



BANK OF ENGLAND

Speech

The Spectre of Monetarism

Speech given by

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Roscoe Lecture

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Real incomes falling for a decade.

The legacy of a searing financial crisis weighing on confidence and growth.

The very nature of work disrupted by a technological revolution.

This was the middle of the 19th century.

Liverpool was in the midst of a golden age; its Custom House was the national Exchequer's biggest source of revenue.

And Karl Marx was scribbling in the British Library, warning of a spectre haunting Europe, the spectre of communism.

We meet today during the first lost decade since the 1860s.

In the wake of a global financial crisis.

And in the midst of a technological revolution that is once again changing the nature of work.

Substitute Northern Rock for Overend Gurney; Uber and machine learning for the Spinning Jenny and the steam engine; and Twitter for the telegraph; and you have dynamics that echo those of 150 years ago.

Then the villains were the capitalists. Should they today be the central bankers? Are their flights of fancy promoting stagnation and inequality? Does the spectre of monetarism haunt our economies?¹

These are serious charges, based on real anxieties. They merit sober, objective assessment.

This evening I want to discuss the role of monetary policy in this time of great disruption. But first I will focus on the underlying causes and consequences of weak real income growth and inequality across the advanced world.

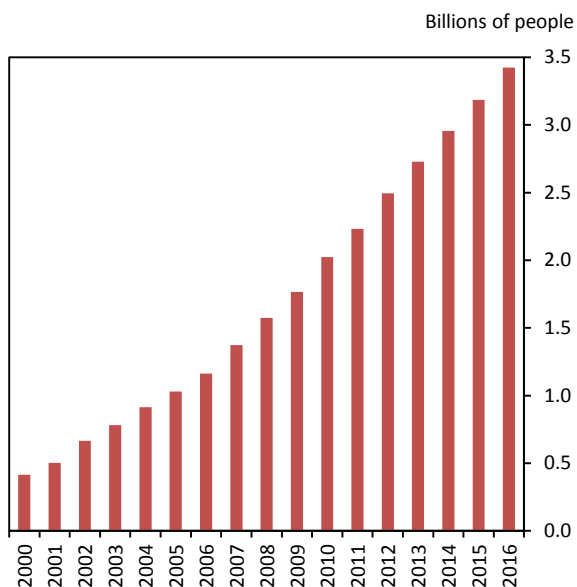
That's because any doctor knows that the importance of diagnosing the underlying causes of the patient's symptoms before administering the cure. Monetary policy has been keeping the patient alive, creating the possibility of a lasting cure through fiscal and structural operations. It has averted depression and helped advanced economies live to fight another day, so that measures to restore vitality can be taken.

II. The Great Disruption

During the last quarter century there have been a series of profound disruptions to the way we work, trade, consume and live. The fall of the Berlin Wall and the reforms initiated by Deng Xiaoping led to the integration of a third of humankind into the global labour force. Those workers are increasingly linked by global supply chains that have spread from goods to services. In parallel, an explosion of technological innovations has brought access, at the click of a virtual button, to the sum of human knowledge to three-and-a-half billion people (**Chart 1**).

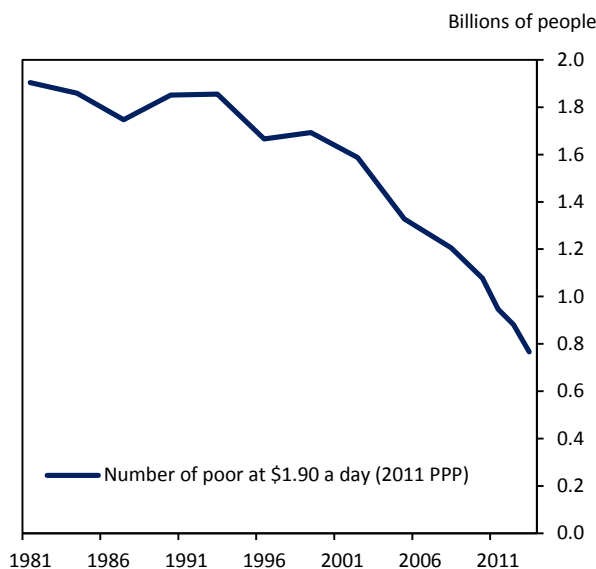
The deepening of the symbiotic relationship between global markets and technological progress has lifted more than a billion people out of poverty (**Chart 2**), while a series of technological advances have fundamentally enriched our lives.

Chart 1: 3 ½ billion people have internet access



Source: Internet Live Stats. An internet user is defined as an individual who can access the Internet at home, via any device type and connection. 2015 and 2016 are estimates.

Chart 2: 1 billion fewer people live on less than \$1.90 a day since the early 1980s



Source: World Bank. \$1.90 a day is the World Bank's current global poverty line.

Globally, since 1960, real per capita GDP has risen more than two-and-a-half times (**Chart 3**), average incomes have begun to converge,ⁱⁱ and life expectancy has increased by nearly two decades (**Chart 4**).

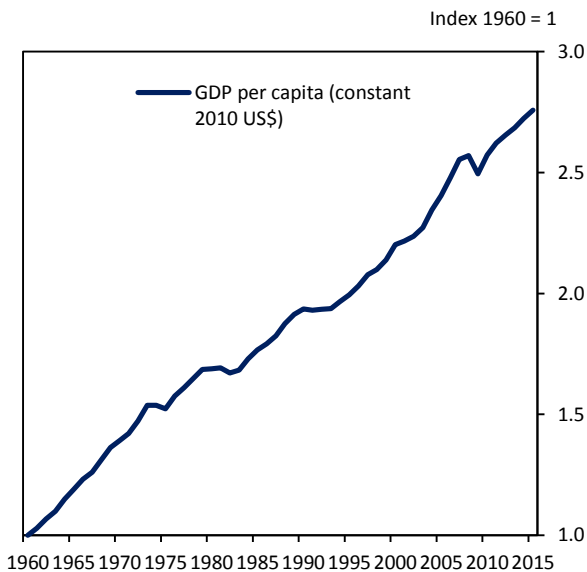
Despite such immense progress, many citizens in advanced economies are facing heightened uncertainty, lamenting a loss of control and losing trust in the system. To them, measures of aggregate progress bear little relation to their own experience. Rather than a new golden era, globalisation is associated with low wages, insecure employment, stateless corporations and striking inequalities.

These anxieties have been compounded by the twin crises of solvency and integrity at the heart of finance. When the financial crisis hit, the world's largest banks were shown to be operating in a "heads-I-win-tails-you-lose" bubble; widespread rigging of some core markets was exposed; and masters of the universe became minions. Few in positions of responsibility took theirs. Shareholders, taxpayers and citizens paid the heavy price.

As a consequence of all these developments, public support for open markets is under threat.

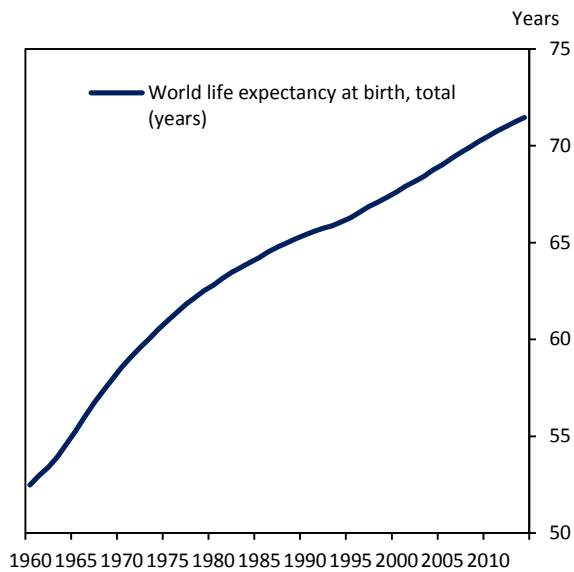
Turning our backs on open markets would be a tragedy, but it is a possibility. It can only be averted by confronting the underlying reasons for this risk upfront.

