

IN-DEPTH ANALYSIS

Requested by the ECON committee



Monetary Policy in an Era of Low Average Growth Rates

Monetary Dialogue November 2018



Policy Department for Economic, Scientific and Quality of Life Policies
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Monetary Policy in an Era of Low Average Growth Rates

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Abstract

Economic growth in the euro area has been sluggish since the onset of the global financial crisis of 2008. While some of this sluggishness reflected cyclical patterns, ongoing weak productivity growth and demographic factors point to slow average growth rates for the euro area in the coming decades. This will most likely translate into a lower equilibrium real interest rate. The ECB should follow the Federal Reserve in providing estimates to the public of average nominal interest rate it expects to set over the long term and that this is likely lower than average rates during the pre-crisis era. The ECB should continue advocating for growth-boosting structural reforms but should also consider advocating for higher immigration levels to improve Europe's demographic profile and growth potential.

This document was requested by the European Parliament's Committee on Economic and Monetary Affairs.

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EXECUTIVE SUMMARY

- Economic growth in the euro area has been very sluggish since the onset of the global financial crisis of 2008. While some of this sluggishness reflected cyclical patterns, ongoing weak productivity growth and demographic factors point to slow average growth rates for the euro area in the coming decades.
- Growth accounting research points to a slump in the growth in total factor productivity (TFP) in the euro area. Standard models of economic growth point to TFP growth as the crucial factor driving income levels, if this trend persists growth in euro area GDP per worker will be very low.
- In the absence of major demographic changes, such as a substantial increase in immigration, the euro area's work-age population is set to decline. Combined with weak growth in GDP per worker, the average growth rate of euro area GDP may not be much above zero in the coming decades.
- Structural reforms to labour markets, product markets and pension systems all have the potential to boost euro area growth in the coming decades. But their effects will take a long time and they are unlikely to fully offset the decline in growth due to demographic factors and weak underlying productivity growth.
- Productivity growth has also been weak in the United States, suggesting the reasons for this development are not solely European in origin and thus not necessarily something European governments can offset with policy actions.
- Weak GDP growth will most likely translate into a lower equilibrium real interest rate, i.e. a reduction in the average real interest rate that stabilises the economy. Econometric models show sharp declines in estimates of this equilibrium interest rate for both the euro area and the United States.
- Federal Reserve officials have been open in discussing the concept of an equilibrium real interest rate and the public forecasts of FOMC members show they believe the average long-run federal funds rates will be notably lower than they thought five years ago.
- The ECB should follow the Federal Reserve in providing estimates to the public of average nominal interest rate it expects to set over the long term and that this is likely lower than average rates during the pre-crisis era.
- The ECB should continue advocating for growth-boosting structural reforms but should also consider advocating for higher immigration levels to improve Europe's demographic profile and growth potential.

1. INTRODUCTION

The decade since global financial crisis has seen disappointing rates of economic growth in the world's advanced economies. Some of this weak growth was undoubtedly due to the damage done to the global economy by the crisis, with weak investment damaging the supply capacity of the economy and fiscal austerity and financial sector retrenchment having negative effect on aggregate demand over a number of years. At this point, however, it appears that the longer-term trend growth rates for most advanced economies are now lower than they were in previous decades and that slow growth is not a temporary "crisis hangover" phenomenon. The underlying causes for this slow growth rates are a weak rates of improvements in productivity and demographic factors restraining the supply of labour and these are likely to be persistent.

In this paper, I discuss the prospects for longer-term growth in the euro area and its implications for the practice of monetary policy by the ECB. The structure of the paper is as follows.

Section 2 presents evidence on the patterns that are likely to determine longer-term growth in the euro area, drawing on research I have conducted with Kieran McQuinn. I argue that on its current trajectory, the longer-term average growth capacity of the euro area is low, probably below 0.5 percentage points of growth per year.¹ This prediction is based on a very low average growth rate of what economists term "total factor productivity" (the element of growth in GDP that is not driven by increased capital and labour inputs) and also by a declining work-age population. The section discusses how a higher growth rate may be possible if euro area countries implement various structural reforms but argues that, even if implemented successfully, these reforms are unlikely to return Europe to pre-crisis rates of economic growth.

Section 3 discusses the implications of lower growth for the level of real interest rates that stabilises the economy, the so-called "natural rate of interest" or "equilibrium real interest rate". I provide a simple analytical framework to describe how this equilibrium rate is determined. I conclude that, as has been suggested by Lawrence Summers (2014) and others, it seems likely that this natural rate of interest is much lower in advanced economics than it was twenty years ago and discuss a number of factors that point towards this conclusion.

Section 4 discusses the short-term and long-term implications of low structural growth rates for the European Central Bank.

¹ See McQuinn and Whelan (2018)

2. LONG-TERM GROWTH IN THE EURO AREA

This section uses a standard framework for thinking about long-term economic growth. It also presents evidence from applying this framework to both the euro area and the United States and discusses the potential effects of structural reforms on growth in the euro area.

2.1. A Framework for Thinking About Longer-Term Growth

When thinking about economic growth, macroeconomists often borrow a tool from microeconomics – the “production function”. The idea behind the production function is that it tells us how much a firm can produce given a certain amount of inputs such as capital and labour. The concept of an economy-wide production function was introduced to macroeconomics by Nobel prize winner, Robert Solow, in a series of contributions during the late 1950s. A typical representation of the economy-wide production function looks like this

$$Y = AK^\alpha L^{1-\alpha}$$

This equation links the total amount of GDP produced in an economy, Y , with the total amount of capital used (for example buildings and equipment), K , the total amount of labour supplied by workers, L , and another term, A , measuring the efficiency with which the economy uses its capital and labour inputs. Economists call this measure of efficiency “total factor productivity” or TFP. The term α , which indicates the importance of capital relative to labour in the production process is defined to be a number between zero and one.

