10-year yield and core CPI) and weighted according to the real average GDP per country over the whole time period. Note that our measure takes into account the availability of the data across countries by including them gradually into the sample.

³ To be clear, there are no perfectly safe assets. By safe asset we mean the safest assets available for which the default risk premium is almost negligible. In addition these assets generally benefit from a negative premium because holding them allows investors to hedge themselves partly against recessions, given their negative correlation with risky assets during crisis episodes in which risk aversion increases. This is the case, for instance, for US Treasuries, German Bunds and Swiss bonds.

The concept of neutral rate of interest and monetary policy

Does that mean that central banks are responsible for the fall in real rates because they have signalled their willingness to leave their policy rates at very low levels for a long time? Yes and no. To understand why real rates have steadily declined over the last 15 years, it is very useful to introduce the concept of the 'neutral rate of interest' (also called the natural rate, Wicksellian rate, or simply r^* by some economists⁴).

This rate is defined as the short-term equilibrium rate between demand and supply of funds

rate across economies, suggesting an important role for global factors. These main findings appear to be robust to alternative methodologies⁷.

Focusing on the euro area, Figure 5a suggests a collapse in the equilibrium real rate after 2008 and points towards a negative value for the last few years. Fries *et al* (2016), using a similar method, estimated time-varying national natural rates of interest for each of the euro area's largest four economies (Germany, France, Italy and Spain) since the creation of the euro in 1999. Their results (Figure 5b⁸) also suggest that neutral rates in the euro area's biggest countries have drifted very far into negative territory in recent years.

The determinants of the fall in the neutral rate are all the factors affecting the supply and demand for funds. These include demographics, lower productivity growth, lower investment, rising inequality, shifting preferences for less risky assets at home and abroad. Another interesting empirical exercise is therefore to attribute more precisely the decline of the neutral rate to these various components. Rachel and Smith (2015) explain the fall of global real rates by 450 basis points (bps) since 1980 as follows: while a reduction in the growth trend explains a decline of rates by 100bps (and 50 bps are left unexplained), demographics, the increase in savings in emerging markets invested in safe assets, the rise of inequality, and lower investment (coming from a fall in relative prices of capital goods and from lower public investment) have exerted a drag on real rates equivalent to 300bps.

However, the empirical version of the equilibrium rate estimated in most of these papers is slightly different from the one described in the previous section. The estimated neutral rate, commonly called r^* , is generally defined as the long-run equilibrium rate that should prevail

of a simple Taylor rule for the ECB in Figure 6, following Taylor's original specifications and coefficients (Taylor, 1993). We use headline and core inflation data from Eurostat and the (albeit imperfect⁹) output gap estimates from the European Commission, while for r^* we use either the time-varying estimates of Holston, Laubach and Williams (2016), or a constant r^* equal to 2 percent (the value that was used originally by Taylor but that happens to be also the pre-crisis average of equilibrium rates in the euro area). Comparing the two versions of the simple rule with core inflation (the blue and red solid lines of Figure 6), we can see that although their prescriptions were pretty similar before the crisis, they have diverged since 2008. The prescribed monetary policy taking into account both the economic situation and the evolution of the equilibrium rate has indeed been trending between 150 and 250 basis points below the one implied by a constant equilibrium rate. Moreover, this modified Taylor rule calls for a negative policy rate since the end of 2012, suggesting that the current level of ECB rates and additional unconventional policies to push the yield curve lower are justified.

Nevertheless, these numbers should not be taken too literally. A lot of uncertainty surrounds these neutral rate estimates: their values are volatile¹⁰ and the confidence intervals reported in the literature are generally quite large. Given the limitations of estimation methods – in real time in particular – neutral rate estimates should not be used as a direct target of monetary policy (either directly or in a Taylor rule as we have done¹¹) but as one important indicator among others to inform the decision making of the ECB governing council. In



e term secular stagnation was coined by Hansen (1939) to describe

current investment. Other factors could also drive the decline in capital expenditure: the fall in the relative price of durable equipment; a broken financial sector or one that has wrong incentives (Claeys, 2016); poor managerial incentives to invest within companies; a technological slowdown or at least a difficulty in rewarding innovators; monopoly positions in some industries leading to huge rents leading to disincentives to increase production; and finally the reduced capital intensity of leading industries (think General Motors, 220,000 employees