Chart 3: Real GDP per capita more than doubled since 1960



Source: World Bank

Chart 4: Life expectancy at birth up around two decades since 1960



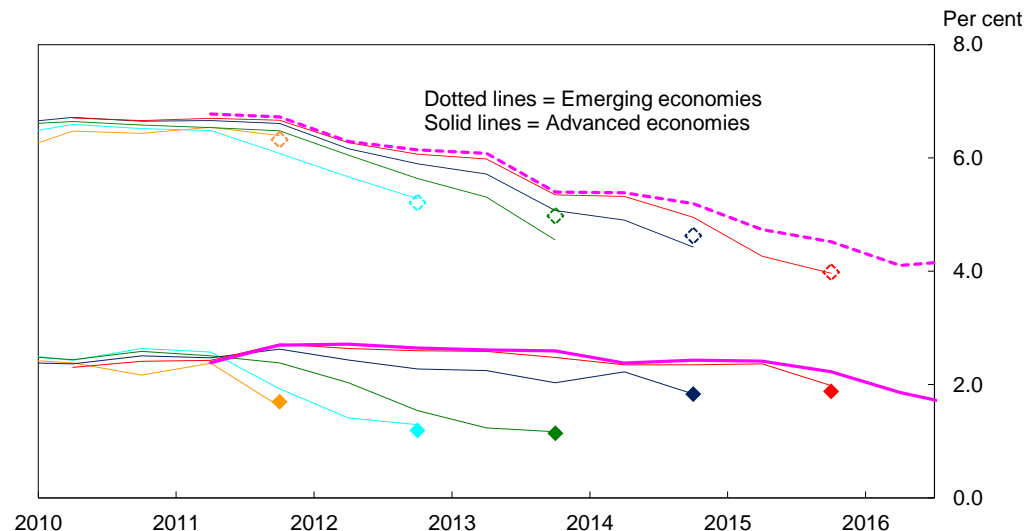
Source: World Bank

Real income growth has been meagre, compounding unequal distribution.

The cry for more inclusive growth starts with a crisis of growth itself. To put it mildly, the performance of the advanced economies over the past ten years has consistently disappointed (**Chart 5**).

Chart 5: Global growth serially disappointing

◆ Actual GDP growth — 2011 — 2012 — 2013 — 2014 — 2015 — 2016



Source: IMF *World Economic Outlook*. Each line shows how forecasts for a particular calendar year have evolved over time. The diamond shows the eventual outcome.

History tells us that recoveries from financial crisis are weak, with a typical hit of around 1 percentage point off per capita GDP growth each year for a decade.ⁱⁱⁱ Globally, we are tracking that pattern, with overall activity 9% below its pre-crisis trend nine years on.

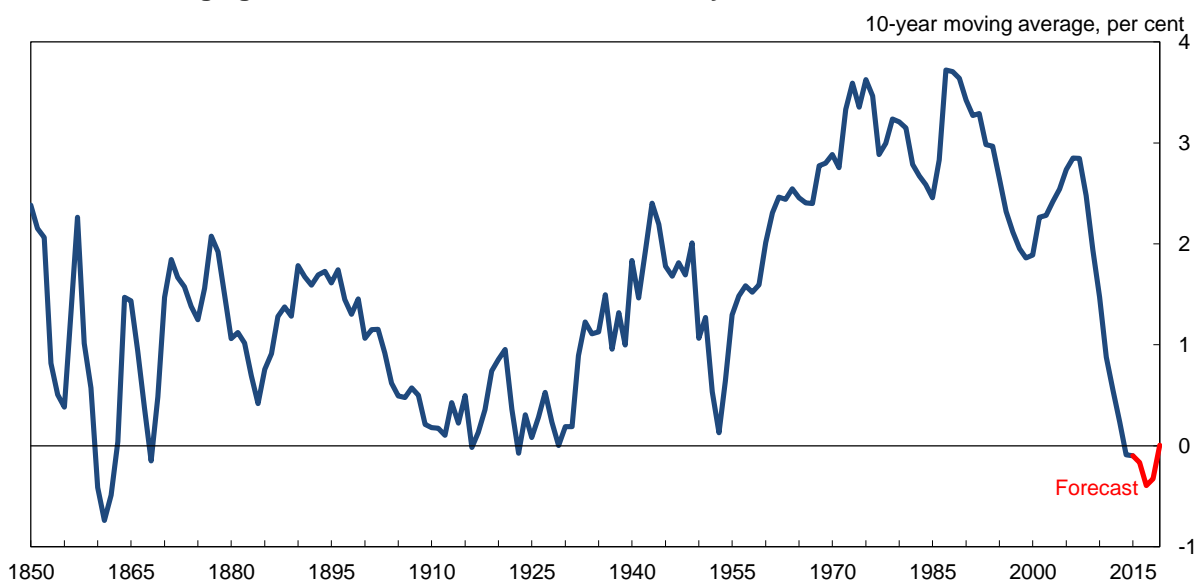
Even by these standards, however, advanced economy recoveries have been unusually tepid, with their current level of activity around 13% lower than the pre-crisis trend.

In the UK the shortfall, at 16%, is even worse. Over the past decade real earnings have grown at the slowest rate since the mid-19th Century (**Chart 6**).

Weak income growth has focused growing attention on its distribution. Inequalities which might have been tolerated during generalised prosperity are felt more acutely when economies stagnate.

In recent decades, as global inequality has fallen markedly, it has edged ever higher in most advanced economies. In Anglo-Saxon countries, the income share of the top 1% has risen notably since 1980. Today, in the US, the richest 1% of households receive 20% of all income.^{iv}

Chart 6: Real wage growth slowest since mid-19th Century



Source: Thomas, R. and Dimsdale, N. (2016) "Three Centuries of Data - Version 2.3", Bank of England, based on average weekly wages and the CPI; and November *Inflation Report*.

Such high income inequalities are dwarfed by staggering wealth inequalities. The proportion of the wealth held by the richest 1% of Americans increased from 25% in 1990 to 40% in 2012.^v Globally, the share of wealth held by the richest 1% in the world rose from one-third in 2000 to one-half in 2010.^{vi}

The picture in the UK is complex but in general suggests relatively stable but high levels of overall inequality, with sharper disparities emerging in recent times for the top 1%. When combined with low growth of incomes and entrenched intergenerational inequity, it is no wonder that many question their prospects.

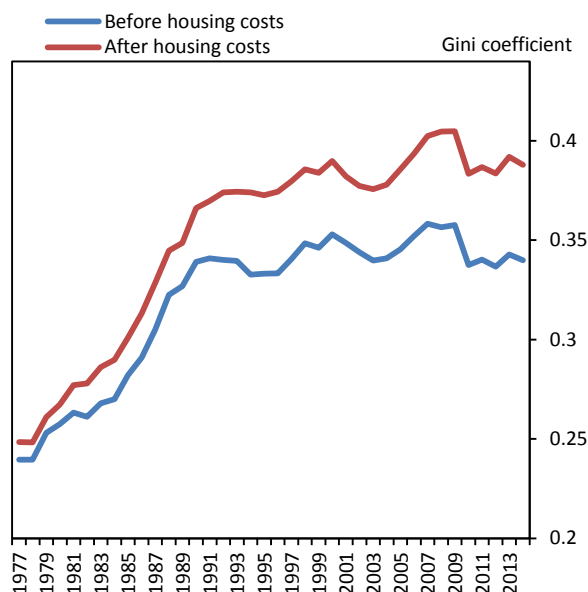
For example, a common measure of the distribution of income, the Gini coefficient, shows that inequality rose sharply during the 1980s and has more or less plateaued ever since (**Chart 7**). That suggests a large structural shift during the Thatcher era, followed by a more modest series of adjustments thereafter.