This production function has two important features. First, it displays what is called “constant returns to scale”, meaning a doubling of capital and labour inputs leads to a doubling of GDP. Second, it displays “diminishing marginal returns” for capital and labour inputs. This means that adding these inputs increases GDP, but just adding extra capital on its own, for example, leads to progressively smaller and smaller additions to GDP.

Often economists are more interested in the effects of economic growth on living standards rather than its impact on the level of GDP. For living standards, the key indicator is labour productivity, which is the amount of GDP produced per unit of labour input. Within the production function above, this can be expressed as

$$\frac{Y}{L} = A \left(\frac{K}{L} \right)^\alpha$$

This tells us that labour productivity depends on the amount of capital available per unit of labour input and also on TFP.

In his famous work on economic growth, Robert Solow (1956) pointed to the key role that TFP played in determining longer-run living standards. In the absence of improvements in TFP, average living standards will only be improved if there are increases in the amount of capital used per worker, which is known as “capital deepening”. But because of diminishing marginal productivity, capital deepening has progressively smaller effects on GDP over time. Solow pointed out that to keep growing, economies need increases in TFP to offset the impact of diminishing returns to capital deepening. In a wide variety of models of economic growth, the long-run growth rate of the economy depends on TFP and the growth rate of labour input.

Since Solow’s work in the 1950s, there have been a huge number of studies implementing this framework using data on various economies. Particularly popular have been “growth accounting” studies that decompose economic growth each year into the part due to the growth in labour input, the part due to the growth in capital input and the part due to increases in TFP.

2.2. Longer-Term Growth in the Euro Area

Here I provide some results for a recent growth accounting study of the euro area which I have co-authored with Dr. Kieran McQuinn of the Economic and Social Research Institute, Dublin.² We carried out a growth accounting study of the euro area, decomposing growth in GDP from 1970 to 2016 into the components due to the growth in the capital stock, the growth in labour input (measured by hours worked) and the growth rate of total factory productivity. Summary results are shown in Figure 1 below with Δy representing GDP growth, Δa representing TFP growth and Δk and Δl representing the contributions to GDP growth of capital growth and labour growth respectively. Figure 2 displays annual time series for GDP growth, capital stock growth, growth in hours worked and TFP growth. One caveat to these results is that, for data availability reasons, these calculations refer only to the original 12 euro member states.

A number of results from these two figures are relevant for the discussion surrounding slower growth in Europe over the past decade and the prospects for future growth.

First, the economic slump in the euro area that began in 2008 and effectively continued through to 2013 saw a collapse in capital investment spending. Our calculations show that the growth rate of the capital stock fell from almost 3 percent on the eve of the crisis to below one percent between 2014 and 2016. In this sense, the cyclical weakness due to recession also had negative effects on the supply capacity of the euro area. Relative to the couple of years prior to the crisis, this factor alone was subtracting about 0.6 percentage points from year from the growth in supply capacity.

Second, the most recent decade has also seen a continuation of a pattern of weakening TFP growth which has been going on for decades. TFP growth over the period 1977-86 averaged 1.6 percent per year. This fell to 1.5 percent over 1987-96, to 0.7 percent over 1997-2006 and to 0.1 percent 2007-16. With capital stock growth weak and TFP growth slow, the recent recovery in the euro area economy has largely been driving by labour market improvements which have led to a jump in the growth rate of hours worked.

Third, our paper makes various attempts to extract the current “trend” rate of growth of TFP. In assessing this, we view the most recent year of strong TFP growth, 2015, as somewhat misleading. As shown in Figure 1, this year implies that the last three years of TFP growth in our sample averaged 0.6 percent. However, half of this is due to the huge increase in Irish GDP in 2015 associated with changes in the legal status of some technology companies operating within Ireland. This surge, famously dubbed “Leprauchaun economics” by Paul Krugman, has little to do with actual economic activity taking place in the euro area and is best discounted when looking for underlying trends. Excluding this, the average over 2014-16 was 0.3 percent growth and this looks like a reasonable estimate for the current underlying trend growth rate of TFP.

