

Ultra-low or negative interest rates: what they mean for financial stability and growth¹

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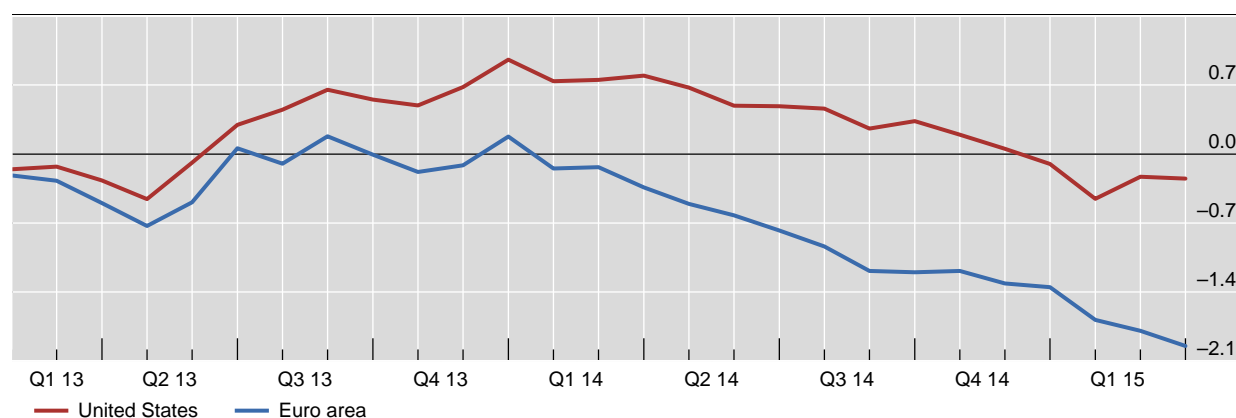
Riga, 22 April 2015

When policy interest rates came down to almost zero and central bank balance sheets expanded due to large-scale market interventions in the wake of the Global Financial Crisis, the consensus was that this unconventional monetary policy (UMP) would be temporary. More than six years later, the prospect of normalisation seems remote in most advanced economies. Indeed, most of continental Europe (the euro zone, Denmark, Sweden and Switzerland) have moved towards a much more extreme form of UMP by introducing negative policy interest rates, and/or negative central bank deposit rates. Together with forward guidance and large scale asset purchases, such measures have created an unprecedented situation where nominal interest rates in a number of European countries are negative across a range of maturities in the benchmark yield curve, from overnight out to five years.

Negative term premia¹

In per cent

Graph 1



¹ Decomposition of the 10-year nominal yield according to a joint macroeconomic and term structure model; for the euro area, using French government bond data. See P Hördahl and O Tristani, "Inflation risk premia in the euro area and the United States", *International Journal of Central Banking*, September 2014.

Sources: Bloomberg; BIS calculations.

The upshot is that, instead of paying interest, a number of governments in continental Europe are now being paid to borrow. For their part, investors are currently not compensated for taking interest rate risk (Graph 1). There is no precedent in economic history for negative nominal interest rates, even during the Great Depression in the United States.² Not even Keynes, who coined the terrifying metaphor

¹ These remarks were prepared together with Boris Hofmann.

² In the wake of the Great Depression, US short-term nominal interest rates fell to near-zero levels in 1932 but they never turned negative.

of the "euthanasia of the rentiers", ever contemplated negative nominal interest rates. An experiment is under way in continental Europe to test the "boundaries of the unthinkable" in monetary policy.

What kind of outcome can we expect? Significant global spillovers are already making themselves felt, mainly through the effect on exchange rate constellations. Negative rates in European countries have raised market expectations that policy normalisation will be delayed elsewhere, above all in the United States. And there is also likely to be a range of unintended consequences. But before taking a look at the possible fallout from this experiment, we first have to ask what it is designed to achieve, and how it is supposed to affect short-term growth.

I. How are ultra-low interest rates supposed to affect growth in the short term?

The question here is how ultra-low or negative interest rates translate into improved growth rates. What are the channels of transmission?

