



BANK OF ENGLAND

Speech

Low interest rates: King Midas' golden touch?

Speech given by

Kristin Forbes, External MPC Member, Bank of England

The Institute of Economic Affairs, London

24 February 2015

I would like to thank Ida Hjortsoe, Tsveti Nenova and Lotte Adams for excellent assistance in preparing these remarks and the underlying research. Further thanks to Sandra Batten, Venetia Bell, Ben Broadbent, Richard Harrison, Clare Macallan, Marko Melolinn, David Miles, Ben Nelson, Marek Raczko, Jon Relleen, Minouche Shafik, Emma Sinclair, Martin Weale, Tomasz Wieladek, and Garry Young, for helpful input and comments. The views expressed are my own and do not necessarily reflect those of the Bank of England or other members of the Monetary Policy Committee.

All speeches are available online at www.bankofengland.co.uk/publications/Pages/speeches/default.aspx

When the legendary King Midas initially received the power to turn everything he touched into gold, he deemed it highly successful; the benefits of being able to create immense wealth with simply the touch of his finger far outweighed any costs. During the financial crisis, many central banks used less glamorous tools to create base money - sharp reductions in interest rates and quantitative easing. These measures played a critically important role in helping economies stabilize and recover.

King Midas soon realized, however, that this power of wealth creation came with unexpected side effects - from making his food inedible to turning his daughter into a lifeless statue. As these costs accumulated, King Midas eventually wished to give up his "golden touch" and return to normality. Similarly, is the current UK policy of near-zero interest rates beginning to generate substantial costs? Is there a point where any costs accumulate such that they outweigh the benefits? Could near-zero interest rates become less "golden"?

The UK recovery is now well in progress and self-sustaining - despite continual headwinds from abroad. The UK has grown at or above its potential growth rate for 5 quarters (based on BoE estimates and its backcast). The MPC forecasts that this at- or above-trend growth will continue over the next three years. Unemployment has fallen rapidly, from 8.4% about 3 years ago to 5.7% today, and is expected to continue to fall to reach its equilibrium rate within two years. Wage growth appears to finally be picking up, so that when combined with lower oil prices, families will, at long last, see their real earnings increase. Granted, there are still substantial challenges and deep scars from the recession. For example, output only surpassed its pre-crisis peak in the third quarter of 2013, and real wages have fallen by 7% since the end of 2007. But all in all, the pieces appear to be in place for the recovery to continue. The economy appears to largely be beginning to normalize after a severe and protracted crisis.

The one piece of the economy that has not yet started this process of normalization, however, is interest rates. Bank Rate - the main interest rate set by the Bank of England - remains at its emergency level of 0.5%. This near-zero interest rate made sense during the crisis and early stages of the faltering recovery. It continues to make sense today. But at what point will it no longer make sense? Low interest rates provide a number of benefits. For example, they make it easier for individuals, companies and governments to pay down debt. They make it more attractive for businesses to invest - stimulating production and job creation. They have helped allow the financial system to heal. They have played a key role in supporting the UK's recent recovery. Increases in interest rates - especially after being sustained at low levels for so long - can also involve risks.

But there are also costs and risks from keeping interest rates at emergency levels for a sustained period, especially as an economy returns to more normal functioning. Interest rates sustained at emergency levels could lead to costs such as: (1) inflationary pressures; (2) asset bubbles and financial vulnerabilities; (3) limited tools to respond to future challenges; (4) an inefficient allocation of resources and lower productivity;

(5) vulnerabilities in the structure of demand; and (6) higher inequality.¹ The remainder of my comments will discuss these costs and risks from a sustained period of near-zero interest rates. I will not dwell on the benefits of low rates, not because these are not important, but because they have been well discussed elsewhere.² I will conclude by evaluating how important these costs are today - and if the policy of near-zero interest rates is at risk of going the way of Midas' golden touch.

1. Inflationary pressures

In today's era of inflation targeting, the primary reason why central banks raise interest rates is to reduce inflationary pressures. This is also true in the United Kingdom, where the primary mandate for the Monetary Policy Committee is to steer inflation to its 2% target in the medium term. The MPC's preferred tool to achieve this target is through adjustments to Bank Rate. Could inflationary pressures provide a reason to raise interest rates today?

At first glance, with CPI inflation well below target at 0.3% in January, this may sound like a silly question. Although headline inflation was above target for 65 of the last 85 months since 2008, it is now well below this target. And not only is headline inflation low today, but it may fall lower over the next few months, with a good chance it will briefly be negative.

These headline numbers, however, are not the appropriate way to assess whether interest rates are set appropriately to meet a medium-term inflation target. The primary reasons for low inflation today are external factors that will fade quickly - primarily the sharp fall in oil and gas prices, as well as declines in food and other commodity prices, and the lagged effects of sterling's past appreciation. These factors will restrain headline inflation throughout this year, but then quickly drop out. Even the more lagged effects of sterling's appreciation will likely peak in the first part of this year and also gradually fade. Inflation will then most likely bounce back. Since interest rates take well over a year to be fully effective, they should be adjusted to respond to inflationary risks at that time horizon (when all of these effects have diminished) - rather than respond to today's inflation.

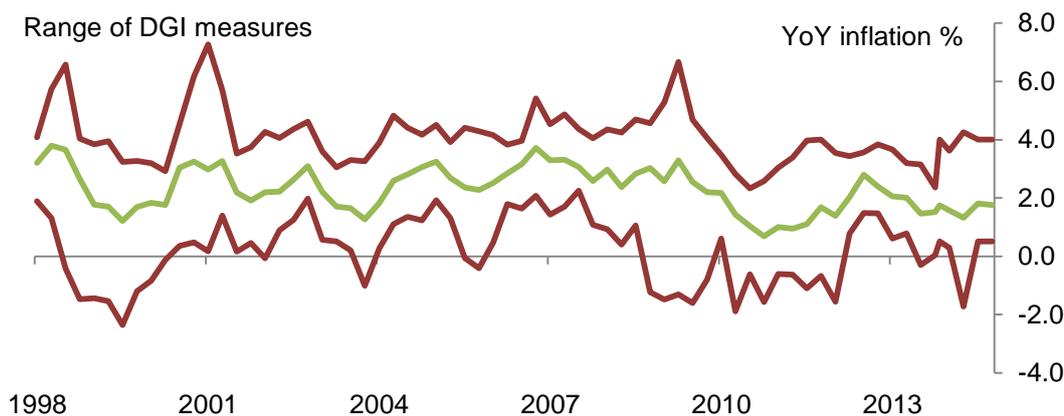
Therefore, to assess if today's low headline inflation rates could be masking future inflationary risks that could be worsened by a prolonged period of near-zero interest rates, it is useful to look at underlying inflationary pressures. To track this, I closely follow seven measures of "domestically-generated inflation" - different statistics that attempt to strip out the direct effects of external price pressures to assess underlying price momentum within the UK. Each of these measures has its strengths and weaknesses, so it is useful to

¹ These are obviously not the only potential costs. For example, the fall in gilt yields has contributed to a surge in deficits in defined benefit pension funds, which use yields to discount liabilities. For my comments today, however, I will focus on the costs and risks that most directly relate to the broader economy and the MPC's mandate.

² See Sentance (2009), from page 13; Dale (2009), pages 2-3; and Bean (2012), page 6.

track the mean and range of the indicators.³ This is shown in Figure 1 - with the mean in green and lowest and highest values of these indicators in red. The graph shows that, on average, domestically-generated inflationary pressures have been relatively stable over the past year. There is no evidence of underlying inflationary pressures picking up (suggesting no immediate inflation risk from low rates) but also no evidence of underlying inflation falling (suggesting no immediate risk from deflation). In fact, domestic inflationary pressures, although below the average of 2.6% from 1998 to 2007, are close to the 2% inflation target today.

Figure 1: Measures of domestically-generated inflation (DGI) for the UK



Source: ONS and Bank calculations.

Looking forward, low headline inflation and stable domestically-generated inflation are unlikely to persist if interest rates remain low. As discussed in February's *Inflation Report*, the output gap is closing and there is limited slack left in the economy. The rate of wage growth is increasing - with AWE total pay growth in the three months to December of 2.1% relative to a year earlier, but 5.4% (annualised) relative to 3-months earlier. Since wages are an important component of prices and their recent pick-up has not been matched with a corresponding increase in productivity, these wage increases will support a pickup in inflation. If this pickup is gradual, as expected, inflationary pressures should only build slowly over time, so that interest rates can be increased slowly and gradually as necessary.