However, possibly because of the effects of globalisation, the income share of the top 1% tripled from 5% in the early 1980s to 15% by 2009, though it has fallen back somewhat since the crisis (**Chart 8**).

The distribution of wealth also appears to have been relatively flat since the mid-1990s (**Chart 9**), partly reflecting the pattern of home ownership,^{vii} though it is much less equal than for income, with the share of the richest 1% persistently high, at around 20%.^{viii}

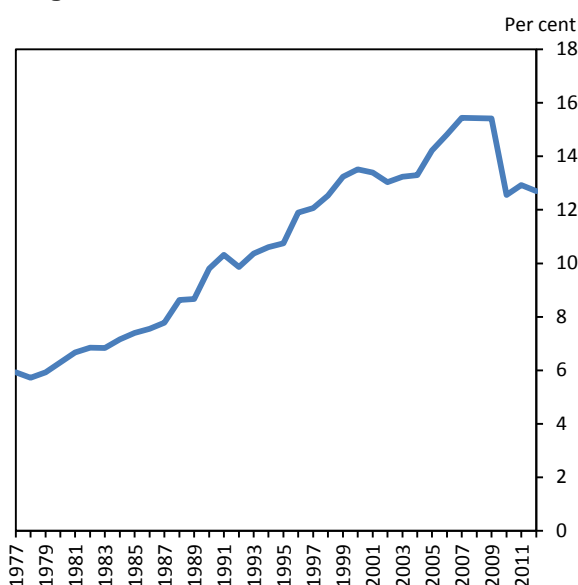
For both income and wealth, some of the most significant shifts have happened across generations. A typical millennial earned £8,000 less during their twenties than their predecessors.^{ix} Since 2007, those over 60 have seen their incomes rise at five times the rate of the population as a whole.^x Moreover, rising real house prices between the mid-1990s and the late 2000s has created a growing disparity between older home owners and younger renters (**Chart 10**).

Chart 7: Income inequality in the UK rose notably in the 1980s, then plateaued...



Source: "Living Standards, Poverty and Inequality in the UK: 2015", Institute for Fiscal Studies. The Gini coefficient shown is calculated over final income, which includes direct and indirect payments, benefits, and benefits in kind such as health and education.

Chart 8: ... yet the income share of the top 1% rose steadily to reach 15% in 2009, before falling back somewhat

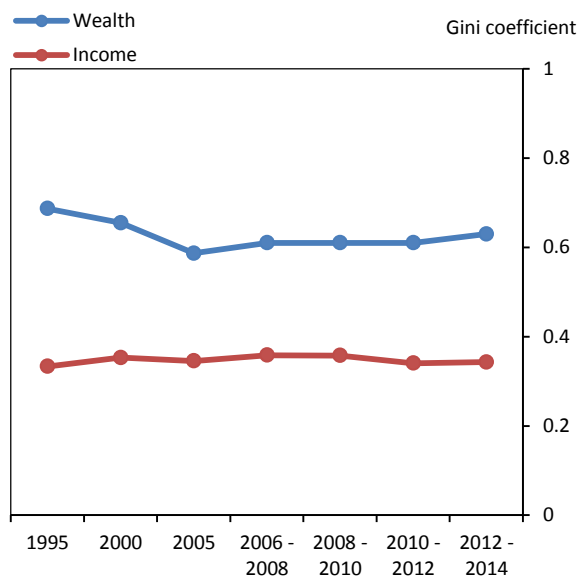


Source: World Wealth and income database and Atkinson, Anthony B. (2007). The Distribution of Top Incomes in the United Kingdom 1908-2000; in Atkinson, A. B. and Piketty, T. (editors) Top Incomes over the Twentieth Century. A Contrast Between Continental European and English-Speaking Countries, Oxford University Press, chapter 4.

At the same time as these intergenerational divides are emerging, evidence suggests that equality of opportunity in the UK remains disturbingly low,^{xi} potentially reinforcing cultural and economic divides.^{xii}

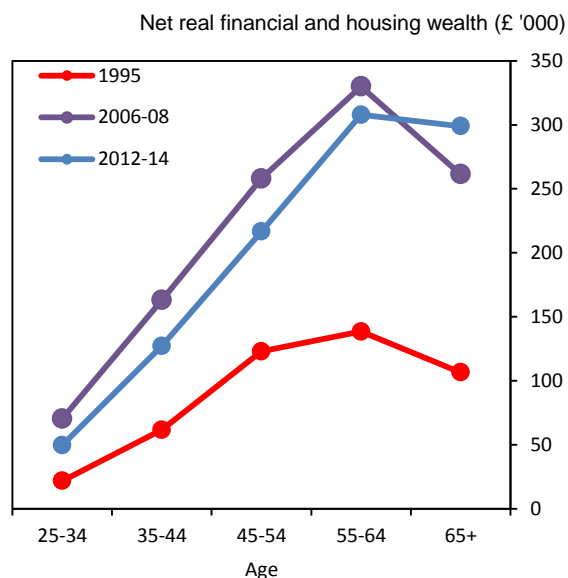
All of this matters. As the community groups here in Liverpool will attest, and more formal studies of people's happiness find, subjective well-being is significantly affected by perceptions of inequality and the sense of community.^{xiii}

Chart 9: Wealth inequality high but broadly flat since mid-1990s ...



Source: 1995-2005 is from the British Household Panel Survey (BHPS, Institute for Social and Economic Research); thereafter from the Wealth and Asset Survey (WAS, ONS). The BHPS wealth data exclude physical and pension wealth. Income Gini coefficient measures consistent with Chart 7.

Chart 10: ... yet it has sharply deteriorated across generations, largely driven by housing wealth



Source: 1995 is from the British Household Panel Survey (Institute for Social and Economic Research); thereafter the Wealth and Asset Survey (ONS). The BHPS measure is adjusted for the average wedge between the BHPS and WAS surveys to correspond to the WAS using overlapping periods.

III. The Way Forward

Given these developments, the challenge is how to manage and moderate the forces of innovation and integration which breed aggregate prosperity for the economy as a whole but which also foster isolation and detachment for substantial proportions of the population.

In the balance of my remarks, I will focus on three priorities for doing so.

First, economists must clearly acknowledge the challenges we face, including the realities of uneven gains from trade and technology.

Second, we must grow our economy by rebalancing the mix of monetary policy, fiscal policy and structural reforms.

Third, we need to move towards more inclusive growth where everyone has a stake in globalisation.

Most potential solutions lie outside the Bank's remit. But let me say a bit about each of these priorities concentrating on how the Bank of England can contribute to more inclusive growth via the impact of its policies on uncertainty, trust and inequality.

(a) Acknowledge current challenges and address them, wherever possible.

Given their recent experiences, it is not surprising that people are largely ignoring perils about the virtues of open markets and new technologies, and that they discount assertions that "they've never had it so good." A more inclusive growth requires frank talk about risks and concrete initiatives to help people adjust to new realities.

Trade and technology do not raise all boats

Consider the disconnect between economists and workers. The former have not been sufficiently upfront about the distributional consequences of rapid changes in technology and globalisation. Amongst economists, a belief in free trade is totemic.^{xiv} But, while trade makes countries better off, it does not raise all boats; in the clinical words of the economist, trade is not Pareto optimal.^{xv}

Rather, the benefits from trade are unequally spread across individuals and time. Consumers get lower prices and new product varieties, and, over time, benefit from the spur to innovate and higher productivity. Some workers, however, lose their jobs and the dignity of work, or see their "factor prices" – in plain English, wages – equalised downwards.

Such dynamics have been recognised by trade theory for over 75 years.^{xvi} And they are felt by those at either end of the great convergence. Survey evidence shows that 70% of Chinese workers believe that trade creates jobs and increases wages,^{xvii} US households think the opposite, and UK public opinion is equivocal.^{xviii}

People's attitudes towards trade shocks are being hardened by the effects of accelerating technological innovation. As my colleague Andy Haldane has explained, up to 15 million of the current jobs in Britain could be automated over time.^{xix}

The fundamental challenge is that, alongside its great benefits, every technological revolution mercilessly destroys jobs and livelihoods – and therefore identities – well before the new ones emerge. This was true of the eclipse of agriculture and cottage industry by the industrial revolution, the displacement of manufacturing by the service economy, and now the hollowing out of many of those middle-class services jobs through machine learning and global sourcing.