In essence, the monetary stimulus aims to lift short-term growth via five main channels: by boosting credit to the real economy (the credit channel), by lifting asset prices (the asset valuation channel), by forcing investors away from safe assets towards riskier ones (the portfolio balance and risk-taking channels), by lowering the exchange rate (the exchange rate channel) and by attempting to nudge inflation up towards objectives with a view to warding off a so-called deflationary spiral (the reflation channel). I would now like to take a careful look at each of these channels in turn.

1. The credit channel

The main aim of an ultra-low interest rate policy is to deter saving and encourage borrowing. This is done by driving down the costs of financing, whether by bank lending or bond market issuance.

This channel is pushed to an extreme by the negative deposit rates introduced by some central banks. Negative nominal deposit rates are presented as a tax imposed by the central bank on commercial banks to encourage them to expand lending, and not as a tax on the savers. But there are two possibilities here: either the banks pass on the tax to their customers, so that negative rates are charged on retail deposits, and banks reduce their lending rates. This will hurt depositors but it could increase bank lending. Or, if this tax is not passed on, the negative deposit rates set by central banks will gain no traction in terms of incentivising commercial banks to lend more to the real economy.

2. The asset valuation channel

By design, ultra-low interest rates boost asset prices through a well-known mechanism: they reduce the discount rate on cash flows from assets, such as dividends or rents. Moreover, loose monetary conditions may raise expectations of improved economic conditions and thus higher future revenues from assets. Of course, this is at best a one-off effect and, therefore, temporary. Nevertheless, the short-term "exuberance" creates a feel-good factor, which is an intended effect of UMP.

3. The portfolio balance and risk-taking channel

Advocates of UMP argue that these policies will encourage investors to shift out of government bonds and into riskier assets. This is the portfolio balance channel. Indeed, the search for yield engineered by zero or negative nominal policy interest rates has fuelled more risk-taking, leading to a convergence

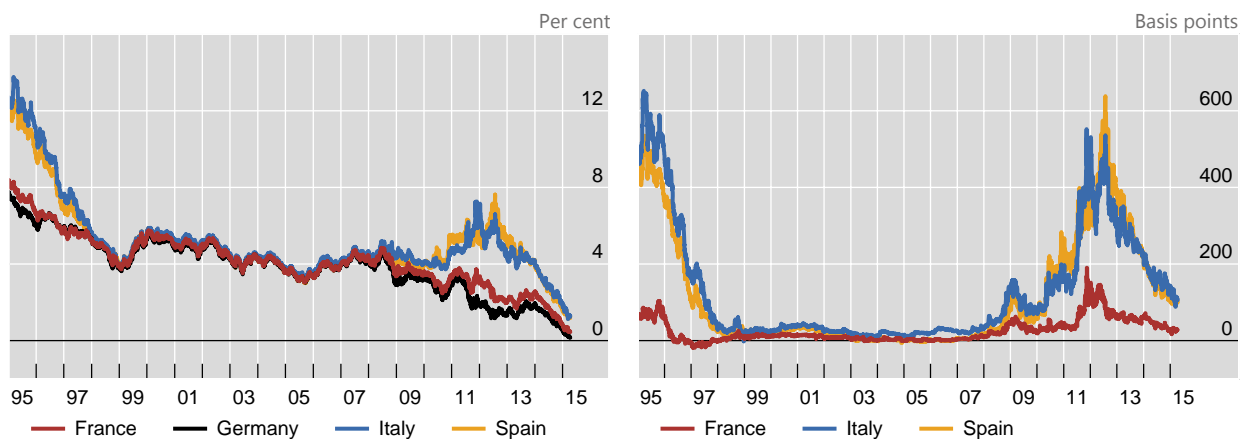
between the returns of risky assets and those of low-risk assets, as currently seen in the euro zone's sovereign credit spreads. These appear to be re-enacting the extreme compression of sovereign spreads, invariant to differences in credit quality, that occurred before the crisis (Graph 2). If, as many would agree, the euro zone's sovereign risks were mispriced then, we now seem to be heading back to that situation. The European Commission's prudential policy of applying a uniform zero risk weight to all sovereigns in EU bank regulation strengthens this effect. The problem here is that risk weights are not differentiated according to credit quality, contrary to the Basel II requirements.^{3,4}

Euro area government bond yields and spreads

Graph 2

10-year government bond yields

10-year government bond spreads¹ (to German bund)



¹ Spread vis-à-vis 10-year German government bond yield.