There are certainly risks to this forecast. As I discussed in a speech in January, there are a number of risks that could cause inflation to pick up faster and necessitate a more rapid adjustment in interest rates than currently expected (such as a stronger global growth, permanently lower oil prices, faster pass-through, and a smaller labour supply).⁴ There are also risks that could cause inflation to remain suppressed for longer than expected - such as if deflationary expectations affect consumer behaviour, global growth slows, or risk aversion increases due to a breakdown in Greece's financing or other geopolitical events. The bottom line,

³ The seven indicators are: services inflation, import-adjusted inflation, unit labour costs, unit wage costs, gross value-added deflator excluding government goods and services, GDP deflator, and service-producer price inflation. See Forbes (2014) for details.

⁴ Forbes (2015).

however, is that the current policy of near-zero interest rates does not yet appear to be generating incipient inflationary pressures that could not be addressed in a timely fashion as needed.

2. Asset bubbles and financial instability

A second important potential cost from a sustained period of accommodative monetary policy is that it could create risks and inefficiencies in financial markets and the overall financial system over time. Of course, low rates can support financial stability by keeping debt burdens manageable, supporting economic growth, and allowing financial institutions to rebuild balance sheets, all of which were especially important after the financial crisis. But as rates continue to be low, especially during this period of recovery, the risks to the financial system could grow. More specifically, when interest rates are low, investors may “search for yield” and shift funds to riskier investments that are expected to earn a higher return - from equity markets to high-yield debt markets to emerging markets. This could drive up prices in these other markets and potentially create “bubbles”.⁵ This can not only lead to an inefficient allocation of capital, but leave certain investors with more risk than they appreciate. An adjustment in asset prices can bring about losses that are difficult to manage, especially if investments were supported by higher leverage possible due to low rates. If these losses were widespread across an economy, or affected systemically-important institutions, they could create substantial economic disruption.

This tendency to assume greater risk when interest rates are low for a sustained period not only occurs for investors, but also within banks, corporations, and broader credit markets. Studies have shown that during periods of monetary expansion, banks tend to soften lending standards and experience an increase in their assessed “riskiness”.⁶ There is evidence that the longer an expansion lasts, the greater these effects. Companies also take advantage of periods of low borrowing costs to increase debt issuance. If this occurs during a period of low default rates - as in the past few years - this can further compress borrowing spreads and lead to levels of debt issuance that may be difficult to support when interest rates normalize.⁷ There is a lengthy academic literature showing that low interest rates often foster credit booms, an inefficient allocation of capital, banking collapses, and financial crises.⁸

This series of risks to the financial system from a period of low interest rates should be taken seriously and carefully monitored. Recent regulatory reform, however, has attempted to reduce some of these risks. A key part of this reform in the UK was the creation of the Financial Policy Committee (FPC), which is charged with monitoring, identifying, and taking action to remove or reduce these types of systemic risks in order to

⁵ For evidence that expansionary monetary policy leads to higher asset prices, see Thorbecke (1997), Bernanke and Kuttner (2005), Gurkaynak et al. (2005), Rigobon and Sack (2004), and D’Amico and Farka (2011). More recently, however, Gali and Gambetti (2014) finds that while monetary policy easing leads to a short-run increase in stock prices, this may be followed by a persistent fall in stock prices in the medium term. For evidence that persistently low interest rates can generate a broader search-for-yield and cause investors to take on more risk, see Borio and Zhu (2012), Rajan (2005), and Stein (2013).

⁶ For evidence, see Dell’Arricia et al. (2013), Maddaloni and Peydro (2010), and Angeloni, Faia and Lo Duca (2010).

⁷ Bank for International Settlements (2014).

⁸ For a sample of this evidence, see Gourinchas, Valdés, and Landerretche (2001) and Schularik and Taylor (2009).

protect and enhance the resilience of the UK financial system.⁹ The FPC is currently alert to these risks. For example, their latest *Financial Stability Report* discusses how low interest rates could cause investors to “search for yield” and thereby misjudge underlying risks, which “can also be a potential source of financial instability.”¹⁰ The FPC also has a series of macroprudential tools that it can use, if merited, as the “first line of defence” against any such risks to financial stability.

But can these tools of the FPC adequately address the wide-ranging risks that could build in the financial system from a prolonged period of near-zero interest rates? My assessment is that, at the current time, the arrangement appears to be working well. When frothiness does appear in one market - such as in the housing market last year - the FPC showed that it will use its tools to mitigate perceived risks. By having the FPC on the front lines to monitor and take action against any such financial risks, the MPC has more freedom to focus on its primary target - price stability - when setting monetary policy. Financial stability risks are squarely on the minds of MPC members - as evidenced by their inclusion of financial stability concerns in their list of “knockout” measures in their forward guidance issued in February 2014.¹¹ Financial institutions and investors can certainly still suffer losses - as many painfully experienced over the last few months when they were on the wrong side of movements in oil and currency markets. But this is part of a healthy, well-functioning financial system - as long as individual losses do not become systemic.

But, going forward, will this arrangement with the FPC be enough?¹² If economic growth continues at or above trend, the financial system continues to heal, and the cost of borrowing in the UK remains near zero, these risks to the financial system could build. This risk is magnified by the even more accommodative monetary policy and low rates of return in other major economies - even negative interest rates in some regions. It is hard to believe, but a policy rate of 0.5% in the UK is actually higher than that in a number of other developed economies, possibly driving capital inflows to the UK. Low UK rates, combined with increased capital inflows, could support an even greater “search for yield” in the UK in the near future. In that case, if interest rates remain near zero, the FPC’s tools may not be sufficient to address financial stability concerns. As Jeremy Stein, a former Federal Reserve Governor, so lucidly stated: “while monetary policy may not be quite the right tool for the job, it has one important advantage relative to supervision and regulation - namely that it gets in all of the cracks. The one thing that a commercial bank, a broker-dealer, an offshore hedge fund, and a special purpose ABCP vehicle have in common is that they all face the same set of market interest rates.”¹³ At some point monetary policy may have a role to help fill in these “cracks”, but at the current juncture, the tools of the FPC seem sufficient.

⁹ See the Financial Services Act 2012.

¹⁰ *Financial Stability Report*, December 2014.

¹¹ On February 12, 2014, the MPC updated its forward guidance and stated that: “The Committee remains mindful that a prolonged period of low rates could lead to risks to financial stability. The financial stability knockout recognises that, in some circumstances, monetary policy has an important role to play in mitigating financial stability risks, but only as a last line of defence; that is, if the risks cannot be contained by the substantial range of mitigating policy actions available to the Financial Policy Committee, the Financial Conduct Authority and the Prudential Regulation Authority in a way consistent with their objectives.” While the knockouts no longer apply, the division of responsibilities between regulatory and monetary policy continues.

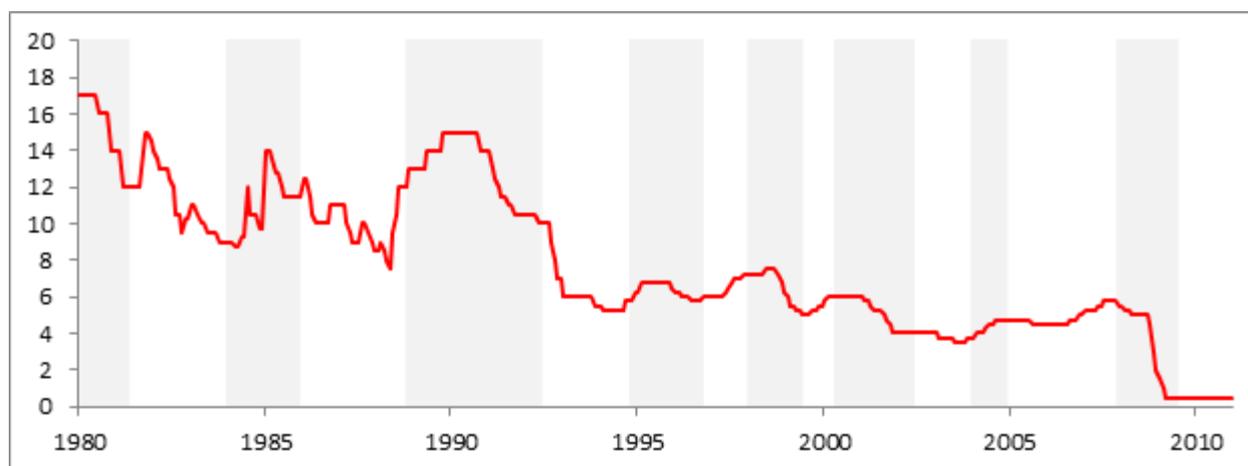
¹² For further discussion, see Shakir and Tong (2014).