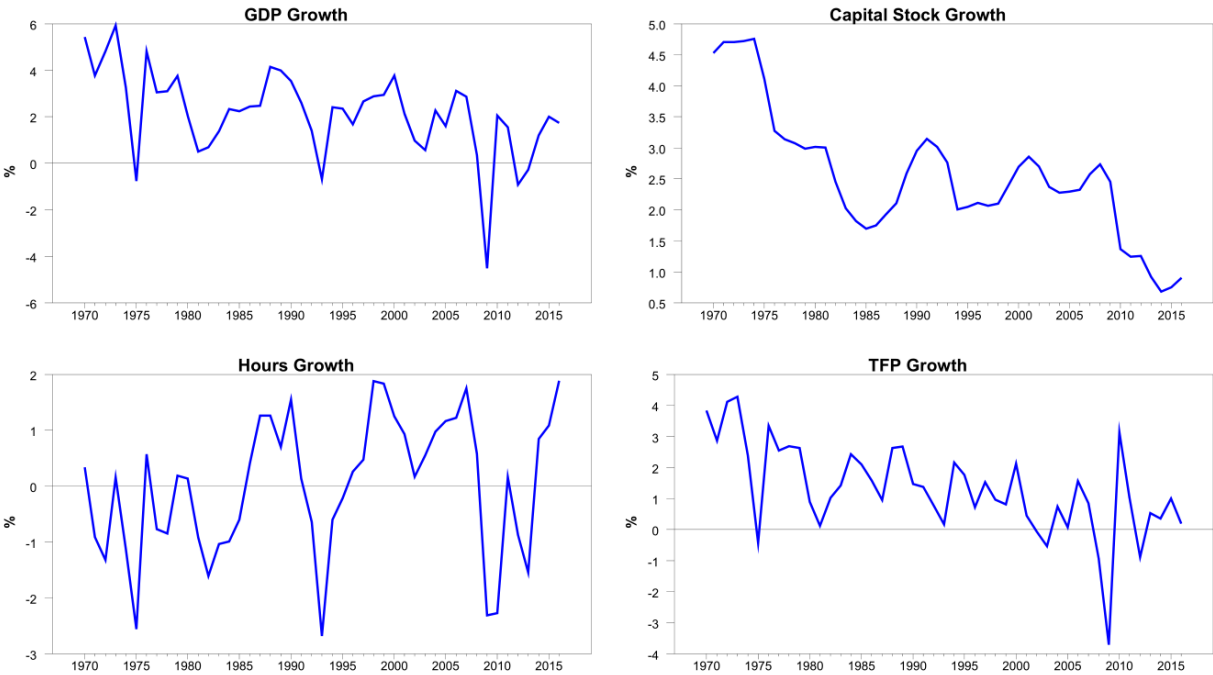
² See McQuinn and Whelan (2018). To implement these calculations, we used a value of α of one-third and construct capital stocks from investment data based on an assumed average depreciation rate of six percent per year. Our underlying conclusions of weakening capital stock growth in recent years and a declining trend growth rate for TFP are robust to a wide range of different values being used for these coefficients.

Figure 1: Decomposing Euro Area GDP Growth

Period	Δy	Δa	Δk	Δl
1970-1976	3.6	2.7	1.5	-0.6
1977-1986	2.1	1.6	0.8	-0.4
1987-1996	2.3	1.5	0.8	0.0
1997-2006	2.2	0.7	0.8	0.7
2007-2016	0.3	0.1	0.5	-0.2
2000-2016	1.0	0.2	0.6	0.2
2010-2016	0.9	0.4	0.3	0.2
2014-2016	1.9	0.6	0.3	1.0
2014-2016 (excl Irl)	1.6	0.3	0.3	1.0

Source: McQuinn and Whelan (2018).

Figure 2: Time Series for Euro Area GDP Growth and its Components



Source: McQuinn and Whelan (2018)

What do these calculations imply for the longer-run? As discussed above, economists generally believe that improvements in TFP are necessary to sustain long-run growth in labour productivity because growth based only on accumulation of capital runs into diminishing marginal returns. In Robert Solow's famous model of economic growth, the growth rate of labour productivity in the long-run is a multiple of TFP growth. While from a growth accounting perspective, growth is due to both TFP and capital deepening, the steady capital deepening is only possible due to improvements in TFP because without these improvements, capital deepening would lead to diminishing marginal returns.

If the trend growth rate of TFP is indeed about 0.3 percentage points per year, then long-run growth models point to a growth rate of labour productivity of only about 0.5 percentage points per year, with the contribution from capital deepening gradually becoming smaller than over the past decade because of the "diminishing returns" effect. This means that even the weak growth rates of capital input that we have seen in the last decade would be higher than the long-run growth rates that would prevail in an economy with 0.3 percentage point growth rate for TFP.

In addition to weak growth in labour productivity, the other factor that is likely to constrain economic growth in the euro area in the future is demographics. Europe's population is ageing and, unless there is a substantial change in either birth rates or immigration policies, this is going to lead to a substantial decline in the number of workers in the euro area economy. The latest demographic projections from Eurostat predict that the population of people aged between 15 and 64 in the euro area will decline from 221 million in 2016 to 197 million in 2050, an average annual decline of 0.4 percentage points.³ If the number of workers follows a similar pattern and labour productivity growth is as low as estimated by McQuinn and Whelan (2018) then the average GDP growth rate of the euro area between now and 2050 could be close to zero.

2.3. Some Evidence from the United States

One possible objection to the calculations presented above about TFP growth is that they are based on one particular study with a particular methodology. In addition, one could argue that the European economy's difficult past decade may not be a good guide to its future. However, the slowdown in TFP growth is not a phenomenon limited to Europe. For example, it is clear that TFP growth has also slowed in the United States.