The combination of open markets and technology means that returns in a globalised world amplifies the rewards of the superstar and the lucky. Now may be the time of the famous or fortunate, but what of the frustrated and frightened?

Uncertainty is very high

From the rising spectre of global terrorism to intensifying geopolitical tensions and financial crises, for too long, for far too many people, the world seems to be getting riskier.

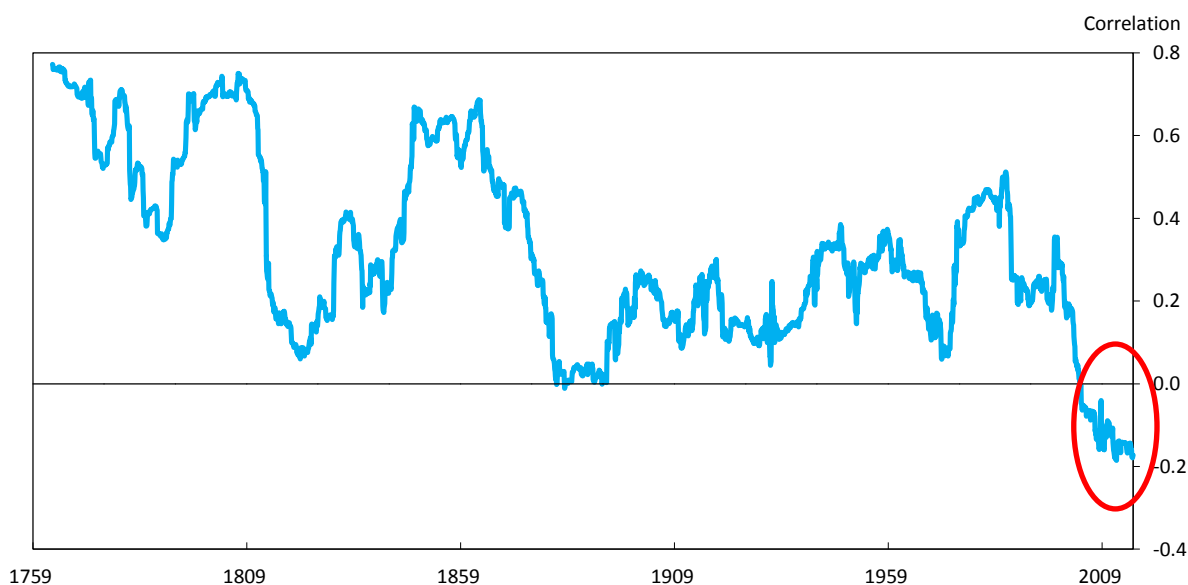
They are right. Currently, on average across Europe and the US, policy uncertainty is around 1.5 standard deviations above its historical average.^{xx} In the UK, we expect currently elevated levels of uncertainty to cut 7% from investment over the next three years and 1% from GDP.

Higher uncertainty has contributed to what psychologists call an *affect heuristic* amongst households, businesses and investors. Put simply, long after the original trigger becomes remote, perceptions endure, affecting risk perceptions and economic behaviour. Just like those who lived through the Great Depression, people appear more cautious about the future and more reluctant to take irreversible decisions.

That means less willingness to put capital to work and, ultimately, lower growth.

These dynamics are clearly visible in financial markets. As one illustration, for two-and-a-half centuries, the prices of government bonds and the prices of equities tended to move together: the typical bull market entails rising equity prices and falling bond yields, with the reverse in bear markets (**Chart 11**). Since the mid-2000s, however, this pattern has reversed and bond yields have tended to fall along with equity prices.^{xxi}

Chart 11: The UK bond-equity correlation has turned negative for the first time ever



Source: Thomas and Dimsdale (*ibid.*) and Bank calculations. Line shows ten-year trailing correlation of monthly returns on UK equities and consols. See also Roberts-Sklar, M. (2016), "250 years of the bond-equity correlation", Bank Underground, 20th October.

This unprecedented desire for safety has helped to drive down the equilibrium interest rate – the interest rate central banks must deliver in order to balance demand with supply and so achieve stable inflation. In this sense, low policy interest rates are not the caprice of central bankers, but rather the consequence of powerful global forces, including debt, demographics and distribution.^{xxii}

Those same forces are contributing to deficits in defined-benefit pensions. The value of these schemes' investments in equities and real estate are low relative to the level of interest rates because investors are valuing safety much more than they are expecting faster growth.

Said differently, since pensions are future claims on the economy, there isn't a parallel universe of higher interest rates, higher growth and equity prices, and lower pension deficits. That is, there isn't without real structural reform. Blaming monetary policy avoids these hard truths.

Speaking hard truths is part of how central banks can reinforce the foundations of more inclusive growth. The paradox is that one of our jobs is to reduce uncertainty by identifying risks.

This requires coming straight with the public as the Bank of England did around the EU referendum.

And it requires being clear about what we cannot do. Long-run prosperity is not in the gift of central bankers. It depends on a much wider set of initiatives of our elected representatives, and ultimately, on the actions of the private sector.

(b) Monetary Policy, Distribution and Equity

The second way central banks can promote inclusive growth is as part of a balanced mix of monetary, fiscal and structural policies.

Globally, this balance has been absent since the crisis, with disproportionate weight falling on monetary policy. What has that meant for growth and inequality?

Before answering, it is important to recognise two facts.

First, *by law*, monetary policy must target the national rate of consumer price inflation, while taking into account as a secondary consideration its impact on other important *macroeconomic* variables, such as growth, employment and financial stability. Monetary policy cannot target a particular region, industry or segment of the population.

Second, all monetary policy has distributional effects, but it is rightly the role of elected governments to take measures to offset them if they so choose.

In that context, has monetary policy worsened income distributions, made savers poorer, inflated asset prices, or exacerbated wealth inequalities?

I want to review these claims by examining the cold, hard facts around:

- the foundational contributions that monetary policy makes to the good of the people of the UK;
- how effective monetary policy has been in achieving *macroeconomic* outcomes since the crisis; and

- what have been the associated developments in the distribution of income and wealth - the *financial* outcomes - since extraordinary monetary policies were first implemented.

Reinforcing the foundations

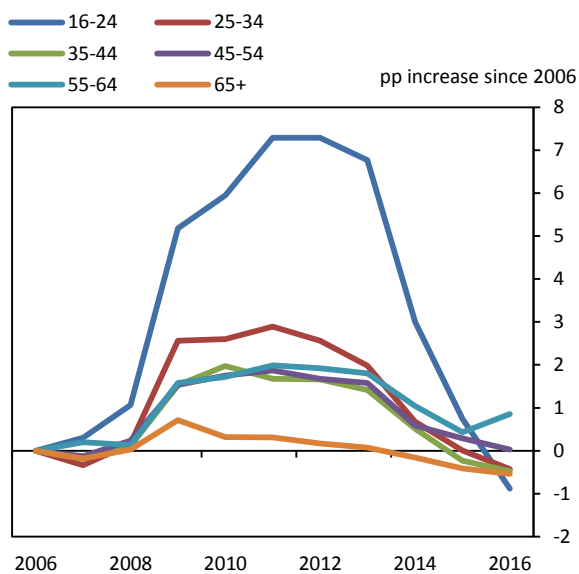
Any assessment of the distributional consequences of monetary policy must recognise that the negative effects of unemployment and volatile inflation fall predominantly on the poorest in society.