¹³ Stein (2013). Research by Nelson et al. (2015), however, discusses and models some of the complications of using tighter monetary policy to address these types of broad financial stability risks.

3. Limited monetary policy tools in the future

A third potential cost of maintaining interest rates at near-zero levels is that there is less “firepower” to respond to future contingencies. There is no shortage of events that could cause growth to slow and inflation to fall in the future - and the first response is normally to reduce interest rates. Reductions in interest rates can be an important tool for stabilizing an economy.¹⁴ Figure 2 shows the popularity of this response for the UK since 1980. It graphs Bank Rate over time and denotes UK business-cycle slowdowns in gray shading.¹⁵ Interest rates have been on a long-term downward trend over time, but around this trend, have frequently been lowered sharply in response to business cycle slowdowns. For example, if an “easing cycle” is defined as the period during a slowdown from when rates are initially reduced until the last reduction, Appendix Table A.1 shows that interest rates have been lowered by an average of 3.8 percentage points over a period of 16 months during easing cycles in the UK. A similar calculation for the US, in Appendix Table A.2, shows that interest rates have been reduced by an even larger 4.6 percentage points over US easing cycles of a similar duration (with an average length of 18 months). The ability for central banks to respond to business cycle slowdowns through sharp reductions in rates, often over a protracted period of time, has been a key tool for stabilizing large economies.

Figure 2: UK business cycle slowdowns (in grey) and Bank Rate (in red)



Source: OECD and Bank of England.

If Bank Rate remains around its current level of 0.5%, however, there is obviously not room during the next recession to lower it to the degree that has typically occurred. Bank Rate could go a bit lower than 0.5% (as recently discussed in February’s *Inflation Report*). But rates could not be lowered by the average 3.8 percentage points that occurred during past easing cycles without creating severe distortions to the financial system and functioning of the economy. The MPC could instead use other tools to loosen monetary policy -

¹⁴ The level of interest rates relative to its equilibrium is the central measure of whether monetary policy is loose or tight, but there is evidence that changes in interest rates can also affect activity, see e.g. Cloyne and Hurtgen (2014).

¹⁵ As defined by the OECD.

such as guidance on future rate changes or quantitative easing. These tools are certainly viable, but it is harder to predict their impact and harder to assess their effectiveness than for changes in interest rates.

Obviously it would not make sense to raise interest rates today - and risk causing a recession - just to have rates high enough to be able to lower them to respond quickly to the next slowdown! Moreover, since the next move in interest rates is most likely to be up, this constraint of having only limited space to move interest rates lower will soon be less binding. But my main point is that maintaining rates at near-zero levels when this is not appropriate given the economic conditions does create an opportunity cost in terms of limiting the MPC's toolkit for unexpected contingencies in the future. The costs could also be even more subtle than limiting the MPC's ability to use its most popular tool to respond to a slowdown. For example, awareness of this lower bound may provide reason to be more cautious when tightening monetary policy (due to the more limited toolkit for future responses) or a reason to raise rates earlier (to get further from the lower bound), but then adjust at a slower subsequent rate.

4. Misallocation of resources and lower productivity growth

A fourth potential risk of a prolonged period of near-zero interest rates is that it could have detrimental effects on the supply side of the economy - especially on productivity. This is a subtle argument. Low interest rates generally support lending and improve access to credit - both of which should support investment. Over time, this should increase the potential supply of an economy and increase productivity. But - is there a chance that a prolonged period of near-zero interest rates is allowing less efficient companies to survive and curtailing the "creative destruction" that is critical to support productivity growth? Or even within existing, profitable companies - could a prolonged period of low borrowing costs reduce their incentive to carefully assess and evaluate investment projects - leading to a less efficient allocation of capital within companies? Any of these effects of near zero-interest rates could play a role in explaining the UK's unusually weak productivity growth since the crisis.

These types of concerns gained attention in Japan during the 1990s after the collapse of the Japanese real estate and stock market bubbles. During this period, many banks followed a policy of "forbearance", during which they continued to lend to companies that would otherwise have been insolvent. These unprofitable companies kept alive by lenient banks were often referred to by the colourful name of "zombies".¹⁶ Caballero et al (2008) show that zombie firms can lower an industry's average productivity, not only due to the direct effect of less productive firms continuing to operate, but also due to an indirect effect of deterring the entry of more productive firms. Allowing "zombies" to continue operating means that there is less capital and financing available for newer and potentially more efficient companies and projects. Bank of England

¹⁶ For evidence, see Peek and Rosengren (2005), which finds that firms in poorer financial health and affiliated companies were more likely to receive additional lending from Japanese banks in order to avoid recognising losses on bank balance sheets.

research has also shown that forbearance by industry is correlated with lower firm entry rates, which can contribute to lower productivity growth.¹⁷

Could similar effects be occurring in the UK today?¹⁸ Figure 3 shows that rates of liquidation are currently abnormally low. Liquidations spiked during the crisis, as usually occurs during recessions, but have stabilized over the past few years at levels well below their pre-crisis average. In fact, in September company liquidations as a share of all active companies fell to its lowest level since the series started in 1990.¹⁹ This is even unusual for a recovery.

Low bankruptcy rates, however, could be caused by a number of factors - each of which could have differing implications for the allocation of resources and productivity growth. Are bankruptcy rates low because banks are following the Japanese example of forbearance and allowing loss-making firms to stay afloat - which could be highly detrimental to productivity growth? Or were weaker companies purged during the crisis so that the lower bankruptcy rates simply reflect the stronger operating position of firms still existing today? And possibly contributing to this - are low interest rates allowing companies to appear profitable today due to their low debt servicing costs?

A team at the Bank of England looked at this for UK firms in 2013 and concluded that bank forbearance appeared to play some role during the crisis, especially for companies in the commercial and real estate sector, and that this made a small contribution to lower productivity growth at the time.²⁰ But the analysis also found that by 2013, forbearance did not appear to be playing an important role. Instead, some firms appeared to be kept alive through the low interest rate environment. This contributed to very low overall interest payments relative to pre-tax profits, as shown in Figure 3, helping keep some firms solvent.

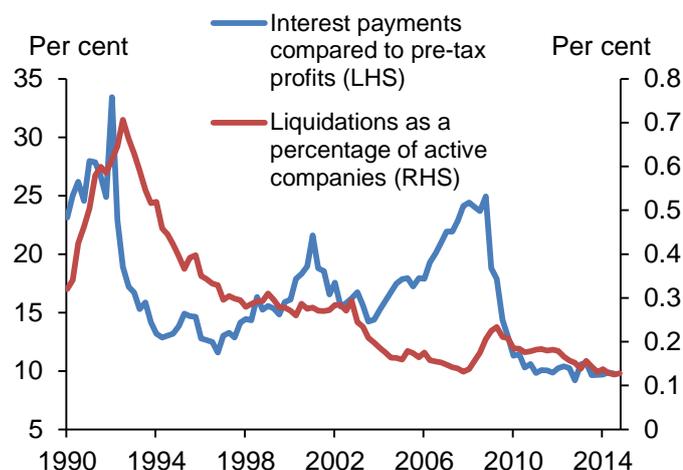
¹⁷ See chart 7 in Arrowsmith et al. (2013).

¹⁸ See Broadbent (2012) for a thoughtful discussion of how credit constraints and high borrowing costs may have negatively affected productivity growth and the allocation of resources during and immediately after the crisis.

¹⁹ The Enterprise Act 2002 included changes to the bankruptcy law, which complicates a comparison of these statistics across time.

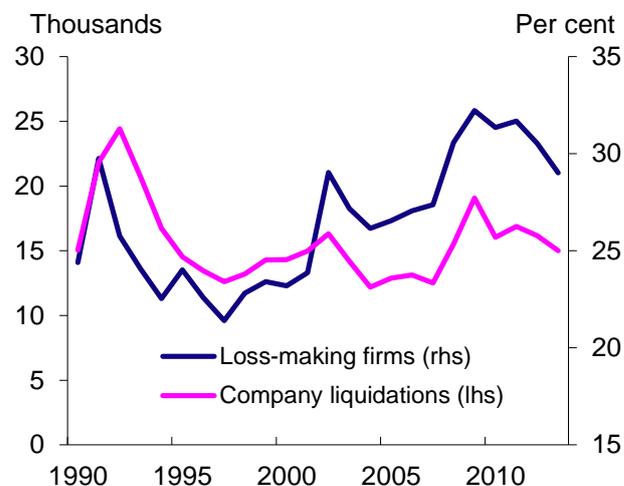
²⁰ Arrowsmith et al. (2014).