Source: Bloomberg; BIS calculations.

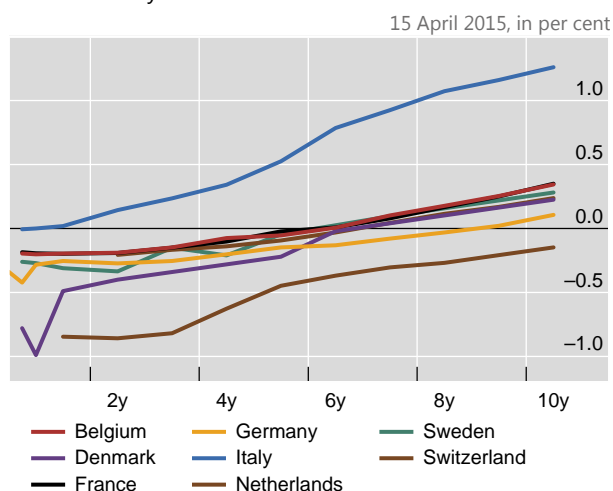
In their search for yield, investors also reach for duration, pushing into negative territory the term premium – which is supposed to compensate investors for the risk of holding long-duration bonds (Graph 1). In reaction to negative yields in the short- and medium-term segment of the euro zone sovereign yield curves, investors are piling up interest rate risk by investing in long-dated securities at very low yields. And, in fact, the effective duration of euro-denominated debt has risen significantly since the second half of 2014 (Graph 3). As a result, an eventual normalisation of long-term yields would inflict significant and widespread losses on investors, with potentially serious consequences for financial and economic stability.

This makes it a matter of urgency to address the gap in global regulation on interest rate risk in the banking book. Pillar 1 currently does not provide for any capital charge against this risk, an anomaly that will, we hope, soon be corrected by the Basel Committee on Banking Supervision (BCBS). As monetary policymakers, central banks in Europe have contributed heavily to the build-up of duration risk by bringing nominal yields in the two- to five-year part of the yield curve down to near zero and even negative levels. As supervisors or systemic risk managers, they should ensure that commercial banks are allocating enough capital to cover the interest rate risk they are accumulating. All this puts a premium on introducing a Pillar 1 charge on interest rate risk in the banking book as soon as possible.

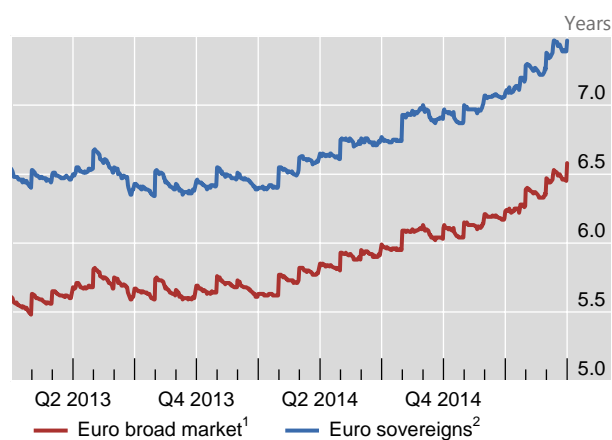
³ H Hannoun, "Sovereign risk in bank regulation and supervision: where do we stand?", speech at the Financial Stability Institute High-Level Meeting, Abu Dhabi, 26 October 2011.

⁴ For the rules applicable to sovereign risk weights, see *BIS Quarterly Review*, December 2013, p 10.