glut peak of 2005, the equilibrium real rate has continued to decline, suggesting that the external factor is important but that it might not be the main factor. Focusing on the euro area in particular, the monetary union also displays some of the most worrying features of secular stagnation. Even Germany, the top-performing country of the union, is characterised by low domestic demand, low wage growth, low inflation, an aging society and a heavy reliance on exports to ensure full employment. In addition, Germany's ever-increasing current account surpluses could be seen as a symptom of too much saving and not enough investment. In many countries of the periphery, growth and full employment before 2008 were obtained through leverage and bubbles. Today, these countries are characterised by low investment, lower potential growth and also low population growth. The periphery is now following the same export-led economic model as Germany by regaining competitiveness through prices to improve exports, but domestic demand is still very weak. This has led to an even larger current account surplus for the whole euro area, driving fears that the euro area could soon replace China and oil exporters in the global savings glut as the main savings' exporter.

Overall, the secular stagnation hypothesis is still an hypothesis, but a frightening one, and even if the particular mechanism described by Summers and Krugman or its secular nature is proved wrong over time, most of the features of secular stagnation are already present today and are weighing on growth and – to come back to the main topic of this paper – on interest rates. Imbalances leading to a global savings glut in emerging markets and now in Europe, the historical rise of inequality, the various disincentives to invest, aging populations and slowing productivity growth, are real structural problems in need of solutions, whether secular stagnation is underway or not.

Concluding remarks and future challenges for policy

The decline in long-term rates on European sovereign bonds in the last few years results from a combination of factors: a fall in inflation expectations, a return of risk premia to levels more in line with credit risks (unlike before or during the euro crisis) and most importantly a fall in real rates driven by a secular decline in neutral rates. These fundamental factors are the main drivers of the decline in long-term yields in Europe, making it very difficult to qualify the current state of the bond market as a bubble. In our view, low rates are the symptoms of our diseases, not their cause. Instead of accusing central banks, it is crucial to tackle the causes behind the fall of long-term rates, but also to find solutions for the harmful consequences that lower equilibrium rates could have for the conduct of monetary policy.

If the neutral real rate is negative or around zero, even if inflation is around the 2 percent target, steady-state policy rates would be around 2 percent. This would give less leeway to cut rates when next recession arrives. For comparison, in the US, the average reduction during the past nine recessions in the Fed policy rate was equal to about 5.5 percentage points. All else being equal, a lower neutral rate implies that episodes in which monetary policy is constrained by the zero lower bound are likely to be more frequent and longer. This implies that the ECB would need to rely more heavily on unconventional policies, the effects of which are less certain, and which are more difficult to calibrate given their relative novelty. Moreover, given the particular institutional arrangement of the monetary union, the use of these policies

If the equilibrium rate remains very low or even negative for a prolonged period, the ECB should reassess its monetary policy framework and its inflation target. This target is not set in stone and is defined by the ECB itself. The (below but close to) 2 percent target might have been suitable for the first years of the ECB and may have helped anchor inflation expectations at a low and stable level at a time when the neutral rate was around 2 percent, but it might not be a well-suited inflation target for a low neutral rate era. The ECB should determine if it would be wise to raise its inflation target (for instance to 4 percent) so that the market can clear at a lower real rate. Of course, this is a very serious decision and there would be some risks involved. Some have argued that a change to the target could lead to a loss of credibility of the central bank and dis-anchor fragile expectations. We don't think that this would be the case, but the main benefit of the 2 percent inflation target is that, at this level of inflation, many economic agents behave as if there were no inflation at all. A higher level could change that and revive indexation of contracts and thus second-round effects when there is a shock to headline inflation (for instance from energy prices).

Finally, lower neutral rates and their potential effects on the real economy (the effects of lower real rates on the real economy) are also worth considering.

- Claeys, G., Z. Darvas, A. Leandro and T. Walsh (2015) 'The Effects of Ultra-loose Monetary Policy on Inequality', *Policy Contribution* 2015/09, Bruegel
- Claeys, G., A. Leandro and A. Mandra (2015) 'European Central Bank Quantitative Easing: the Detailed Manual', *Policy Contribution* 2015/02, Bruegel
- Claeys, G. and A. Leandro (2016) 'The European Central Bank's Quantitative Easing Programme: Limits and Risks', *Policy Contribution* 2016/04, Bruegel
- Darvas, Z. and A. Simon (2015) 'Filling the gap: open economy considerations for more reliable potential output estimates', *Working Paper* 2015/11, Bruegel

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