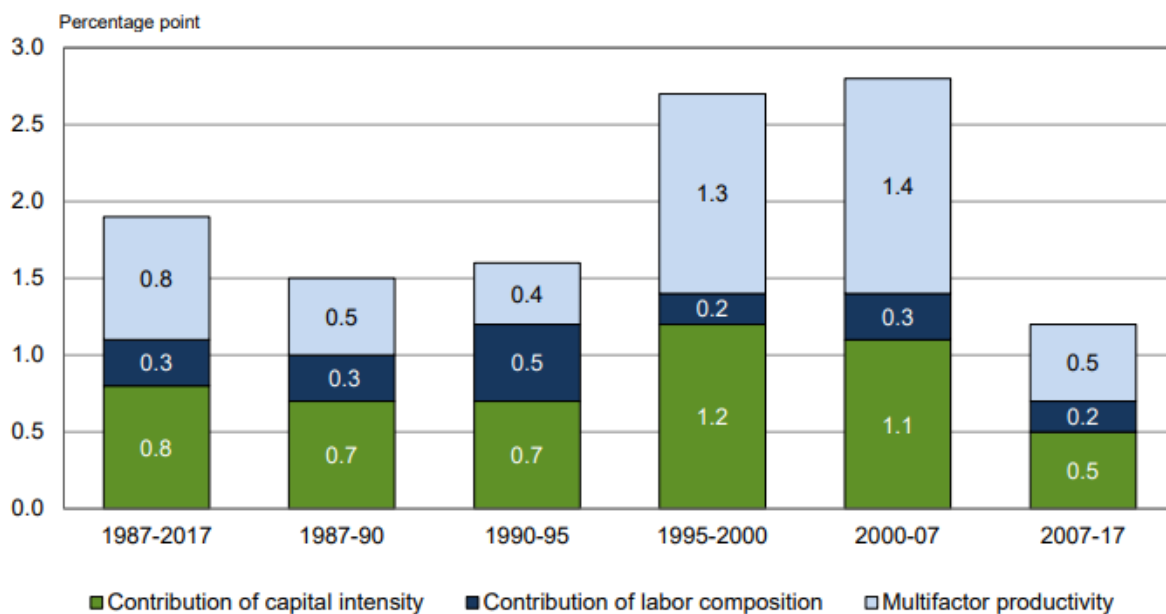
The most authoritative estimates of TFP growth in the United States are contained in an annual report published by the Bureau of Labor Statistics. The report uses the terminology "Multifactor productivity" but this is the same concept. Figure 3 below provides a chart from the latest BLS report illustrating the decomposition of growth in the US private nonfarm business sector.⁴ These estimates show that over the past decade TFP growth in the United States has slumped by almost a percentage point from the rates that prevailed over the period 1995-2007. Indeed, the rate of TFP growth calculated by the BLS is only slightly above the rates calculated for the euro area reported above.

These results argue against a Europe-specific explanation for slow TFP growth, which also means it may be harder for Europe-specific policy changes to reverse this trend.

³ See Eurostat (2018).

⁴ This is available at <https://www.bls.gov/news.release/pdf/prod3.pdf>.

Figure 3: Contributions to Labour Productivity Growth in the US Private Non-Farm Sector



Source: United States Bureau of Labor Statistics.

2.4. The Potential Effect of Structural Reforms

One potential ground for optimism is the possibility that structural reforms could boost the rate of economic growth in many euro area member states. The ECB as an institution is strongly supportive of the idea that structural reforms can boost labour productivity and the potential rate of economic growth with a statement to this effect appearing in every post-Governing-Council statement in recent years.

There is little doubt that structural reforms to labour markets, pension systems and product markets have the potential to increase GDP in many euro area countries. However, McQuinn and Whelan (2018) argue that even if these reforms are implemented successfully, they are likely to take a long time to have their full impact and are unlikely to prevent growth rates of euro area GDP slowing over time.

The methodology adopted in our study to assess the potential impact of structural reforms is to simulate the effects of different types of reforms by calculating how successful outcomes for unemployment rates, labour force participation rates and TFP levels would translate into higher rates of GDP growth.

1. Our “successful labour market reform” scenario brings equilibrium unemployment rates in a number of euro area countries that have had high unemployment rates to 5 percent over a period of 12 years. This reflects the fact that successful labour market reforms, such as the Hartz reforms in Germany in the 2000s, can take up to a decade to have their full effect.
2. Our “successful pension reform” scenario increases labour force participation rates gradually over a 20 year period, so that the probability of workers over 50 years of age continuing to work at ages 55, 60, 65, 70, and 75 and over equal the corresponding current probabilities for Swiss workers, a country picked out by OECD as having exemplary high rates of labour force participation among older workers. The 20-year phase in for this effect reflects the difficulty in changing legally obligated pension requirements. As McQuinn and Whelan (2018) discuss,

there are many different pension reform programmes underway in Europe and the vast majority of them are being designed to phase in over a long period of time.

3. Finally, our “broader regulatory reform” scenario sees the level of TFP in lagging euro area countries rise over a thirty-year period to the level recorded by the Netherlands (which is assumed to continue growing at a trend rate of 0.2 percentage points per year).

Our calculations show that successful reforms that achieve this outcome can boost the growth rate of the euro area economy but these reforms are not enough to counter an underlying low trend growth rate of TFP and a declining work-age population to deliver higher growth rates than seen over the past decade. Over a thirty-year period from 2017-2046, we estimate a baseline average growth rate of 0.34 percent per year, which is boosted to 0.99 percent per year by combined implementation of the three successful reform-related outcomes described above. This means that reforms can cumulate to produce a substantial amount of additional GDP but they cannot restore GDP growth rates to their pre-crisis levels. Even in our full reform scenario, with all three sets of reforms implemented successfully, growth rates decline steadily over this period due to weak TFP growth rates in “frontier countries” and a declining work-age population. From about 2030 onwards, growth rates are below 1 percent per year, even in the successful reform scenario.

These considerations are not arguments against implementing reforms, particularly as our calculations show they can have substantial growth effects in the coming decades in some countries, for example Italy and Greece. However, these calculations suggest that structural reforms are unlikely to counteract the other forces pointing towards slower growth rates for the euro area economy in the future.