Government yield curves



Effective duration of Euro denominated debt



¹ Tracks the performance of EUR denominated investment grade debt publicly issued in the eurobond or Euro member domestic markets, including euro-sovereign, quasi-government, corporate, securitized and collateralized securities. ² Tracks the performance of EUR denominated sovereign debt publicly issued by Euro member countries in either the eurobond market or the issuer's own domestic market. Source: Bloomberg; Bank of America Merrill Lynch; BIS calculations.

Overall, the risk-taking channel of ultra-low interest rates operates as intended, but it has led to more risk taking in financial markets than in the real economy as investment remains weak.

4. The reflation channel

Attempts to lift inflation towards the central bank's target (in the case of the euro zone of slightly less than 2%) are presented as a way of warding off the risk of debt deflation – a deflationary spiral – that could otherwise result from an increase in the real debt burden. It's open to question, though, whether such a threat really exists.⁵ Signs of a downward price spiral are very hard to detect in Europe.⁶ What we saw, in 2014 and in January 2015, was a strong disinflation driven by the falling price of oil.⁷ In fact, the euro zone's annual core inflation rate (ie headline inflation minus energy, food, tobacco and alcohol) hardly changed between December 2013 (+0.7%) and March 2015 (+0.6%). As for annual headline inflation, this is currently around zero on both sides of the Atlantic and yet nobody would claim that the US economy is headed for deflation. The OECD's projection for wage increases of 1.9% in 2015 casts further doubt on the thesis of imminent deflation in the euro zone.⁸

⁵ In its April 2015 World Economic Outlook, the IMF puts the probability of deflation in the euro area (ie. a negative year-on-year change in the price level) in the second quarter of 2016 at close to 30%.

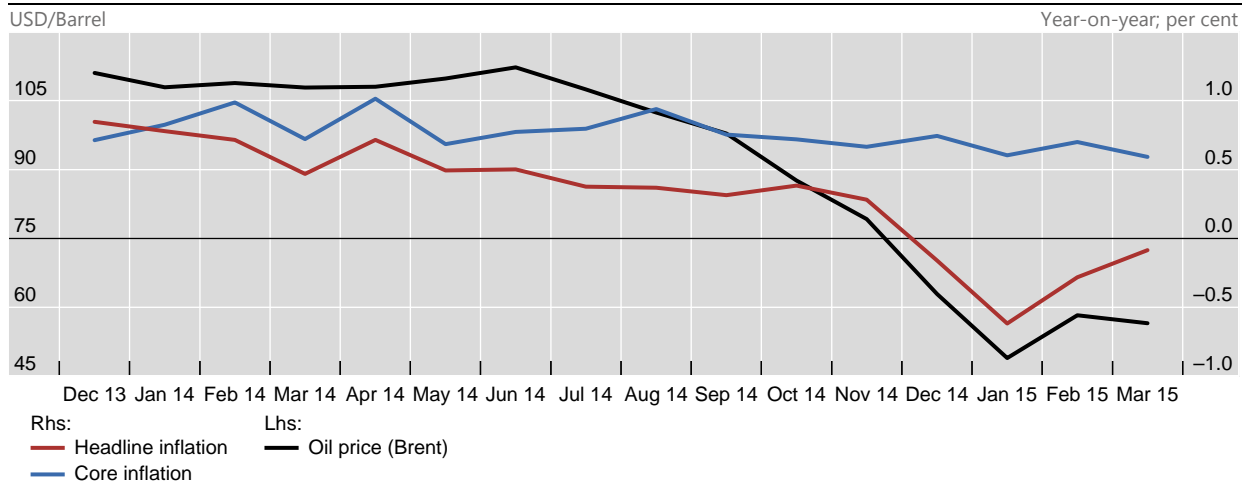
⁶ M Feldstein, "The deflation bogeyman", *Project Syndicate*, 28 February 2015.