Figure 3: Company liquidations and interest payments



Source: ONS, Department of Business, Innovation and Skills and Bank calculations.

Figure 4: Company liquidations in England & Wales and loss-making companies



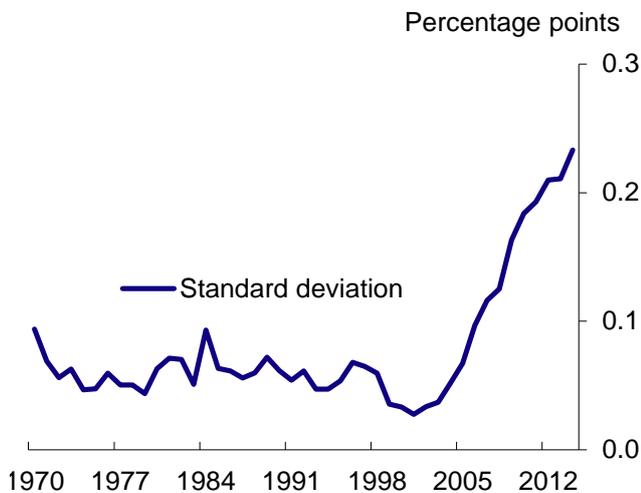
Source: Bureau van Dijk, Department of Business, Innovation and Skills and Bank calculations

A closer look at data on liquidations and estimates of loss-making companies, however, paints a slightly more nuanced picture. Figure 4 graphs company liquidations in just England and Wales and the number of loss-making companies as a percentage of all companies in the sample. This graph shows a similar decline in liquidations, but although the number of loss-making companies has come down recently, it is still substantially higher than before the crisis. It is possible that many of these loss-making companies are either still receiving some type of forbearance and/or are kept “alive” by the low level of interest rates.

It is no surprise that low interest rates will make it easier for companies to stay solvent than would occur with higher rates; in some sense this is part of the goal of lower rates - to support employment and growth. But does this have a meaningful impact on overall productivity? This is extremely difficult to test formally, but several pieces of evidence suggest that it may be playing a role. When resources are being allocated efficiently, it is more difficult for less efficient firms to continue operating, and more profitable firms will tend to have faster investment growth. Both of these relationships, however, are much weaker in the UK than before the crisis. For example, one firm-level study has shown that more profitable firms no longer have faster rates of investment growth (as they did before the crisis).²¹ And Figure 5 shows that there has been a substantial increase in the dispersion of firm productivity across sectors since the crisis. This is driven primarily by substantially less productive firms continuing to operate - another pattern which did not hold before the crisis.

²¹ Barnett et al. (2014).

Figure 5: Productivity dispersions across industries^(a)



Source: EUKlems, ONS and Bank calculations. (a) The chart shows the standard deviation of productivity shortfalls (relative to a trend calculated between 1970 and 2006) across 1-digit Standard Industrial Classification (SIC) for all sectors excluding Mining & Quarrying.

optimal, steady-state level. Recent BoE work has found tentative evidence of a “capital overhang”, an excess of capital above that judged optimal given current conditions. Usually any such capital overhang falls quickly during a recession as inefficient factories and plants are shut down and new investment slows. The slower reallocation of capital since the crisis could partly be due to low interest rates.

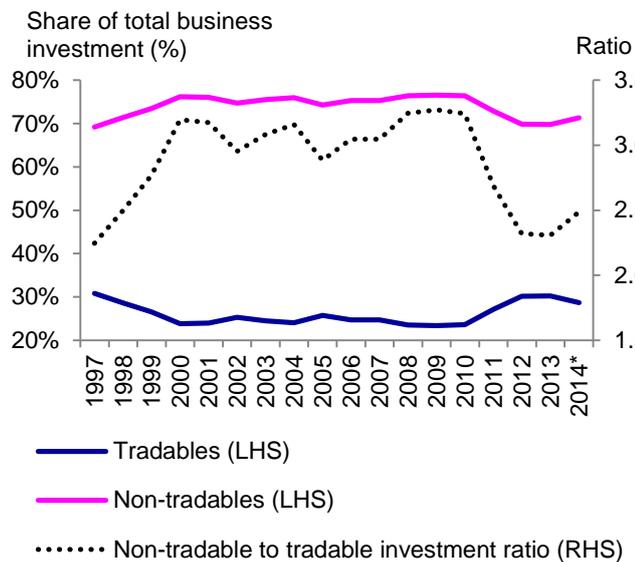
Finally, different sectors might have responded differently to the low interest rate environment. For example, those more reliant on debt and hence more sensitive to changes in Bank Rate might have seen their productivity fall more than usual if the low level of interest rates allowed them to continue operating without having to restructure their businesses. A recent project we’ve been working on suggests this does not appear to be true. If anything, the productivity of interest rate sensitive sectors has fallen less than one might have expected based on the pre-crisis relationship.²²

Both of these pieces of evidence suggest that resources are not being allocated as efficiently as they were before the crisis, and that less profitable firms are more easily able to invest and stay afloat. Of course, a number of factors apart from low interest rates might have led to this type of reduced efficiency in capital allocation - such as an impaired financial sector and increased uncertainty causing firms to be more cautious when making investment decisions. But given that these factors have faded since the crisis, while only low interest rates have persisted, it is increasingly likely that the low cost of funds is playing some role.

For further evidence on this capital misallocation, one could estimate the rate of “scrappage” during the crisis and the level of capital relative to its

²² This result is consistent with Riley et al. (2014).

Figure 6: Shares of tradable and non-tradable(a) industries in private sector business investment



Source: ONS and Bank calculations.

(a) Tradable industries include all production sectors excluding energy, while non-tradables include all services. Different sectoral splits (such as including energy as one of the tradable sectors or financial intermediation as a tradable rather than non-tradable industry) does not change the pattern of reallocation after the two large sterling moves in the sample.

*2014 investment is an estimate based on data for the first three quarters of the year.

On an even more positive note, there is evidence that some reallocation of resources across sectors is occurring in a pattern similar to historic performance. More specifically, one might have expected a reallocation of resources away from non-traded sectors and towards traded sectors following the sharp sterling depreciation in 2007/8 - which made the traded sector relatively more competitive. Figure 6 shows evidence of this increase in investment in the tradable sector and decrease in the non-tradable sector since the depreciation, as one would expect under efficient capital reallocation.²³ More specifically, investment in tradable sectors increased from around 24% to 30% of overall business investment, offsetting a fall in the share of non-tradable investment from roughly 76% to 70%. Or, as an alternate measure of this reallocation, consider the relative size of non-tradable versus tradable business investment (rather than looking at their shares in total investment separately). The black dotted line in Figure 6 shows that this ratio fell from 3.2 to 2.3 (or by about 30%) in the aftermath of the depreciation, consistent with a reallocation of resources to tradable sectors. Between 1997 and 2000 – after sterling appreciated by just over 20% – this ratio increased by about 38%.

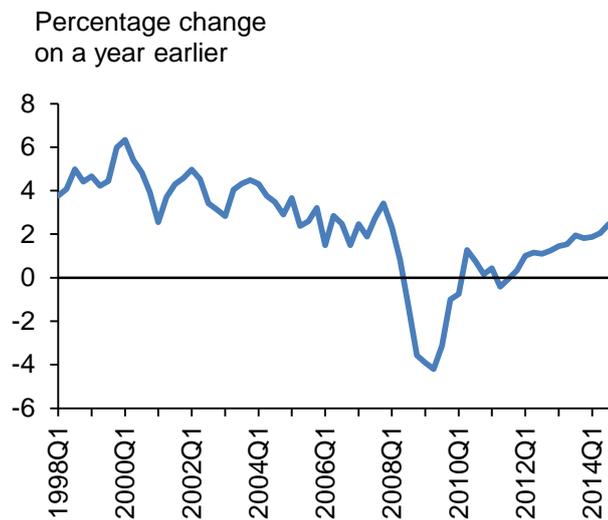
5. Increased vulnerabilities in the structure of demand

A fifth possible cost of low interest rates is that it could shift the sources of demand in ways which make underlying growth less balanced, less resilient, and less sustainable. This could occur through increases in consumption and debt, and decreases in savings and possibly the current account. Some of these effects of low interest rates on the sources of demand are not surprising and are important channels by which low interest rates are expected to stimulate growth. But if these shifts are too large - or vulnerabilities related to overconsumption, overborrowing, insufficient savings, or large current account deficits continue for too long - they could create economic challenges.