High inflation hurts those, typically the less well off, who don't hold equities or property or whose incomes are fixed in nominal terms.^{xxiii}

Equally, if inflation is too low in a highly indebted economy, dynamics can quickly develop that raise real interest rates, increase debt burdens, lower wages, and reduce growth. In extreme, these can morph into debt deflation, causing very high and persistent unemployment. Again, the highly indebted tend to be less well off, and to pay the heaviest price.

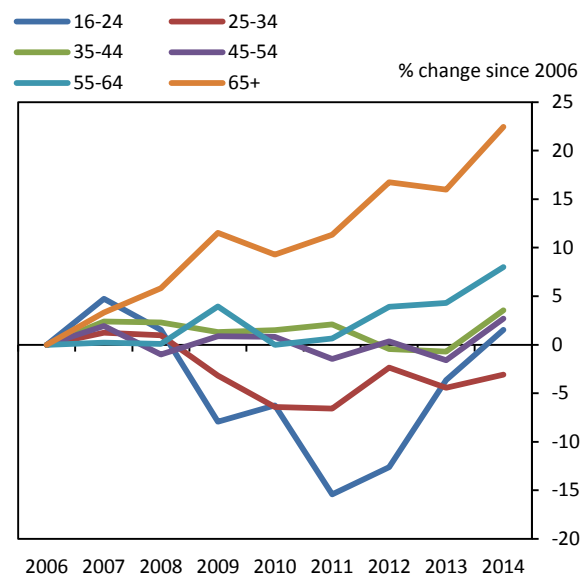
The happy medium is a monetary policy framework with a credible commitment to low, stable, predictable inflation over the medium term, as in the UK's tried and tested arrangements. These give monetary policy the space to respond to shocks, while avoiding the distortionary effects of volatile inflation.

Chart 12: Rise in unemployment among the young much larger than for older age cohorts...



Source: Labour Force Survey and Bank calculations.

Chart 13: ... and incomes of the young fell most sharply during the recession.



Source: Family Resources Survey and Bank calculations. Income deflated by the consumption deflator.

Experience shows that when the economy enters recession, the poorest are hit the hardest. During recessions the lower-skilled, lower paid people tend to lose their jobs first.^{xxiv}

And recessions disproportionately affect the young (**Chart 12**).^{xxv} Graduating in a recession is generally bad news for someone's earnings trajectory (**Chart 13**). The most advantaged graduates tend, over time, to recover, but the least advantaged can be permanently affected.^{xxvi}

In the extreme, prolonged recessions can lead to permanent labour market scarring, with potentially devastating effects on livelihoods, identities and communities.^{xxvii}

That is perhaps why studies of expansionary monetary actions generally find they reduce, not increase, inequality while raising demand and supporting jobs.^{xxviii} And there appears to be little evidence that stimulative monetary policy makes groups *worse off*.

Do these lessons apply to the most recent UK recession and recovery?

Macroeconomic Outcomes

The 2008 financial crisis threatened depression and mass unemployment, with the least well-off most exposed.

Fiscal policy quickly came under severe strain as tax revenues plunged, the costs of social benefits rose sharply, and the huge bills for too-big-to-fail banks came due. Since then sustained austerity has reduced the fiscal deficit from around 10% of GDP in 2010 to around 3 ½ % today. While necessary, this has, on average, subtracted around 1 percentage from demand each year. Over that time, structural policies have boosted participation in the labour market but have been unable to return productivity growth to anything resembling its historic average.

For seven years, in the face of severe headwinds to growth, monetary policy has been the only game in town.

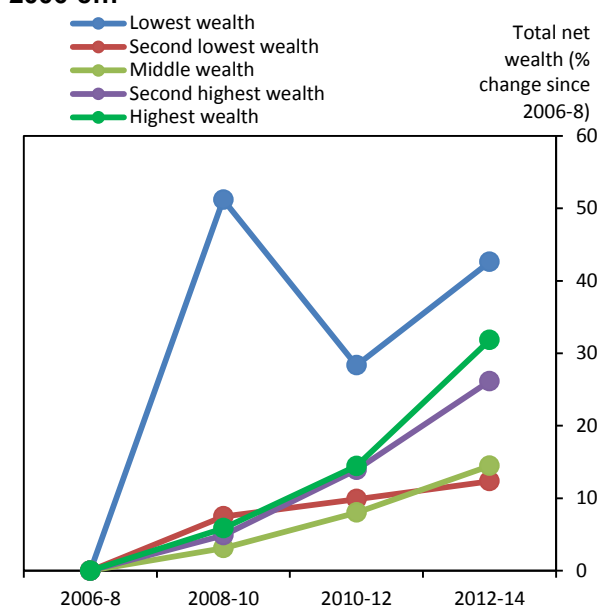
Its task has been complicated by those historically low equilibrium interest rates. These likely turned negative in the aftermath of the crisis, meaning that monetary policy has had to run very fast just to stand still. Given constraints on how low nominal interest rates could go, the Bank of England's MPC had to buy gilts – so-called Quantitative Easing (QE).

What if the MPC had not acted? Simulations using the Bank's main forecasting model suggest that the Bank's monetary policy measures raised the level of GDP by around 8% relative to trend and lowered unemployment by 4 percentage points at their peak. Without this action, real wages would have been 8% lower, or around £2,000 per worker per year, and 1.5 million more people would have been out of work. In short, monetary policy has been highly effective.

Financial outcomes

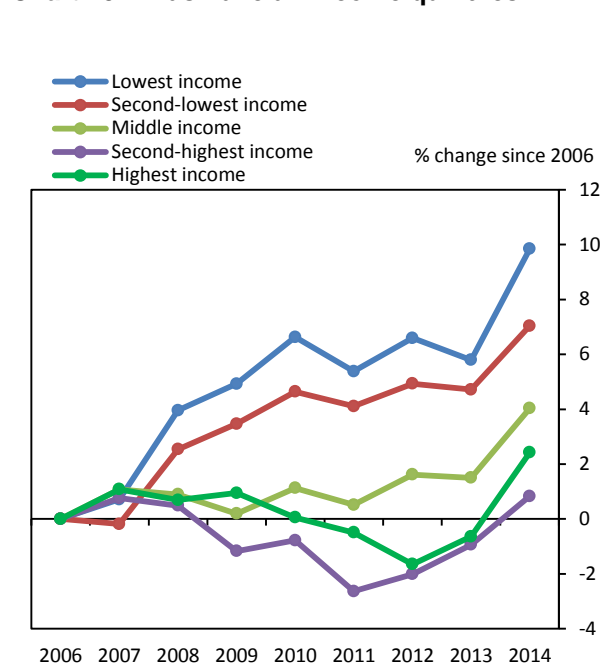
So monetary policy has been highly effective in doing its job, but what have been the distributional effects on financial outcomes? Has monetary policy robbed savers to pay borrowers? Has the MPC been Robin Hood in reverse? In a word, no.

Chart 14: The poorest have gained the most while all wealth quintiles have gained since 2006-8...



Source: Wealth and Assets Survey (WAS, ONS) and Bank Calculations.

Chart 15: ... as have all income quintiles



Source: Family Resources Survey (FRS) and Bank Calculations. Income deflated by the consumption deflator.

That's in part because, to a large extent, the thrifty saver and the rich asset holder are often one and the same. Just 2% of households have deposit holdings in excess of £5,000, few other financial assets, and don't own a home.^{xxix} So the vast majority of savers who might have lost some interest income from lower policy rates have stood to gain from increases in asset prices, particularly the recovery in house prices.

Alternatively, have low interest rates meant the rich get richer at the expense of everyone else? Again, no. The data show that the poorest 20% of households have actually seen the largest proportional increases in their net wealth since 2006 (**Chart 14**), though a large part of this is due to a painful deleveraging (via lower mortgage debt). The data do not support the idea that the period of low rates has benefitted the wealthiest *at the expense* of the least wealthy. In actual fact, all wealth quintiles have experienced wealth increases.