⁷ The oil price (Brent) went from around \$11/barrel as of January 1999 to a peak of \$145.6/barrel on 11 July 2008, before retreating to \$34.6/barrel on 24 December 2008. The oil price then went up again to \$115.5/barrel on 19 June 2014 and now (20 April 2015) stands at below \$62/barrel.

⁸ A recent BIS study (C Borio, M Erdem, A Filardo and B Hofmann, "The costs of deflations: a historical perspective", *BIS Quarterly Review*, March 2015, pp 31–54) shows that the association of deflation with weak economic growth is misguided. Covering 140 years and up to 38 countries, the study shows that deflation is not the enemy of growth.

Oil price and euro area inflation

Graph 4



Sources: Bloomberg; Datastream; BIS; BIS calculations.

Consumer price inflation¹

In per cent

Table 1

	Year-on-year		Month-on-month (seasonally adjusted)	
	Euro area	United States	Euro area	United States
Sep 2014	0.3	1.7	0.0	0.1
Oct 2014	0.4	1.7	-0.1	0.1
Nov 2014	0.3	1.3	-0.1	-0.3
Dec 2014	-0.2	0.8	-0.3	-0.3
Jan 2015	-0.6	-0.1	-0.3	-0.7
Feb 2015	-0.3	0.0	0.3	0.2
Mar 2015	-0.1	-0.1	0.2	0.2

¹ For the Euro area, HICP; for the United States, CPI-U.

Sources: National data.

5. The exchange rate channel

Exchange rates are the final, if unspoken, channel. A depreciation can boost net exports, and hence growth and employment, while lifting inflation through higher import prices.

The obvious problem with this tactic is that not all countries can depreciate their currencies at the same time. If they try, "currency wars" break out in the form of competitive monetary easing, a zero-sum game.

In sum, the effectiveness of the five channels by which ultra-low interest rates feed through to growth in the short term is uncertain. But what about the longer term?

II. Longer-term unintended consequences of ultra-low or negative interest rates

From a longer-term perspective, there are five main risks that may make the prolongation of ultra-low or negative nominal interest rates counterproductive. These can be summarised as: disincentive, distraction, distortion, disruption and disillusion.

1. Disincentive

The interest rate is the price of leverage in the economy. With interest rates at ultra-low levels, governments are under no pressure to reduce their debt. Negative rates actually encourage them to borrow more. And if government borrowing becomes a free lunch, there is a clear disincentive for fiscal discipline. As shown in Table 1, the euro zone public debt-to-GDP ratio has surged from 73.3% to an estimated 108.4% between 2007 and 2015, while net interest payments have fallen from 2.5% to 2.2% of GDP.

The disincentive to fiscal consolidation has two elements. First, ultra-low interest rates flatter the debt service ratio, painting a misleading picture of debt sustainability. Fiscal reforms can be put off indefinitely, undermining fiscal discipline. Second, ultra-low or negative interest rates and large-scale government bond purchases lead to an artificial compression of sovereign spreads, and a weakening of market discipline. The belief pervades financial markets and governments that central banks can engineer a miracle solution to the debt overhang problem. Yet ultra-low or negative rates are not the solution to the debt problem;⁹ rather they aggravate it, perpetuating the debt-driven growth model.¹⁰

Government debt and interest payments

As a percentage of GDP

Table 2

	Government debt		Government net debt interest payments	
	2007	2015	2007	2015
Euro area ¹	72.8	108.4	2.5	2.2
Germany	63.9	75.8	2.4	1.0
France	75.6	117.4	2.5	1.9
Italy	111.8	149.2	4.5	4.4
Belgium	93.6	119.5	3.5	2.6
United States	64.3	110.1	2.6	2.6
Japan	162.4	233.8	0.0	1.1
United Kingdom	45.3	97.6	1.7	2.6
Canada	70.4	94.3	0.6	0.2

¹ The 15 countries in the euro area that are OECD members.

Sources: OECD; BIS calculations.

⁹ H Hannoun, "Central banks and the global debt overhang", speech prepared for the 50th SEACEN Governors' Conference, Port Moresby, Papua New Guinea, 20 November 2014.