²³ The limited backrun of data means that a comparison is only possible with the period after the 1996/7 appreciation.

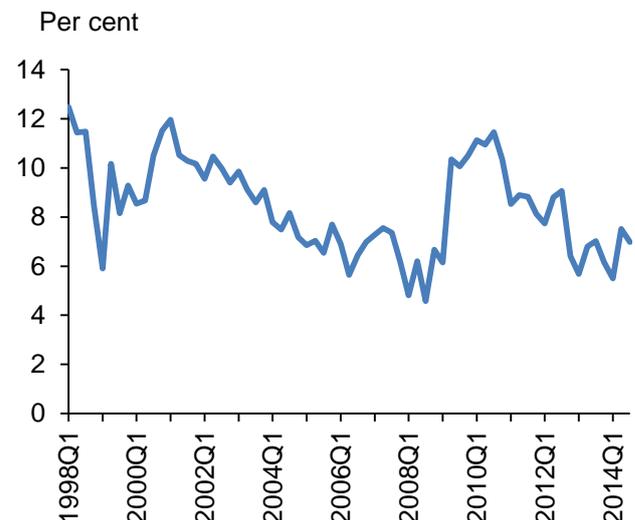
Let me begin with the effects of lower interest rates on consumers; lower rates reduce the return to saving and make it cheaper to borrow, creating an incentive for households to reduce savings, borrow more, and spend more today. Figures 7 and 8 show that households have increased consumption and reduced savings as expected. Consumer borrowing and debt levels, however, have moved in the opposite direction of what might be expected.²⁴ Figure 9 shows that instead of increasing borrowing in response to low rates, households have been reducing their overall debt to income levels. Furthermore, Figure 10 shows that households with different mortgage exposures are experiencing a stabilization or decline in their mortgage debt to income ratios. Consumers do not appear to be going on a borrowing binge - despite the lower borrowing costs that most, though not all, face.²⁵ This does not imply that an increase in interest rates - whenever that occurs - will not create challenges for some households in servicing existing debt. But the current policy of near-zero interest rates does not appear to be aggravating any such vulnerabilities.

Figure 7: Consumption annual growth



Source: ONS and Bank calculations.

Figure 8: Savings ratio

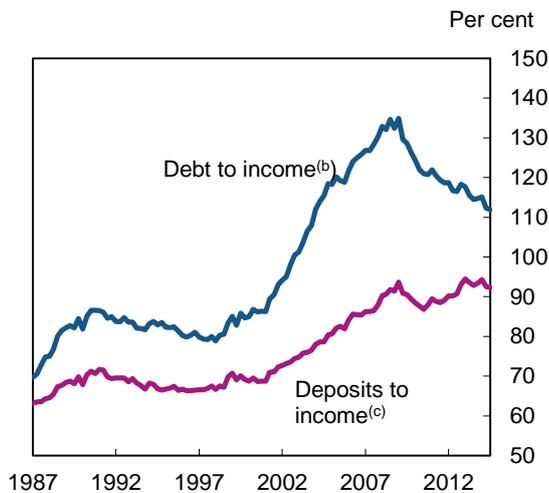


Source: ONS.

²⁴ More information on this data on UK borrowing is available in Anderson et al. (2014).

²⁵ Some individuals and sectors of the economy have not seen borrowing costs fall by as much as Bank Rate has fallen and may still have difficulty accessing credit.

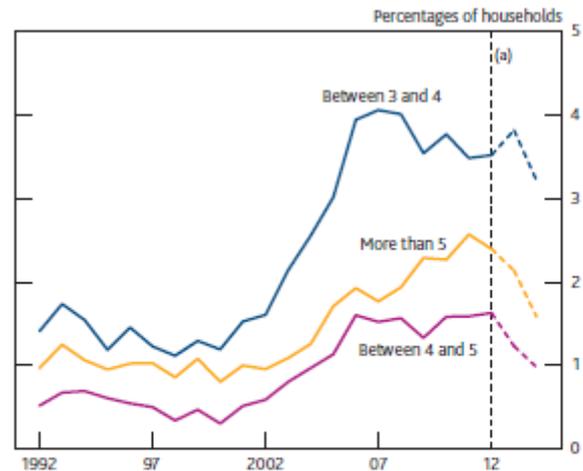
Figure 9: Household debt to income and deposits to income ratios^(a)



Source: ONS and Bank calculations.

- (a) Following methodological changes in the recent *Blue Book*, data used in the calculations are currently only published from 1997. Before 1997, the data are spliced with the previous vintage.
- (b) Household financial liabilities with UK monetary financial institutions (MFIs) as a percentage of annualised total household resources.
- (c) Deposits with UK MFIs as a percentage of annualised total household resources.

Figure 10: Distribution of mortgage debt to income ratios

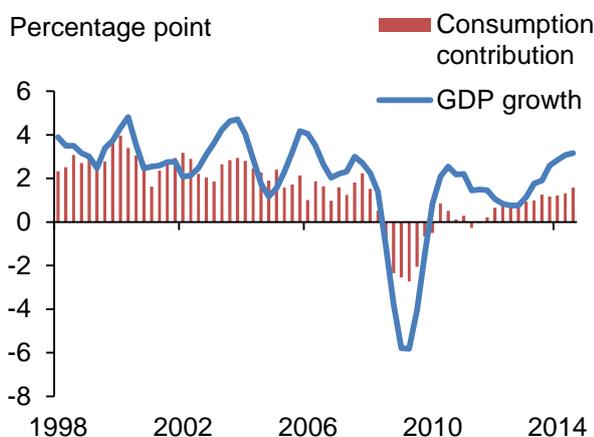


Sources: Living Costs and Food (LCF) Survey, NMG Consulting survey and Bank calculations.

- (a) Data up to 2012 are based on responses to the LCF Survey. Data for 2013 and 2014 are based on responses to the NMG survey and have been spliced onto the earlier LCF Survey data series. 2014 NMG data are from the H2 survey only.

Furthermore, even though consumption growth has been increasing and saving rates falling, neither appears to yet be at levels out of line with historic norms. More specifically, annual consumption growth averaged 2% over the past four quarters (2013Q4-2014Q3), lower than the average rate of 3.7% during the 10 years before the crisis (from 1998 through 2007). Although the savings ratio has fallen sharply from a peak of 11.5% during the crisis (in 2010Q3) to 7% today (2014Q3), this is not far lower than the 8.7% average over the same pre-crisis period. Another potential indication of whether consumption is out of line with historic

Figure 11: Annual contribution of consumption to GDP growth



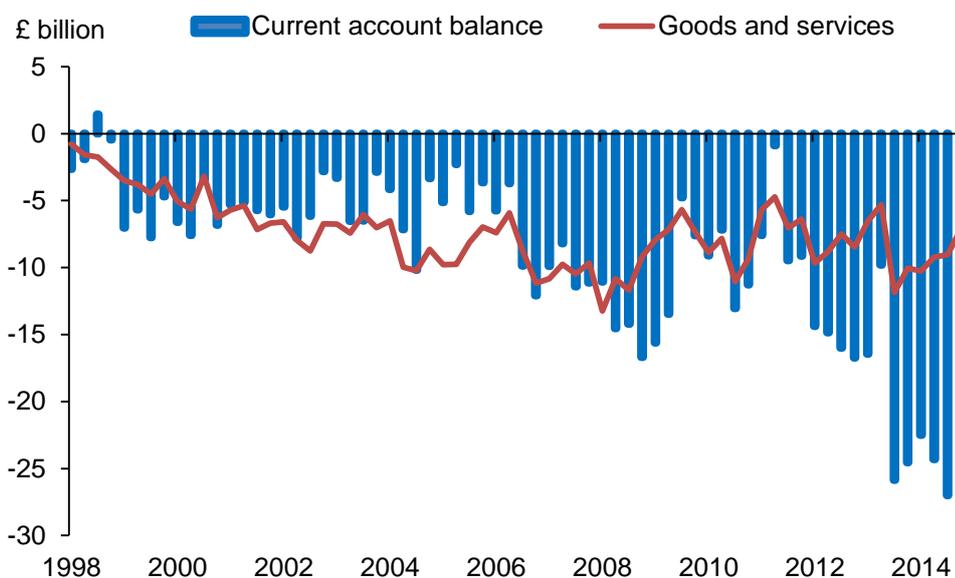
Source: ONS and Bank calculations.

trends is to examine its contribution to overall GDP growth, as shown in Figure 11. Consumption has been responsible for an average of 1.3 pp. of total growth over the last four quarters (2013Q4-2014Q3), lower than its 2.4 pp. average contribution over the pre-crisis window from 1998 to 2007. Therefore, although low interest rates appear to be supporting faster consumption growth and falling saving ratios, these indicators do not yet appear to be out of line with historic norms nor present immediate concerns. A continuation of these trends could become more of a concern in the future, however, if individuals are not saving enough for retirement or to manage future negative shocks.