What about the distribution of income? Similar to wealth, and although *labour* income has been exceptionally weak, the total incomes of all groups have risen since 2006 (**Chart 15**). In fact, between 2006 and 2014, the bottom 20% saw the largest proportional gains, in spite of a devastating recession. Moreover, all groups have gained since 2009, when extraordinary monetary measures began to be implemented.

Monetary policy's record

In sum, the macro-financial record of the “only game in town” is clear. It is not just that mass unemployment and debt deflation have been avoided. Since rates were cut to their (then) lowest possible levels and QE was launched, 2 ½ million jobs have been created, the proportion of people in work has moved to its highest level on record, nominal wages are up 17%, real GDP is up 15%, and the UK has consistently been one of the strongest economies in the G7. All major income groups have seen their income and wealth rise.

Monetary policy has offset all of the headwinds to growth arising from private deleveraging, fiscal consolidation and subdued world growth (**Chart 16**). People haven't been made poorer; rather across major income and wealth categories, they are better off, and at the margin, surprisingly, income inequality has fallen a bit.¹

Why, then, doesn't it feel like the good old days? Because anxiety about the future has increased, because productivity hasn't recovered, and, as a consequence of the latter, because real wages are below where they were a decade ago – something that no-one alive today has experienced before.

The underlying reasons for the 16% shortfall of the UK's productive capacity, relative to trend, are poorly understood.

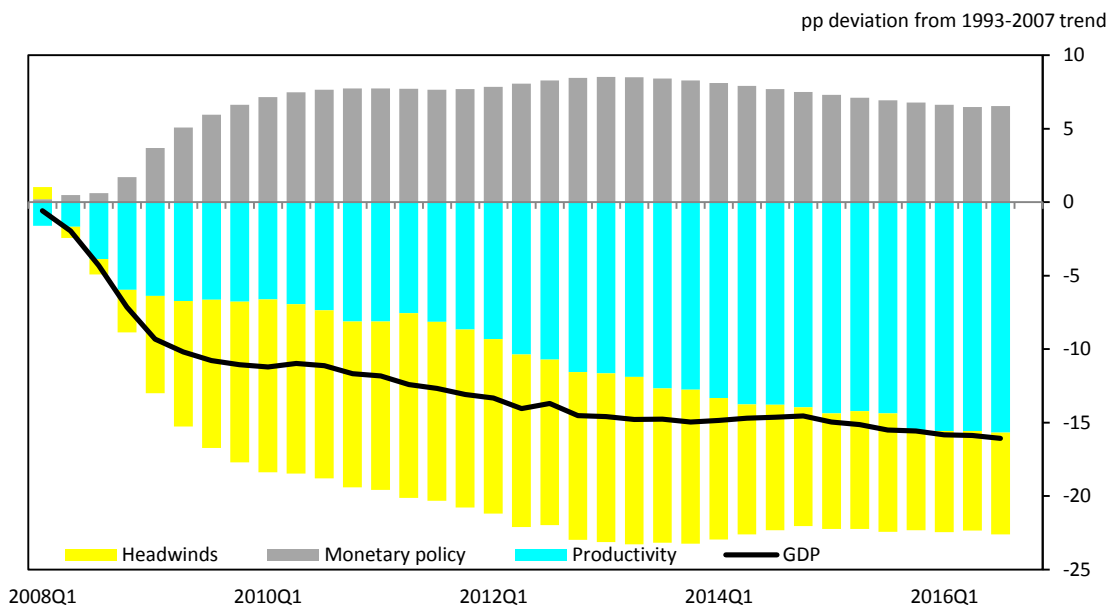
What is clear is that the influence of monetary policy on productivity is limited. It can only stabilise demand around the economy's potential; it cannot increase it.

Boosting the determinants of long-run prosperity is the job of government's structural, or supply-side policies. These government policies influence the economy's investment in education and skills; its capacity for research and development; the quality of its core institutions, such as the rule of law; the effectiveness of its regulatory environment; the flexibility of its labour market; the intensity of competition; and its openness to trade and investment.

The Chancellor's recent Autumn Statement begins the process of rebalancing policies. While fiscal prudence will continue, the degree of fiscal drag will be reduced somewhat, and major investments in the structural drivers of productivity including R&D and strategic infrastructure are planned.

¹ To be clear, these improvements in financial distributions were not explicit objectives but; but welcome outcomes.

Chart 16: Productivity explains all of the shortfall of GDP; while monetary policy has offset all headwinds to it



Source: Bank Calculations. "Headwinds" include the drags on demand from deleveraging, subdued world growth, fiscal consolidation, and uncertainty. The contribution of monetary policy is computed by considering the impact on demand of maintaining Bank Rate the level prevailing immediately before the crisis.

VI. Building a Globalisation that Works for All

To address the deeper causes of weak growth, higher inequality and rising insecurity requires a globalisation that works for all.

For the societies of free-trading, networked countries to prosper, they must first re-distribute some of the gains from trade and technology, and then re-skill and reconnect all of their citizens. By doing so, they can put individuals back in control.

For free trade to benefit all requires some redistribution. There are limits, of course, because of fiscal constraints at the macro level and the need to maintain incentives at the micro level. Fostering dependency on the state is no way to increase human agency, even though a safety net is needed to cushion shocks and smooth adjustment.

Redistribution and fairness also means turning back the tide of stateless corporations. As the Prime Minister recently stressed, companies must be rooted and pay tax somewhere: businesses operating across borders "have responsibilities ... in terms, for example, of payment of tax." They must recognise "the role that they play in local communities and the responsibilities that they have in any country they are operating in to abide by the rules."

That is why the G20's BEPS initiative, which will allow all countries to work together to implement measures against tax Base Erosion and Profit Shifting, is so important. And that is why the G20 might at least consider, as Larry Summers has suggested, a minimum tax on reported earnings to be paid somewhere.

Because technology and trade are constantly evolving and can lead to rapid shifts in production, the commitment to reskilling all workers must be continual.

In a job market subject to frequent, radical changes, people's prospects depend on direct and creative engagement with global markets. Lifelong learning, ever-greening skills and cooperative training will become more important than ever.

Finally, in an age where anyone can produce anything anywhere through 3-D printing, where anyone can broadcast their performance globally or sell to China whatever the size of their business, there is an opportunity for mass employment through mass creativity.

Technology platforms such as taskrabbit, Alibaba, etsy, and Sama can help give smaller-scale producers and service providers a direct stake in global markets. Smaller scale firms can by-pass big corporates and engage in a form of artisanal globalisation; a revolution that could bring cottage industry full circle.

Indeed, why doesn't the G20 pursue global free trade for Small and Medium Size Enterprises (SMEs)?^{xxx} Global free trade for SMEs, connected via such platforms, holds out the prospect of a more inclusive form of global commerce with the individual at its centre.

VII. Conclusion: The Current Monetary Policy Outlook

Allow me to conclude by touching on the current outlook for monetary policy.

The MPC indicated in the spring that the impact of a vote to leave the EU on inflation would be the product of its impact on demand, supply and the exchange rate. And it stressed then that the implications for monetary policy would not be automatic.

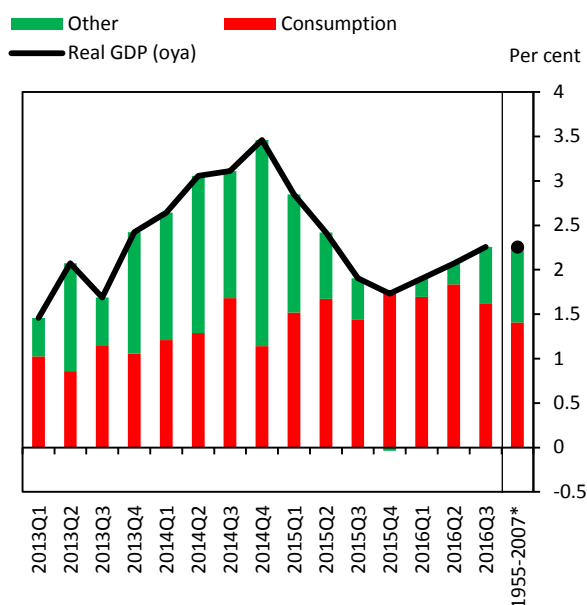
In August, the balance of these demand, supply, and exchange rate effects was consistent with the need for additional monetary policy stimulus.