3. THE EQUILIBRIUM REAL RATE OF INTEREST

If we accept that demographic changes and slower productivity growth are going to mean lower rates of economic growth in the future, what implications does this have for monetary policy? One area that has been widely discussed by academics is the idea that the so-called “equilibrium real interest rate” may fall when rates of economic growth decline. This section first discusses the theoretical concept of the equilibrium real interest rate and the arguments for why it may have declined in recent years and then moves on to discuss some empirical evidence.

3.1. Theoretical Considerations

Over recent decades, interest rates have been the principal policy tool that central banks have used to control the economy. While most of the focus in policy discussions tends to be the nominal interest rate set by the central bank, macroeconomists generally believe that it is “real” interest rates that matter i.e. what matters is the nominal interest rate minus the rate of inflation. To consider why this is the case, imagine an economy with a 10 percent nominal interest rate. Relative to current interest rates in Europe, this might look like a level that would strongly encourage people to save and strongly discourage borrowing for investment. However, if the underlying inflation rate was also 10 percent, so the real interest rate was zero, then the incentive to save would not be so strong: Savers would not be able to buy more goods in one year’s time with their invested money than they would today. Similarly, firms seeing their prices and profits go up by 10 percent a year won’t so much about borrowing at what looks like a high interest rate.

In most modern macroeconomic models, there is a level of the real interest rate that is consistent with stabilising the economy and keeping it growing at its maximum sustainable potential rate. In this kind of model, monetary policy may operate in a counter-cyclical manner, seeking to boost the growth rate when the economy is in a slump and dampen it when the economy is potentially overheating, but it would generally set interest rates that are on average consistent with the estimated equilibrium real rate. So, for example, if a central bank had a target inflation rate of 2 percent and believed the equilibrium real interest rate was 3 percent, then on average we would expect the nominal policy interest rate to be 5 percent.

Like most “equilibrium” concepts in economics, there is no reason to think that this equilibrium real interest rate is constant over time. Indeed, it is likely that this rate moves up and down over time. In recent years, many macroeconomists, most notably Larry Summers (2014) have argued that equilibrium real interest rates appear to be much lower now than they were in previous decades.

The arguments for a lower equilibrium real interest rate focus both on investment demand and on the supply of savings. In relation to investment, a slower growing economy likely means fewer profitable investment opportunities for firms. Thus, the number of investment projects that are worth undertaking at each specific real interest rate would be lower. So a high interest rate may produce enough investment to be consistent with macroeconomic stability if the underlying growth rate is high but stability may require a low real interest rate when the underlying growth rate is low.

There are also some explanations that focus on the behaviour of savings. One argument is that growing inequality is putting a higher fraction of income into the hands of better off people, who can afford to save more. Also, with people around the world living longer, there is a greater demand for retirement-related savings. Another important factor has been the increasing importance of China to the global economy and the fact the weak social safety net in China leads to a very high household savings rate. A final factor worth noting is the behaviour of many developing country central banks which began, after the Asian crises of the late 1990s, to accumulate large amounts of official savings in the form of foreign reserves.

To understand how these factors could lower the equilibrium real interest rate, consider the following simple supply-and-demand model of global savings and investment. While individual economies can have savings levels that differ from investment levels, the world economy is a closed one and so the closed economy national accounting of “savings equals investment” must hold at a global level. Savings can be modelled as an increasing function of the real interest rate and investment as a decreasing function of the real interest rate. We can describe the equilibrium real interest rate in a closed economy as that rate consistent with the identity that savings equals investment.

Consider now what happens when factors that are unrelated to interest rates boost the supply of savings (e.g. demographic changes) so that, at each real interest rate, the supply of savings becomes larger than it was before. In this framework, this can be modelled by a shift leftwards in the supply curve for savings. The outcome would be a higher level of savings and investment and a lower level of real interest rates. Figure 4 illustrates this outcome. However, while data from the IMF on global savings trends show some increase in the savings and investment shares of global GDP, the increase is relatively small.

For this reason, it is likely that both savings- and investment-related factors are at work, with something more like the pattern described in Figure 5 describing what is going on. This figure shows what happens when an increase in savings demand is combined with a decrease in investment demand. Both shifts lead to lower real interest rates but they can combine to leave the total amount of savings and investment about the same as prevailed before these shifts.