¹⁰ Another disincentive to fiscal consolidation is the emergence of dangerous proposals based on public debt monetisation by central banks as the solution to the euro zone debt overhang problem.

2. Distraction

When financial markets are fixated on monetary policy (“the only game in town”), they are distracted from the real economic policy challenges of raising real growth potential and productivity through structural reforms.

Post-crisis, many economies are still mired in the aftermath of a balance sheet recession. Unfortunately, in such conditions, monetary policy is less capable of contributing to a robust recovery than one might hope, since moribund balance sheets sap its effectiveness. And if financial institutions are weak, they are unlikely to transmit monetary impulses effectively via increased lending.

This suggests that the best way to lift an economy out of a balance sheet recession is to repair balance sheets quickly, together with structural reform. Monetary accommodation can buy time to implement this repair and reform, but it can’t substitute for them. If the time bought is not used to address structural impediments, prolonged accommodative monetary policy may turn out to be counterproductive by giving rise to a number of unintended effects. Indeed, too much accommodation can slow or distract from, and thus crowd out, repair and reform. Persistently high debt levels suggest that balance sheet repair is not yet completed. And the high unemployment rates and anaemic growth rates that persist in many advanced economies suggest that there are ongoing challenges for sectoral rebalancing and reallocation of resources, and that the only way to sustainably boost growth and demand is through structural reforms. The distraction effect explains why the low interest rate environment has coincided with weak investment in the real economy.

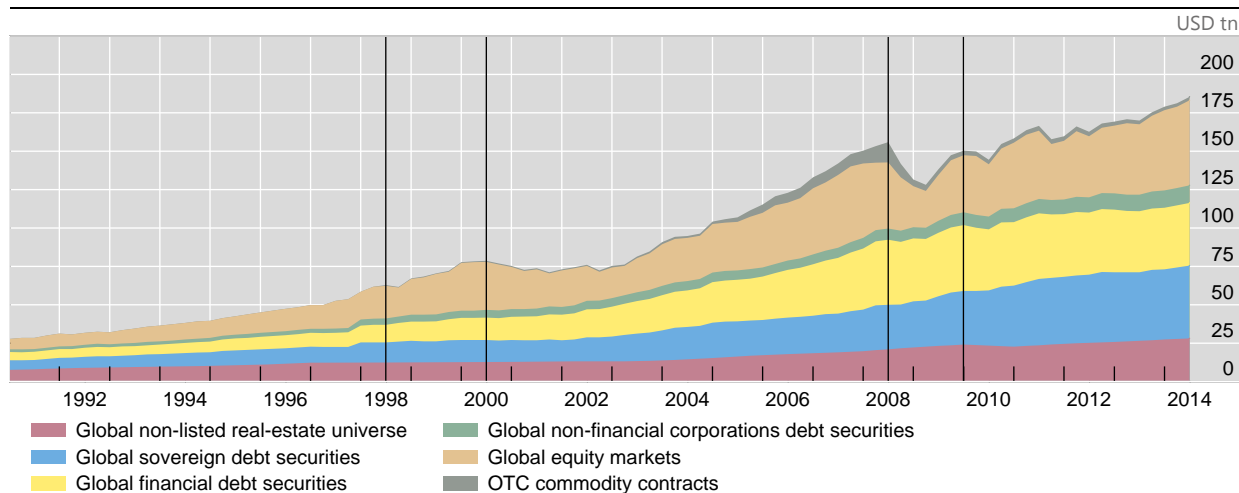
3. Distortion

When the decisions of central banks in advanced economies become the main driver for prices in global financial markets – whether exchange rates, stock prices, bond prices and spreads, commodities or housing prices – they supplant the normal role of economic fundamentals in setting market valuations. Asset prices become distorted. If the wealth effects are positive, some would ask if there is any reason to worry. But what happens when central banks stop buying bonds, or even start withdrawing their stimulus?