These measures are working. For those looking to borrow, credit is widely available. For those with debts, the cost is cheaper. Neither solely due nor totally unrelated to the actions the MPC took in August, growth appears to have been materially better than we had expected in the summer.

Households appear to be looking through Brexit-related uncertainties at present. For them, signs of an economic slowdown are notable by their absence. Perceptions of job security remain strong. Wages are growing at around the same modest pace as at the start of the year. Credit is available and competitive. Confidence is solid.

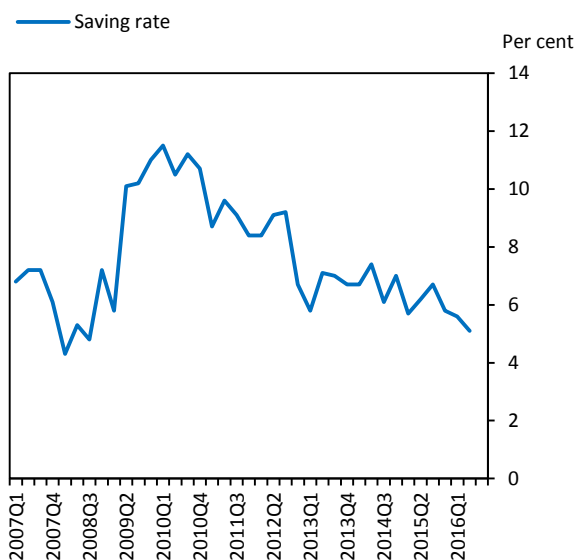
In contrast to developments in the real economy, financial markets have taken a less sanguine view of Brexit prospects. Sterling is currently around 16% lower than its peak a year ago. Partly reflecting this depreciation, measures of inflation expectations have picked up notably.

Chart 17: Growth has been increasingly driven by consumption



Source: ONS and Bank calculations. * = Assumes the 2016Q3 growth rate is achieved through the average contributions to growth made by consumption and non-consumption ("other") expenditure components over 1955-2007.

Chart 18: Saving rate back to pre-crisis level since around 2013, and consumption rising as a share of employee income



Source: ONS and Bank calculations.

Ultimately, the tension between consumer strength on the one hand and the more pessimistic expectations of markets on the other will be resolved.

In the MPC's November projections, this resolution is expected to occur as imported inflation begins to weigh on people's real incomes, slowing consumption growth. This moderation in household spending reinforces the cumulative effects of a pick-up in uncertainty on investment. As a consequence, growth is expected to remain below past averages for the next few years.

One corroborating sign of this potential deceleration is that the UK expansion is increasingly consumption-led (**Chart 17**). The saving rate has fallen towards historic lows (**Chart 18**), and borrowing has resumed.

Evidence from the past quarter century across a range of countries suggests episodes of consumption-led growth tends to be both slower and less durable.^{xxxi} This is because consumption growth eventually outpaces earnings growth, increasing debt and making demand more sensitive to changes in employment and income.

The bigger picture is that more modest potential growth ultimately means lower real income growth. The only question is how this comes about: either through a compression of nominal wage growth and higher unemployment, or through faster growth in consumer prices and a smaller rise in joblessness.

The MPC's remit requires it to decide how to balance that trade-off, including the horizon over which it aims to return inflation to target.

In the MPC's judgement, attempting to offset fully the direct impact of sterling's depreciation on CPI inflation with tighter monetary policy would be excessively costly in terms of foregone output and employment growth.

For example, returning inflation to the 2% target in three years' time would call for rates around 100 basis points higher over the next three years. Compared to the MPC's November projections, that would increase unemployment by around 250,000 people. That higher unemployment would mean lower nominal wage growth, offsetting the effects of lower inflation on real wages. Either way, real wages would likely fall by around 4% compared to our expectations before the referendum.

The MPC is choosing a period of somewhat higher consumer price inflation in exchange for a more modest increase in unemployment. There are limits, however, to the extent to which above-target inflation can be tolerated.

Moreover, it remains the case that the outlook for inflation will depend on the evolution of the prospects for demand, supply and the exchange rate. Monetary policy can respond, in either direction, to changes to the economic outlook as they unfold to ensure a sustainable return of inflation to the 2% target.

Since early November, the sterling exchange rate is up around 6% and market interest rates in three years' time are up around 30 basis points. Long-term interest rates are back to their pre-referendum levels. Markets also responded strongly to the US election result, with both breakeven inflation and real yields rising. Alongside those market developments, UK indicators suggest continued solid growth, and the pace of fiscal consolidation is now expected to be slower. The MPC will assess these and other developments at its meeting next week as it plots the monetary course ahead.

Whatever economic developments and prospects, the MPC will always set monetary policy to maintain price stability and promote the good of the people of the United Kingdom. As it did when it was the only game in town after the global financial crisis; and as it will going forward, in better balance with fiscal and structural policies.

Monetary policy will continue its good work as the UK economy adjusts to new opportunities with Europe and the rest of the world.

In the end, monetary policy isn't a spectre but a friendly ghost.