Figure 4: An Increased Supply of Savings

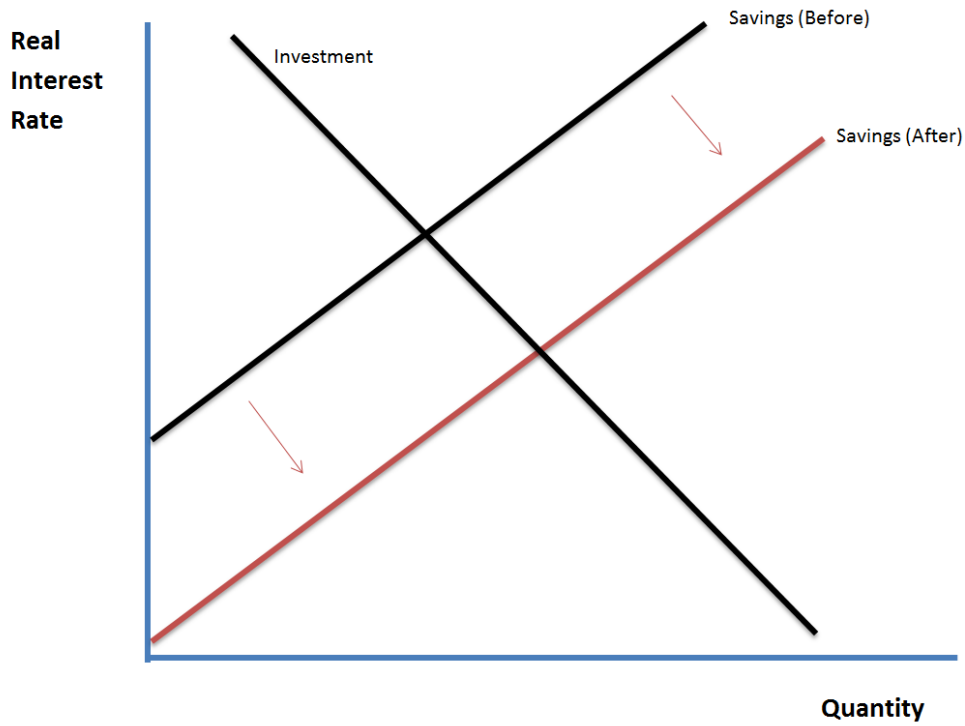
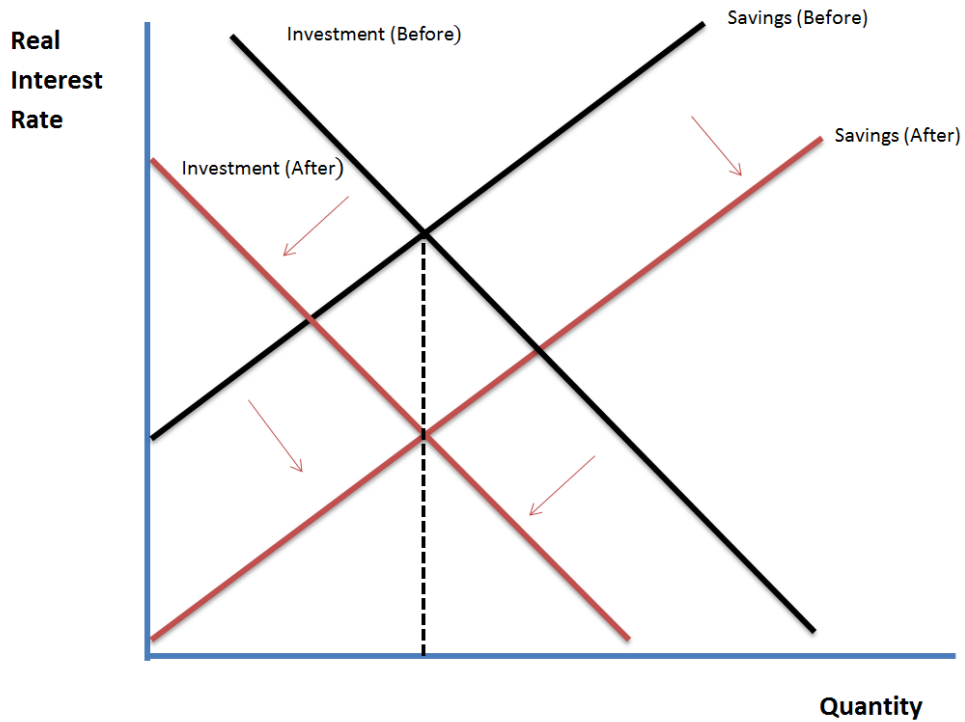


Figure 5: An Increased Supply of Savings Combined with a Reduction in Investment Demand



3.2. Evidence

That's the theory: What is the evidence? Finding evidence for a shifting equilibrium real rate of interest is tricky because, by definition, this is a theoretical concept rather than something we can find in published data.

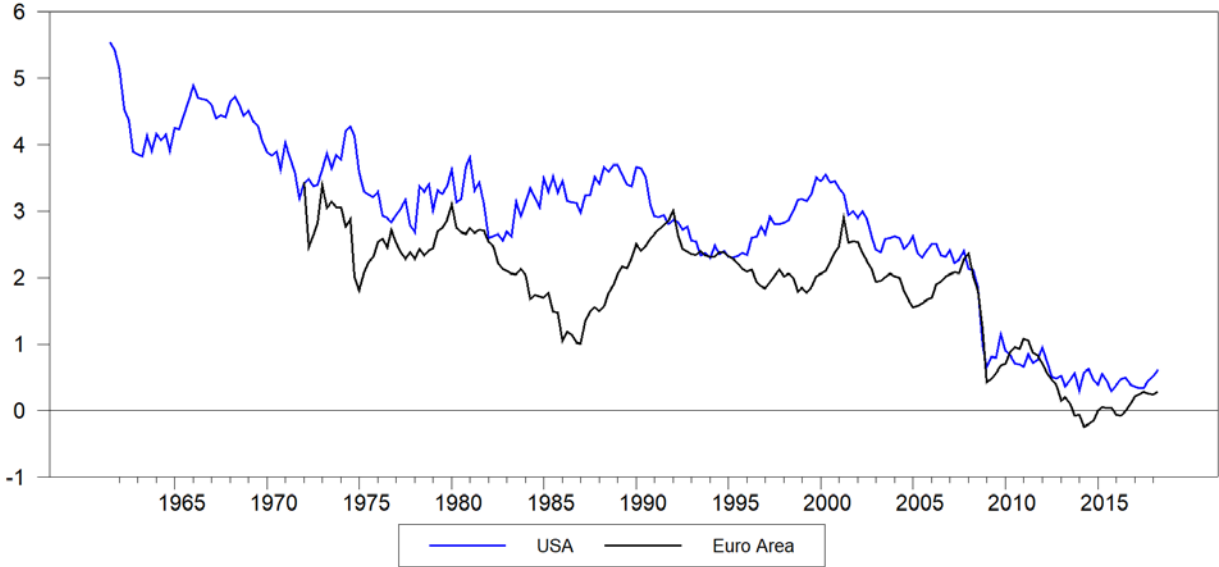
The econometric literature in this area has estimated the natural real rate by treating it as a "latent variable" in empirical models. This works as follows: The macroeconomist specifies a model of the economy, describing how all of the variables, including latent variables such as the equilibrium real rate of interest, relate to each other. Some initial assumptions are made about how the latent variables behave and then the data are used to provide updated guesses as to how the latent variable have evolved. So, for example, if the model estimates that inflation should have increased given the current values of macroeconomic variables but that it has not, it will estimate that the "natural rate of unemployment", another latent variable, has declined. Similarly, if the data show that even low real interest rates have done little to stimulate economic growth, the models estimate that the equilibrium real rate has declined.