In addition to increasing vulnerabilities in the consumption component of demand, low interest rates could also increase vulnerabilities in the external component of demand - the current account. The channels through which low interest rates affect the current account, however, are less straightforward. Lower interest rates tend to depreciate the exchange rate, making exports relatively cheaper and imports more expensive (expenditure switching) - decreasing a current account deficit. Lower interest rates, by increasing consumer spending as discussed above, generally lead to an increase in demand for imports from abroad (import absorption) - increasing a current account deficit. Lower interest rates will also cause a shift to higher-yielding foreign assets and a temporary increase in relative wealth, both of which will increase investment abroad to increase returns and smooth consumption over time (search-for-yield and risk sharing) - also decreasing a current account deficit.

Given these various channels, the net effect on the current account from these various effects of low interest rates is *a priori* indeterminate. While some empirical studies find that looser monetary policy generally leads to a reduction in a current account deficit,²⁶ some DSGE models (including the BoE's own COMPASS model) yield the opposite prediction. A closer look at the recent evolution of the current account could support multiple theories. As shown in Figure 12, the trade deficit has recently declined - which could relate to an expenditure-switching, risk-sharing, or search-for-yield effect. Net capital inflows have also increased sharply to over £25 billion (the counterpart of the current account deficit) - which could relate to an import absorption effect.

Figure 12: UK current account and trade balance



Source: ONS.

²⁶ See Hjortsoe, Weale and Wieladek (2015) and Lee and Chin (2006) for academic work on this topic. Also, in the short-term there may be a J-curve effect in which the current account first deteriorates before improving.

One major complication with this analysis and its interpretation, however, is that even though UK interest rates are near zero, they are still higher than in many other countries. This is especially true for our most important trade and financial partner - the euro zone - and other European economies. As a result, even though UK interest rates are near zero, some of the channels discussed above related to the current account could be reversed relative to certain countries with lower rates. Given these multifaceted challenges in understanding exactly how near-zero rates in the UK could be affecting the current account balance, it is impossible to assess its current impact with any confidence. Therefore, even though the UK current account is large and may grow to be an important vulnerability in the future, it is impossible to draw any conclusions about how the current policy of near-zero interest rates may be affecting any such vulnerability today.

6. Inequality

A final concern related to an extended period of ultra-accommodative monetary policy is how it might affect inequality. Changes in monetary policy always have distributional implications, but these concerns have recently received renewed attention - possible due to increased concerns about inequality more generally, or possibly because quantitative easing has more immediate and apparent distributional implications. How a sustained period of low interest rates impacts inequality, however, is far from clear cut.²⁷

There are some channels by which low interest rates - and especially quantitative easing - can aggravate inequality. As discussed above, lower interest rates tend to boost asset values. Recent episodes of quantitative easing have also appeared to increase asset prices - especially in equity markets - although the magnitude of this effect is hard to estimate precisely.²⁸ Holdings of financial assets are heavily skewed by age and income group, with close to 80% of gross financial assets of the household sector held by those over 45 years old (Figure 13) and 40% held by the top 5% of households (Figure 14). As discussed in a recent BoE report, these older and higher income groups will therefore see a bigger boost to their financial savings as a result of low interest rates and quantitative easing.²⁹

But, counteracting these effects, are also powerful channels by which lower interest rates (and quantitative easing) can reduce inequality and disproportionately harm older income groups. More specifically, one powerful effect of low rates is to reduce pension annuity rates, interest on savings, and other fixed-income payments. This disproportionately affects the older population (who relies on pensions and fixed income as a larger share of their income) and people in the middle of the income distribution (who have some savings, but less exposure to more sophisticated investments that can increase in value from lower rates). In addition to affecting the asset and earnings side of individual's balance sheets, there can also be distributional consequences on the liability and payment side. As interest rates and the cost of servicing debt fall,

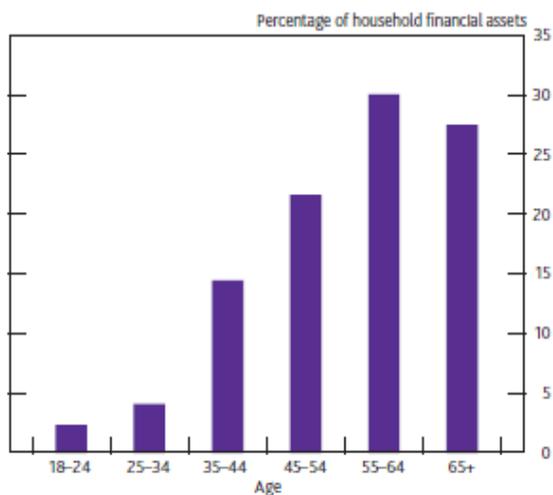
²⁷ See speech by Miles (2012).

²⁸ See Bank of England (2011).

²⁹ Bank of England (2012).

individuals with mortgages and other borrowing can benefit.³⁰ These benefits tend to disproportionately fall on the middle class - for which mortgage and debt payments are a higher share of total income - but can also benefit the wealthy if they have high levels of borrowing.

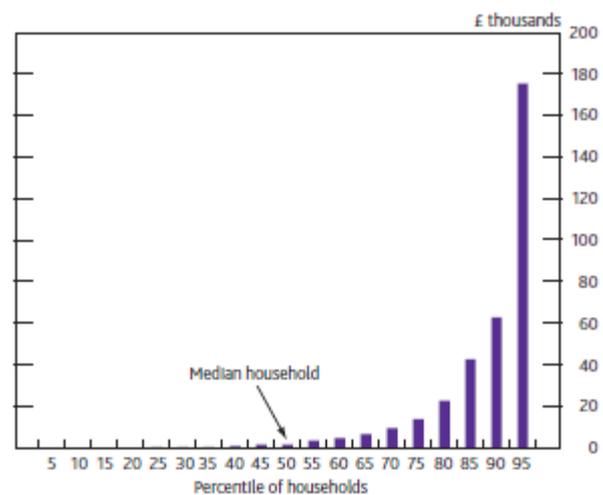
Figure 13: Distribution of household financial assets by age group^(a)



Sources: NMG Consulting survey 2011 and Bank calculations.

(a) Respondents to the NMG survey are asked: 'How much do you (or any member of your household) currently have in total, saved up in savings and investments? Include bank/building society savings accounts or bonds, stock and shares, ISAs, Child Trust Funds, NS&I account/bonds and premium bonds. Please exclude any pensions you may have.'

Figure 14: Distribution of household financial assets^(a)



Sources: NMG Consulting survey 2011 and Bank calculations.

(a) See footnote to Chart 3 for details of the question asked.

A final way in which low rates can affect inequality is even harder to measure, but also potentially powerful. If loose monetary policy stimulates job creation, this benefits the unemployed, who are disproportionately from the lower end of the income distribution.³¹ Much of the recent increase in UK employment has come from the long-term unemployed, those with lower skills, and less experience. This trend is expected to continue, and possibly accelerate, as short-term unemployment is at 2.8% (below its pre-crisis average of 3.2%). As a result, most net new jobs created will be filled by those who have been unemployed for some time, who are less experienced, and less skilled - all of whom are more likely to be from the lower part of the income distribution. Since wages from employment are the primary source of income for most of these individuals, this effect could be powerful in boosting their incomes and reducing inequality.