Bond market prices in the euro zone may no longer adequately reflect the risk inherent in record high debt levels. At the same time, equity prices are artificially inflated as investors are forced into increasingly risky assets. All this involves the risk of a major correction when confidence in inflated valuations is lost. The question is not whether this will happen again, but when. Of course, nobody can say when the next “Minsky moment”, a generalised loss of confidence in artificially inflated valuations, will occur. Yet there is no doubt that the probability and severity of another financial crisis is increased by the prolongation of ultra-low or negative rates.

Advocates of ultra-low or negative interest rates argue that macroprudential tools can be used to offset/mitigate the financial risks and distortions resulting from ultra-easy monetary policy. Unfortunately, this is not a realistic approach, for two reasons. First, it is better to think of macroprudential policy and monetary policy as complements, not substitutes.¹¹ Second, three major regulatory reforms that could to some extent mitigate the financial stability risks resulting from ultra-low interest rates are still under discussion. These are the calibration of the leverage ratio for banks in Basel III, the introduction of a Pillar 1 capital charge for the interest rate risk in the banking book, and the equally urgent elimination from EU bank regulation of the zero risk weight for sovereign exposures.

¹¹ H S Shin, Panel remarks at the IMF Spring Meeting, “Rethinking Macro Policy III: Down in the Trenches”, Washington DC, 15 April 2015.



The vertical lines indicate the period before the LTCM crisis (1998), the bursting of the dotcom bubble (2000), the collapse of Lehman Brothers (2008) and the euro area sovereign debt crisis (2009).

Source: CBRE; Datastream; Dealogic; national data; Towers Watson.

4. Disruption

Prolonged ultra-long interest rates cause disruptions in the business models of financial institutions (banks, insurance companies' pension funds, money market funds), implying substantial risks to financial stability.

Negative central bank deposit rates launch deposit-taking financial institutions into a new world in terms of their balance sheet management, confronting them with the dilemma of whether they should pass on negative deposit rates to their customers, or take the resulting hit on their intermediation margins. Ironically, retail banking which was seen as the most successful business model post crisis, is now most vulnerable.

If banks do not pass on the negative deposit rates to their customers, profits from maturity transformation will be negatively affected. Some banks reportedly have started to turn away large corporate customer deposits since they are unable to find safe assets offering a positive return that cover the cost of servicing clients.

Where banks have passed on negative rates to clients, demand for physical cash (banknotes) has increased. Indeed, negative rates raise a fundamental question for bank business models: why should people hold cash in their bank account if they are charged for doing so? The combination of negative deposit rates and digital innovation could foster financial disintermediation. All this might over time encourage the rise of alternative virtual currencies, undermining the foundations of the financial system as we know it today.

Anecdotal evidence is reported of difficulties arising from the fact that loan contracts linked to a benchmark floating rate may not specifically address the consequences of negative rates. In the absence of a "zero floor" clause in the contracts, banks may face the obligation to pay negative rates to borrowers.

Insurance companies' and pension funds business models are also put at risk by ultra-low rates. They may find themselves unable to meet fixed long-term obligations. Life insurance firms will be less

able to meet guaranteed returns. And the free fall in the discount rates inflates dramatically pension liabilities, eating deeply into the solvency of pension funds.

5. Disillusion

Since 2008, central banks are increasingly perceived as having the power to boost growth and revive the economy. The past six years have seen the emergence of a dominant belief among influential market commentators, market participants and mainstream academic circles that central banks should in exceptional circumstances conduct unlimited monetary interventions in bond markets. The concept, originated in the United States, is that the monetary authorities can in such circumstances use the money printing press to buy trillions of government bonds, “peg or cap”¹² the long-term interest rate at a given level, and continue these large-scale purchases until this produces the desired effects on employment, inflation and growth. As the promised results in terms of employment and growth do not and cannot materialise (not least because the interest rate is not a major determinant of the growth rate), the outcome could be disillusionment, with negative consequences for central banks’ credibility.

Confidence in the market economy could be eroded by the realisation that the apparently flattering level of the nominal-long term interest rate (0–0.5%) currently observed in the core euro zone countries (some of which run a debt-to-GDP ratio approaching 120%) is the result of massive public intervention rather than market mechanism.