The most influential work on this area has come from Laubach and Williams (2003). Among the many papers on this topic, the Laubach-Williams model has had more influence on the debate for two reasons. First, John Williams has in recent years been a member of the Federal Open Market Committee, first as President of the San Francisco Fed and now in the highly-influential post of President of the New York Fed. So these estimates give an insight into the thinking of at least one member of the Fed's policy-making committee. Second, the Federal Reserve has produced regular updates of the estimates from the Laubach-Williams model, making it easy to find recent estimates of the equilibrium real rate and other latent variables such as the potential growth rate of the US economy. They have also made the code underlying the results available, which has allowed other researchers to apply the model and develop variants.

Holston, Laubach and Williams (2017) provide an updated methodology for measuring the equilibrium real interest rate and apply it to various advanced economies, including the euro area. In their model, the equilibrium real interest rate is the real rate that stabilises the output gap, i.e. the difference between real GDP and its potential long-run sustainable level. The nominal interest rate used in this analysis was the federal funds rate for the United States a three-month interest rate. This means the estimates of the equilibrium real rate effectively translate into a long-term policy rate that can be obtained by adding on the expected average rate of inflation.

Updated versions of these calculations are being made available each quarter by the New York Fed. Figure 6 shows the most recent estimates of the equilibrium real rate for both the US and euro area. The model suggests sharp declines in the equilibrium real rate following the global financial crisis, with no evidence yet of any pickup. The most recent estimates for the euro area have been particularly low, going below zero at some points, implying an equilibrium policy rate of below two percent.

Figure 6: Holston, Laubach and Williams estimates of the equilibrium real rate in the US and the Euro Area



Source: Author’s chart with data taken from the New York Fed website <https://www.newyorkfed.org/research/policy/rstar/overview>.

4. IMPLICATIONS FOR MONETARY POLICY

Here, I discuss the implications for the ECB's monetary policy of slow long-term growth and a likely reduction in the equilibrium real interest rate, starting with the short-term implications and then outlining some longer-term consequences.

4.1. Short-Term: Communications Strategy

The ECB has already indicated that it is preparing to "normalise" its monetary policy, winding down its asset purchase programme at the end of this year and signalling the likelihood of an increase in interest rates in summer 2019. In recent years, financial markets have focused heavily on the ECB's asset purchase programmes and the length of time they are likely to keep policy rates at zero or below zero in the case of the deposit rate, which is actually the key rate now influencing short-term market rates. However, we are moving into a period where the focus will increasingly be on how high the ECB's policy rates will go once it has started to increase them.

The ECB has had two previous "tightening cycles" and its main refinancing rate peaked during those cycles at 4.75 percent in October 2000 and at 4.25 percent in July 2008. If markets start to believe that a similar amount of tightening is going to happen in this cycle, this could be reflected in a sharp rise in long-term interest rates, perhaps sharper than the ECB would like. It will become increasingly important for senior ECB officials to signal to the public where they think rates will settle down in a "normal" economic environment.

This is an area where the ECB may have much to learn from the Federal Reserve's current approach to monetary policy. For most of the past decade, the ECB has been somewhat behind the Federal Reserve in implementing important changes to monetary policy: The ECB was slower to cut policy rates towards zero, slower to adopt forward guidance and much slower to adopt quantitative easing. While it is probably fair to argue that the ECB should have been more aggressive in each of these areas, being a "second mover" has allowed the ECB to learn from the Fed's successes and failures in this area. The ECB is again a bit behind the Fed in the latest set of monetary policy developments as the Fed is well advanced into a cycle of increasing interest rates while the ECB has not yet started.

As part of this process of increasing interest rates, there has been an intensive within the Fed system of the likely future "neutral" or "equilibrium" real rate and a considerable amount of signalling to the public that this rate is lower than it was in the past.

In addition to releasing academic research such as the Laubach-Williams estimates of the equilibrium real interest rate, leading Fed officials have repeatedly discussed the role that this concept (and the idea of a natural rate of unemployment) play in their policy deliberations. In his most recent speech and the annual Jackson Hole conference, Fed chairman Jerome Powell was somewhat sceptical about latent variables such as "rstar" and "ustar" stressing the uncertainty inherent in estimating these values and the problems caused by navigating the economy with "shifting stars".⁵ It is clear, however, that Powell believes in the idea of "neutral" policy rate. For example, he was reported last month as saying

"Interest rates are still accommodative, but we're gradually moving to a place where they'll be neutral ... We may go past neutral. But we're a long way from neutral at this point, probably"

In addition to speeches, the Fed provides another useful guide to the public of where interest rates are likely to go via a set of macroeconomic forecasts that are provided by members of the Federal Open Market Committee (FOMC), the committee that sets monetary policy.