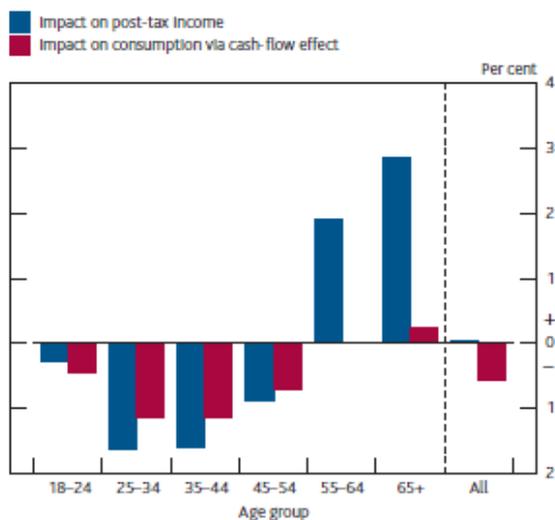
Tying all of these channels together, it is unclear what the net effect on inequality is of a prolonged period of extremely accommodative monetary policy. The various distributional effects act in different directions on different segments of the population. Most analyses find that an increase in interest rates disproportionately benefits retirees (from higher pension payments) and people at the higher end of the income distribution

³⁰ Cloyne et al (2015) find that mortgagors' consumption, income and consumption relative to income responds significantly more to monetary policy changes than outright homeowners'.

³¹ For evidence of these effects, see Heathcote, Perri, and Violante (2010) and Carpenter and Rogers (2004).

(who have higher net savings). For example, one careful analysis of these various distributional effects uses US micro-level data and finds that higher interest rates generally increase inequality across households in income, labour earnings, expenditures, and consumption.³² In contrast, analysis by the Bank of England,

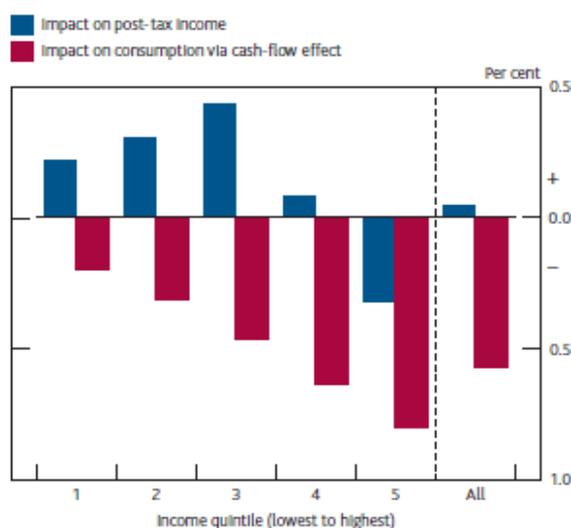
Figure 15: Impact of a 1 percentage point rise in rates on income and spending by age^(a)



Sources: NMG Consulting survey and Bank calculations.

(a) Calculated using the methodology explained in the footnote to Chart 12. Results for borrowers and savers within each age group are then aggregated.

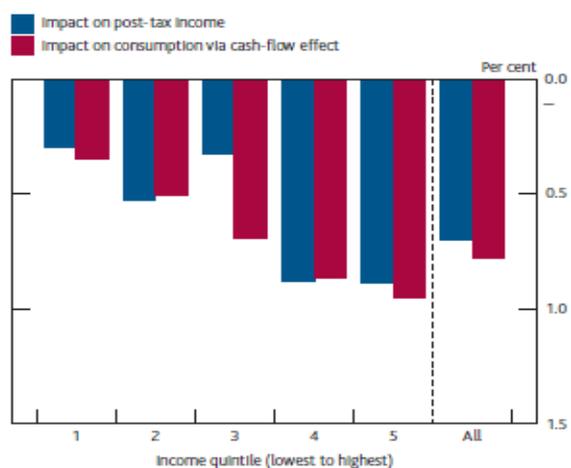
Figure 16: Impact of a 1 percentage point rise in rates on income and spending by income quintile^(a)



Sources: NMG Consulting survey and Bank calculations.

(a) Calculated using the methodology explained in the footnote to Chart 12. Results for borrowers and savers within each income quintile are then aggregated.

Figure 17: Impact of a 1 percentage point rise in rates on income and spending by income quintile excluding over 65s^(a)



Sources: NMG Consulting survey and Bank calculations.

(a) Calculated using the methodology explained in the footnote to Chart 12. Results for borrowers and savers within each income quintile are then aggregated.

which only captures some of these effects, finds that higher interest rates could lead to greater percentage falls in income and spending in the population aged 25 to 44 (Figure 15) and for the highest income quintiles (Figure 16), even after removing retirees (Figure 17).³³ These later effects could occur because of the high levels of borrowing for those in the top income groups (for which payments would increase). But unfortunately the study does not have information on how higher rates might affect other sources of income (such as from equities and other investments), so it cannot fully capture the effects of changes in interest rates on these different groups. Further analysis of these various effects of monetary policy on income distribution would be a fruitful – albeit challenging – area for future research.

³² See Coibon, Gorodnichenko, Kueng, and Silva (2012).

³³ See Anderson et al (2014).

7. Tying it all together: The midas touch?

Now, let me attempt to tie this all together and return to my key question. Are the costs of extremely accommodative monetary policy accumulating, so that the once “golden” policy of near-zero interest rates could become as unattractive as Midas’ touch?

Of the six main costs I’ve discussed, three appear to be moderate and manageable today, but could deteriorate quickly and therefore merit close monitoring. Loose monetary policy will eventually generate inflationary pressure, but headline inflation is currently contained largely due to external factors. Domestic inflation is fairly stable and does not yet show imminent signs of acceleration or deceleration. Loose monetary policy may eventually foster financial sector vulnerabilities and asset bubbles - for which the FPC is watching and ready to respond as the first line of defence if merited - with the MPC as backup. Accommodative monetary policy is supporting a sharp pickup in consumption growth and fall in the saving rate, but this does not yet appear to be outside of historic norms or be stimulating unhealthy borrowing or household debt accumulation. All of these trends merit close attention - as they could directly impact the MPC’s primary mandate (inflation) or its secondary mandates (economic and financial stability). Any could factor into a case to tighten monetary policy in the near future. But they do not currently appear to be generating a sufficient cost to merit a change in interest rates today.

Three of the other six costs may create some challenges, but it is extremely difficult to measure their direct relationship with near-zero interest rates with any confidence - besides being even further from the MPC’s mandate. More specifically, there is some evidence that extremely accommodative monetary policy could be contributing to slower productivity growth and inequality - but the evidence is partial, very mixed, and far from conclusive. There are also valid arguments why lower rates could have the opposite effects - such as raising productivity growth through spurring investment, or reducing inequality through spurring the creation of lower-skilled jobs. Interest rates near zero means that the available “tool kit” to sharply loosen monetary policy is more limited, but this cost has been alleviated somewhat by the ability to use non-conventional tools and lower rates below the current 0.5%. Raising interest rates today would be an extremely inefficient and ineffective tool for addressing concerns about productivity, inequality, or the MPC’s toolkit - even if it was possible to make the case that it was within our mandate.

Therefore, near-zero interest rates do not yet appear to have gone the way of Midas’ touch. The golden fruit, golden lambskin, and golden carriage that were the first objects of King Midas’ new gift still remain appreciated. But just as King Midas soon wished to end his magical touch in order to live a healthy and nourished life, the current policy of near-zero interest rates will need to end. Hopefully we will not wait until the costs are as high as when King Midas turned his daughter into gold. According to the legend, the river Pactolus, in which King Midas washed away his touch, was not destroyed, but instead was forever after known for its shimmering deposits of gold. Similarly, gradual increases in interest rates, if they occur in a timely fashion, should not derail the UK recovery, but instead support and strengthen it.