The risk of disillusion also looms large for households in the new world of low returns. Ultra-low or negative interest rates will add to their worries by making it difficult for them to build up enough retirement savings. Thus households are more likely to increase their savings rate than to reduce it. Negative rates on deposited savings – effectively a form of taxation – will feed the debate on the “financial repression” of savers.

True, some households stand to gain from low mortgage rates, but this benefit will accrue only to those who can afford to buy a house. Moreover, the positive effect of low mortgage loan rates is largely offset by the increase in property prices fuelled by ultra-low interest rates.

There is also the question of inequality. Most households will lose from the dwindling returns on their savings without gaining anything from asset price inflation. They are not sophisticated asset managers who can realise capital gains in financial markets when long-term yields fall, and they will be affected by the low returns on their savings.

For all these reasons, the “new monetary orthodoxy” of imposing a tax on savers and providing a subsidy to borrowers is unlikely to result in higher global output or better living standards.

The winners of the ultra-low interest rate policy will be the most highly indebted economic agents, namely governments. The losers will be savers, pensioners and life insurance policy holders. But because households are both savers and consumers, we should also ask if the policy of ultra-low or negative interest rates is not eroding the confidence of households in the economy. That confidence may well be undermined by the insistent message from financial markets that deflation is imminent, as a way of justifying extreme monetary accommodation. As consumers, euro zone households stand to benefit from the current near-zero inflation rate. But they may not understand the message from policymakers that “inflation is too low” and needs to be lifted by 2 percentage points. The additional inflation resulting from the depreciating euro exchange rate means that the euro zone households will not receive the “oil dividend” in full.

¹² B Bernanke, “Deflation: Making Sure ‘It’ Doesn’t Happen Here”, www.federalreserve.gov/boarddocs/Speeches/2002/20021121/default.htm (accessed on 13 April 2015).

Conclusion

The policy of prolonged ultra-low, or negative, interest rates relies on transmission channels with uncertain effectiveness and potentially serious unintended consequences. For central banks, such policies raise the risk of financial dominance, exchange rate dominance and fiscal dominance – that is, the danger that monetary policy becomes subordinated to the demands of propping up financial markets, massaging the exchange rate downwards, and keeping public refinancing costs low in the face of unprecedented public debt burdens. These risks have been present before,¹³ but never so acutely as today.

Meanwhile, financial markets continue to set the stage for policy deliberations by fuelling expectations for continued, and additional, monetary accommodation. Behind the enthusiasm of market participants for extreme monetary policy, of course, lurks the fear that asset prices might collapse when the music of monetary easing stops. No doubt, this helps explain why the mainstream view in financial markets is that central banks should never surprise the markets and should act in a predictable way, which is interpreted to mean in line with market expectations. In this light, the Swiss National Bank's decision to discontinue the exchange rate cap on the Swiss franc was not only justified in itself, but also very important from the broader perspective of the central bank community. By this decision they reclaimed the right of central banks to surprise the market, and to reject any form of "financial dominance" over monetary policy. Only a timely exit from UMP will deliver overburdened central banks from the "three dominance risks".

In the last analysis, the debate on ultra-low policy rates comes down to a trade-off between the short and the long term. To quote Masaaki Shirakawa, former Governor of the Bank of Japan: "Monetary policy can bring forward future demand to today by engineering lower real interest rates. But, when tomorrow becomes today, the economy is faced with lower demand, which necessitates bringing forward demand from the day after tomorrow."¹⁴ Borrowing growth from the future is not sustainable.

¹³ H Hannoun, "Monetary policy in the crisis: testing the limits of monetary policy", speech at the 47th SEACEN Governors' conference, Seoul, Korea, 14 February 2012.

¹⁴ M Shirakawa, "Debate on deflation and the role of 'nominal anchor'", presentation at the Federal Reserve Bank of Minneapolis Inflation Expectations Symposium, 30 March 2015.