- ⁱ Monetarism is the view that the dynamics of money have a temporary influence on demand and, via the celebrated “quantity equation”, a major influence of prices. Here I am using the term in a broader sense, to describe the view that monetary policy is the *only* tool necessary to stabilise the economy. Friedman advocated the control of money as superior to fiscal measures for stabilising the economy. In Friedman (1948) he argued that financing variations in the government deficit or surplus with monetary expansions or contractions would be stabilising. Later, in Friedman (1960), he advocated a constant growth rate of the money stock as a means to stabilise the economy effectively. Following the experiences of the 1980s, there is today great scepticism that the velocity of money circulation exhibits the kind of stability necessary to make the quantity equation operative as a means of inflation control, although money may still have useful information content as an indicator. As Gerry Bouey said, “We didn’t abandon the monetary aggregates, they abandoned us.” See Friedman, M. 1948. A monetary and fiscal framework for economic stability. *American Economic Review* 38, 256–64; and Friedman, M. 1960. A Program for Monetary Stability. New York: Fordham University Press.
- ⁱⁱ Growth in India and China in particular has contributed to a marked fall in the global Gini coefficient, from 0.74 in 1975 to 0.63 in 2010. Niño-Zarazúa, M., Roope, L. and Tarp, F. (2016), “Global Inequality: Relatively Lower, Absolutely Higher,” *Review of Income and Wealth*, July.
- ⁱⁱⁱ Reinhart, C. and Rogoff, K. (2009), *This Time is Different*, Princeton University Press.
- ^{iv} Latest data available from the World Wealth and Income Database suggest income shares of the top 1% of: 18% US (2015); 13% UK (2012); 8% Australia (2013); 8% Canada (2013); 10% Ireland (2009). See also: Atkinson, A, Piketty, T, and Saez, E, 2011, “Top Incomes in the Long Run of History”, *Journal of Economic Literature*, 49(1), 2011, 3-71.
- ^v Saez, E and Zuchman, G (2015), “Wealth Inequality in the United States since 1913: Evidence from Capitalized Income Tax Data”.
- ^{vi} Milanovic, B. (2016), *Global Inequality: A New Approach for the Age of Globalization*, Harvard.
- ^{vii} As my colleague Ben Broadbent has pointed out, this explains why rising real house prices did not result in large increases in the Gini measure of wealth inequality: compared to financial assets, housing is more evenly distributed among the population, so rising house prices tend to benefit the median in the wealth distribution. See Broadbent, B (2016), “The distributional implications of low structural interest rates and some remarks about monetary policy trade-offs”, speech at the Society of Business Economists Annual Conference, November.
- ^{viii} Credit Suisse Research Institute (2014), *Global Wealth Databook 2014*, London. See also Alvaredo, F., Atkinson, A. and Morelli, S. (2016), “The Challenge of Measuring UK Wealth Inequality in the 2000s”, *Fiscal Studies*, 37(1).
- ^{ix} Gardiner, L. (2016), “Stagnation Generation: the case for renewing the intergenerational contract”, <http://www.resolutionfoundation.org/publications/stagnation-generation-the-case-for-renewing-the-intergenerational-contract>
- ^x Hood, A (2016), “The outlook for living standards”, IFS post-Autumn Statement 2016 briefing, Institute for Fiscal Studies.
- ^{xi} Alan Krueger documented that countries with greater inequality at one point in time also tend to experience less earnings mobility across generations, and labelled this the “Great Gatsby Curve”. See Krueger, A. (2012), “The rise and consequences of inequality”, speech at the Center for American Progress, January. See also Corak, M (2013), “Income Inequality, Equality of Opportunity, and Intergenerational Mobility”, *Journal of Economic Perspectives*, 27(3). In addition, across a wide span of countries and time, Gregory Clark has found a striking uniformity in rates of social mobility. See Clark, G. (2014), *The Son Also Rises*, Princeton University Press.
- ^{xii} All of this matters. As formal studies of people’s happiness find, subjective well-being is significantly affected by perceptions of inequality and the sense of community. Moreover, psychologists have shown that the quest for higher wealth only provides short-term satisfaction and draws people into a pattern of consumption that never satiates. Individuals who put a higher premium on income have been shown to have lower subjective well-being and to be more prone to mental illness. And research suggests that only those in the bottom quintile of the wealth distribution are notably happier when their wealth increases. Even that effect only holds for the time it takes for people to adjust their expectations to their new circumstances. At the same time, those in the lowest quintile of wealth are found to be significantly more likely to report psychological distress compared to those in the highest quintile. These findings are consistent with a broad school of psychological research that shows that feelings of control and opportunity are important determinants of mental health and happiness. The combination of these effects can mean that, even as GDP grows, if the gap between rich and poor widens, aggregate happiness can fall and mental health ailments rise.
- ^{xiii} E.g. Alesina, A., Di Tella, R. and MacCulloch, R. (2004), “Inequality and happiness: are Europeans and Americans different?”, *Journal of Public Economics*, 88; Rodriguez-Pose, A. and von Berlepsch, V. (2012) “Social Capital and Individual Happiness in Europe,” *Bruges European Economic Research Papers* 25, European Economic Studies Department, College of Europe.
- ^{xiv} E.g. Bhagwati, J. (2011), “Why free trade matters”, Project Syndicate, June 23.
- ^{xv} In neoclassical models, free trade is Pareto Optimal in principle – in that the aggregate gains are sufficient to compensate those that lose out while preserving gains for the winners. This typically means some form of redistribution of the gains from trade is needed to achieve this outcome. This is the Kaldor-Hicks compensation principle. It is an open question, however, whether redistribution of this kind actually takes place in practice and, indeed, whether it is itself costless, as the Kaldor-Hicks principle assumes.
- ^{xvi} Stolper, W. F.; Samuelson, Paul A. (1941). “Protection and real wages”. *The Review of Economic Studies*, 9 (1): 58–73, November.
- ^{xvii} Pew Research Center (2014). In response to the question: “Does trade with other countries lead to job creation (in survey country), job losses, or does it not make a difference?”, 67% in China answered “job creation”. In the US, only 20% responded in this way, and 50% responded “job losses”. See <http://www.pewglobal.org/question-search/?qid=1890&cntlDs=&stdlDs=>
- ^{xviii} YouGov (2015). See <https://yougov.co.uk/news/2015/10/13/public-split-globalisation/>.
- ^{xix} Haldane, A. (2015), “Labour’s share”, speech given at the Trades Union Conference, 12 November.
- ^{xx} This uses the economic policy uncertainty indices developed by Baker, S, Bloom, N and Davis, S (2015), “Measuring economic policy uncertainty”, NBER Working Paper No. 21633, October. Refers to 12-month trailing averages.
- ^{xxi} A range of factors can explain these trends including, recently, investors’ increasing aversion to disaster risk and desire to hold safe assets – like bonds – instead of risky ones – like equities. These other factors include the nature of the monetary policy regime, and the types of macroeconomic disturbance responsible for macroeconomic fluctuations. For example, commodity price shocks in the 1970s led to inflationary recessions, causing nominal bond prices to fall as inflation expectations rose, and equity prices to fall as the economy slowed. Improvements in the anti-inflation credibility of central banks, by contrast, reduced inflation risk premia in nominal bonds, raising their prices and lowering yields, while achieving such disinflation required temporary reductions in growth, lowering equity prices. Finally, demand shocks, which tend to create disinflationary recessions and inflationary upswings, tend also to generate negative co-movement between nominal bond prices and equity prices. See for example Campbell, J, Pflueger, C and Viceira, L (2015), “Monetary policy drivers of bond and equity risks”, *mimeo*.

^{xxii} See Carney, M. (2013), "The Spirit of the Season", Speech to The Economic Club of New York, December; and Vlieghe, G (2016), "Debt, Demographics and the Distribution of Income: New challenges for monetary policy", Speech at the London School of Economics, January.

^{xxiii} High inflation also tends to be volatile, which distorts price signals and reduces investment by raising the cost of capital. That, in turn, could harm real income growth.

^{xxiv} This is why average earnings tend to move counter-cyclically as changes in the composition of employment boost average wages in the initial stages of a downturn and reduce them as the downturn subsides. See also Broadbent, B (2015), "Compositional shifts in the labour market", speech given at 'Understanding the Great Recession: from micro to macro' Conference, Bank of England.

^{xxv} For a discussion in the UK context, see Hills, J., Cunliffe, J., Gambaro, L., and Obolenskaya, P. (2013), "Winners and Losers in the Crisis: The Changing Anatomy of Economic Inequality in the UK 2007-2010", Centre for Analysis of Social Exclusion, LSE.

^{xxvi} Oreopoulos, P., von Wachter, T. and Heisz, A., (2012) "The Short- and Long-Term Career Effects of Graduating in a Recession," American Economic Journal: Applied Economics, 4(1): 1-29.

^{xxvii} See Blanchard, O. and Summers, L. (1986), "Hysteresis and European Unemployment", in Fischer, S. (ed.), NBER Macroeconomics Annual, MIT Press, September, pp. 15-77.

^{xxviii} Coibion et al (2016) for the US, and Mumtaz and Theophilopoulou (2016) for the UK, estimate the contributions of monetary policy shocks that change interest rates to changes in consumption and income inequality. Both find that expansionary monetary policy *reduces* the cyclical (i.e. business cycle) component of inequality in the pre-crisis period. Both papers argue that the effects of monetary policy shocks are economically as well as statistically significant. However, other factors are much more important overall, as judged by the forecast error variance decompositions produced by the models in question. Coibion, O., Gorodnichenko, Y., Kueng, L. and Silvia, J. (2016), "Innocent bystanders? Monetary policy and inequality in the US", mimeo, February; and Mumtaz, H and Theophilopoulou, A (2016), "The impact of monetary policy on inequality in the UK: an empirical analysis", Queen Mary University Economics Working Paper No. 783, February.

^{xxix} As per the Wealth & Assets Survey (2012- 2014), only 2% of households have deposit holdings over £5k, financial assets under <£5k (including pension wealth), and have zero or negative property wealth. This increases to 6% of households if pension wealth is excluded.

^{xxx} Alibaba's Tmall Global, for example, allows SMEs from countries including Australia, Canada and the UK to sell everything from baby products to electronic devices to consumers in China.

^{xxxi} See BIS *Quarterly Review*, March 2017 (forthcoming).