References

- Anderson, Gareth, Bunn, Philip, Pugh, Alice and Uluc, Arzu**, "The potential impact of higher interest rates on the household sector: evidence from the 2014 NMG Consulting survey", Bank of England Quarterly Bulletin 2014 Q4
- Angeloni, Ignazio, Faia, Ester and Lo Duca, Marco**, 2010. "Monetary Policy and Risk Taking", *Bruegel Working Paper 2010/00*
- Arrowsmith, Martin, Griffiths, Martin, Franklin, Jeremy, Wohlmann, Evan, Young, Garry, and Gregory, David**, "SME Forbearance and its Implications for Monetary and Financial Stability", Bank of England Quarterly Bulletin, 2013Q4
- Bank for International Settlements**, 84th Annual Report, June 2014
- Bank of England**, "The United Kingdom's quantitative easing policy: design, operation, and impact", Quarterly Bulletin 2011 Q3
- Bank of England**, "The distributional effects of asset purchases", Quarterly Bulletin 2012 Q3
- Bank of England**, "Forward Guidance", February 2014
- Bank of England**, "Inflation Report", February 2015
- Barnett, Alina, Broadbent, Ben, Chiu, Adrian, Franklin, Jeremy and Miller, Helen**, 2014. "Impaired capital reallocation and productivity", *National Institute Economic Review No. 228*
- Bean, Charlie**, "Quantitative easing and the economic outlook", Bank of England Speech, February 2012
- Bernanke, Ben and Kuttner, Kenneth**, 2005. "What Explains the Stock Market's Reaction to Federal Reserve Policy?", *Journal of Finance 60(3)*, pp. 1221-1257
- Borio, Claudio and Zhu, Haibin**, 2012. "Capital regulation, risk-taking and monetary policy: A missing link in the transmission mechanism?", *Journal of Financial Stability 8(4)*, pp. 236-251
- Broadbent, Ben**, "Productivity and the allocation of resources", Bank of England Speech, Sept 2012.
- Caballero, Ricardo J., Hoshi, Takeo and Kashyap, Anil K.**, 2008. "Zombie Lending and Depressed Restructuring in Japan." *American Economic Review 98(5)*, pp. 1943-77
- Carpenter, Seth B. and Rodgers, William M.**, 2004. "The Disparate Labor Market Impacts of Monetary Policy", *Journal of Policy Analysis and Management 23(4)*, 813-830
- Cloyne, James and Hurtgen, Patrick**, 2014. "The macroeconomic effects of monetary policy: a new measure for the United Kingdom", Bank of England Working Paper No. 493
- Cloyne, James, Ferreira, Clodomiro and Surico, Paolo**, 2015. "Housing Debt and the Transmission of Monetary Policy", unpublished mimeo
- Coibon, Olivier, Gorodnichenko, Yuriy, Kueng, Lorenz and Silvia, John**, 2012. "Innocent Bystanders? Monetary Policy and Inequality in the US", *NBER Working Papers 18170*
- Dale, Spencer**, "Inflation Targeting: Learning the Lessons from the Financial Crisis", Bank of England Speech, June 2009
- D'Amico, Stefania and Farka, Mira**, 2011. "The Fed and the Stock Market: An Identification based on Intraday Futures Data", *Journal of Business and Economic Statistics 29(1)*, pp. 126-137

Dell'Arricia, Giovanni, Laeven, Luc and Suarez, Gustavo, 2013. "Bank Leverage and Monetary Policy's Risk-Taking Channel: Evidence from the United States", *IMF Working Paper No. 13/143*

Financial Services Act 2012

Forbes, Kristin, "The Economic Impact of Sterling's recent moves: More than a Midsummer Night's Dream", Bank of England Speech, October 2014

Forbes, Kristin, "Risks Around the Forecast", Bank of England Speech, January 2015

Gali, Jordi and Gambetti, Luca, 2014. "The Effects of Monetary Policy on Stock Market Bubbles: Some Evidence," *NBER Working Papers 19981*

Gourinchas, Pierre-Olivier, Valdés, Rodrigo, and Landerretche, Oscar, 2001. "Lending Booms: Latin America and the World", *Economia*, 1(2), Spring 2001

Gurkaynak, Refet, Sack, Brian and Swanson, Eric, 2005. "Do Actions Speak Louder than Words? The Response of Asset Prices to Monetary Policy Actions and Statements" *International Journal of Central Banking* 1(1), pp. 55-93

Heathcote, Jonathan, Perri, Fabrizio, and Violante, Gianluca, 2010. "Unequal We Stand: An Empirical Analysis of Economic Inequality in the U.S., 1967-2006", *Review of Economic Dynamics* 13(1) 15-51

Hjortsoe, Ida, Weale, Martin and Wieladek, Tomasz, 2015. "Monetary Policy, Economic Liberalisation and the Current Account: Theory and Evidence", unpublished mimeo

Maddaloni, Angela and Peydro, Jose-Louis, 2010. "Bank Risk-Taking, Securitization, Supervision and Low Interest Rates. Evidence from the Euro Area and the US Lending Standards", *ECB Working Papers 1248*

Miles, David, "Asset Prices, Saving and the Wider Effects of Monetary Policy", Bank of England Speech, March 2012

Nelson, Benjamin, Pinter, Gabor, and Theodoridis, Konstantinos, 2015. "Do contractionary monetary policy shocks expand shadow banking?", Bank of England Working Paper 521.

Peek, Joe and Rosengren, Eric, 2005. "Unnatural Selection: Perverse Incentives and the Misallocation of Credit in Japan", *The American Economic Review* 95(4), pp. 1144-1166

Rajan, Raghuram, 2005. "Has Financial Development made the World Riskier?", *NBER Working Papers 11728*

Rigobon, Roberto and Sack, Brian, 2004. "The impact of monetary policy on asset prices", *Journal of Monetary Economics* 51(8), pp. 1553-1575

Riley, Rebecca, Rosazza-Bondibene, Chiara and Young, Garry, 2014. "The Financial Crisis, Bank Lending and UK Productivity: Sectoral and Firm-Level Evidence", *National Institute Economic Review*, No 228, May 2014, R17-34.

Schularick, Moritz and Taylor, Alan, 2009. "Credit Booms Gone Bust: Monetary Policy, Leverage Cycles and Financial Crises, 1870-2008", *NBER Working Paper No. 15512*

Sentance, Andrew, "Monetary Policy and the Current Recession", Bank of England Speech, February 2009

Shakir, Tamarah and Tong, Matthew, "The Interaction of the FPC and the MPC", Bank of England Quarterly Bulletin 2014Q4.

Stein, Jeremy, “Overheating in the Credit Markets: Origins, Measurement, and Policy Responses”, U.S. Federal Reserve Speech, February 2013

Thorbecke, Willem, 1997. “On Stock Market Returns and Monetary Policy”, *Journal of Finance* 52(2), pp. 635-654

APPENDIX

Table A1: Statistics on previous recessions and loosening cycles in the UK

Business cycle slowdowns:	Dates of loosening cycle:	Length in months of loosening cycle:	Bank rate at start of loosening cycle:	Bank rate at the end of loosening cycle:	Fall in Bank rate over loosening cycle:
Jan 1980 - April 1981	Jul 1980 - Mar 1981	9	17.00%	12.00%	5.00pp
Jan 1984 - Nov 1985	Mar 1985 - May 1986	15	14.00%	10.00%	4.00pp
Nov 1988 - May 1992	Oct 1990 - Feb 1994	41	15.00%	5.25%	9.75pp
Nov 1994 - Sep 1996	Dec 1995 - Jun 1996	7	6.75%	5.75%	1.00pp
Jan 1998 - April 1999	Oct 1998 - Jun 1999	9	7.50%	5.00%	2.50pp
May 2000 - May 2002	Feb 2001 - Jul 2003	30	6.00%	3.50%	2.50pp
Jan 2004 - Nov 2004	None	0			0.00pp
Dec 2007 - Jun 2009	Dec 2007 - Mar 2009	16	5.75%	0.50%	5.25pp
Average:		15.88			3.75pp
Average without 2004:		18.14	10.29%	6.92%	4.29pp

Source: OECD and Bank calculations.

Table A2: Statistics on previous recessions and loosening cycles in the US

Business cycle slowdowns:	Dates of easing cycle:	Length in months of easing cycle:	Federal Funds Rate at start of easing cycle:	Federal Funds Rate at the end of easing cycle:	Fall in Federal Funds Rate over easing cycle:
Mar 1980 - Aug 1981	Jul 1981 - Feb 1983	19	19.10%	8.51%	10.59pp
Feb 1983 - May 1984	Sep 1984 - Jun 1985	10	11.64%	7.53%	4.11pp
Nov 1990 - Dec 1993	Oct 1989 - Dec 1992	39	9.02%	2.92%	6.10pp
Jan 1995 - Dec 1995	Jul 1995 - Feb 1996	8	6.00%	5.22%	0.78pp
Nov 2000 - Aug 2003	Dec 2000 - Jul 2003	32	6.51%	1.01%	5.50pp
Jun 2004 - Oct 2005	None	0			0.00pp
Mar 2008 - Apr 2009	Aug 2007 - Dec 2008	17	5.26%	0.16%	5.10pp
Average:		17.86			4.59pp
Average without 2004:		20.83	9.59%	4.23%	5.36pp

Source: OECD and Bank calculations.