⁵ <https://www.federalreserve.gov/newsevents/speech/powell20180824a.htm>.

These forecasts include the committee members' estimates of the "long term" levels of both inflation and the federal funds rates, this providing an implicit estimate of what the members believe to be the equilibrium real rate. The long-run forecasts of inflation of committee members have not changed much in recent years remaining at about two percent. However, there has been a large decline in the implicit equilibrium real rate. In January 2012, the median estimate of the long-run federal funds rate was 4.25 percent, implying an equilibrium real rate of 2.25 percent.⁶ By September 2018, however, the median estimate of the long-run federal funds rate had fallen to 3 percent, implying an equilibrium real rate of 1 percent.⁷ This means FOMC members' estimates of the equilibrium real interest rate have more than halved over the past five years.

This suggests a set of recommendations for the ECB. First, ECB Governing Council members should begin to discuss the possibility that equilibrium real interest rates have fallen and the implications this will have for its next tightening cycle. Second, the ECB should consider implementing a Governing Council forecast release similar to the one published by the Fed and this release should include long-run estimates of the ECB's policy rates.

4.2. Longer Term Implications

Over the longer term, a lower equilibrium real rate of interest will imply lower average policy rates for the Eurosystem. This will make it more likely that the ECB will end up dealing with "zero bound" issues because if, for example, the equilibrium real rate is 1 percent (as the FOMC currently estimates for the US) then average nominal interest rates would be about 3 percent. This gives 300 basis points of "easing" when moving from average economic conditions to recession. This is less easing via interest rate reductions than central banks have been able to do in the past and may mean the ECB has to be quicker to use unconventional tools such as asset purchase programmes and negative deposit rates.

Whether this is a major constraint on future ECB monetary policy is a matter for debate. On the one hand, there is far greater uncertainty about the effectiveness of unconventional tools such as quantitative easing than there is about the traditional monetary policy tool of adjusting short-term interest rates. On the other hand, there is evidence that the Federal Reserve did not lose much of its ability to influence medium-term interest rates even during its long zero-bound period with forward guidance and asset purchase programmes still allowing them to have leverage over financial market conditions.⁸

In addition, it is now clear that the traditional idea of a "zero bound" on interest rates does not hold and that policy rates can go well below zero, particularly if asset purchase programmes have created substantial excess liquidity. The traditional rationale for the zero bound on interest rates was that people would be better off to simply hold their money as cash rather than invest in assets with negative nominal returns. This argument probably works somewhat well for households and savings accounts – some households may be willing to take the security risks associated with keeping money "under the mattress" – but this has generally kept interest rates on personal savings accounts from going negative. However, for the large financial institutions now holding over a trillion euros in central bank reserves, storing money in warehouses has not been something worth considering at the prevailing negative interest rates that we have seen in the euro area. The costs associated with security and insurance likely mean that, at some point in the future, the ECB could set a deposit rate of below minus one percentage point.

⁶ <https://www.federalreserve.gov/monetarypolicy/files/FOMC20120125SEPcompilation.pdf>.

⁷ <https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20180926.pdf>.

⁸ Swanson (2018).

One way to avoid these complications would be to raise the central bank's inflation target. An inflation target of 4 percent would allow the ECB an additional 200 basis points of easing before they would have to consider negative deposit rates or asset purchase programmes. However, while this may be something that other central banks can consider, the ECB's constitution's focus on the primacy of price stability seems likely to rule out anything like a 4 percent inflation target being pursued.

A final point is whether the ECB should move beyond simply advocating for structural reforms to boost economic growth to also pointing out the economic benefits of higher rates of immigration to the euro area. Summers (2014) argues that the equilibrium real interest rate depends positively on the rate of population growth. Using the framework presented in the previous section, you could argue that low rates of population growth depress investment demand by firms because they limit the possibilities for expanding the market for products. Thus, a higher rate of population growth can shift the investment demand curve upwards and raise the equilibrium real rate.

Another benefit of increased immigration of younger work-age people to Europe would be an easing of the fiscal problems that will be associated with paying for future pension and health systems. Ageing populations will make it difficult for current promises in public pension systems to be delivered and will make public health systems increasingly difficult to afford without increasing tax rates. A large influx of younger workers who will boost population growth and pay taxes will assist with easing these problems. While it may seem strange to advocate that the ECB should become involved in taking a policy issue on something as politically sensitive as immigration, the arguments for the economic benefits of higher rates of immigration for the euro area economy are probably at least as strong as the cases for the kinds of structural reforms that ECB officials are comfortable advocating.

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Economic growth in the euro area has been sluggish since the onset of the global financial crisis of 2008. While some of this sluggishness reflected cyclical patterns, ongoing weak productivity growth and demographic factors point to slow average growth rates for the euro area in the coming decades. This will most likely translate into a lower equilibrium real interest rate. The ECB should follow the Federal Reserve in providing estimates to the public of average nominal interest rate it expects to set over the long term and that this is likely lower than average rates during the pre-crisis era. The ECB should continue advocating for growth-boosting structural reforms but should also consider advocating for higher immigration levels to improve Europe's demographic profile and growth potential.

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