# Closer to the Edge?

### Prospects for household debt repayments as interest rates rise

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# Given current levels of debt exposure, what might happen when interest rates rise?

- The economic downturn has not produced the wave of defaults and repossessions that many feared but deleveraging has been limited, raising the prospect that we are still to face a debt repayment crisis when interest rates eventually rise
- The first report in this project On Borrowed Time? identified that some 3.6 million households were spending more than ¼ of their disposable income on debt repayments at the end of 2012. Although the number had fallen since 2008, it appeared high given the historically low level of the Bank of England's base rate. We therefore considered these households to be 'debt loaded' – (largely) keeping up with repayments but vulnerable to future changes in borrowing costs, earnings, house prices and forbearance practices
- The new analysis set out in these slides asks what could happen next. Under different scenarios for income growth and interest rates, will debt loaded households be pushed closer to (or over) the edge?

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# Use What if? analysis to focus on the potential impacts of (plausible) risks to incomes and interest rates

- All economic projections are highly uncertain, particularly in today's environment. Rather than predictions, these slides therefore set out *What if? Scenarios*, considering what would happen if income growth and the cost of borrowing deviate from the central case
- Our income growth scenarios are **grounded in recent experiences**. We apply 'good' and 'bad' income growth settings relating to episodes of household income growth across the distribution since 1981
- Our interest rate scenarios illustrate the **vulnerability of households to relatively modest movements in the cost of borrowing**. The new Bank of England governor has signalled an intention to hold down interest rates over the medium-term. Yet given inevitable uncertainty about where rates will be in 2017, we consider modest increases above market expectations

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# **1 The debt picture in 2017** the OBR's central case projections

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# Latest OBR projection suggests post-2008 period of household deleveraging may have run its course

- After 2008, household debt fell relative to incomes while savings increased significantly. This was due to:
  - Tight credit conditions (increasing the requirement for large deposits for house buying for example) and
  - Low credit demand (owing in part to continued uncertainty about future economic prospects)
- More recently, the savings ratio has fallen and the OBR now projects that household debt levels – even relative to incomes

   will rise again from this year, though the cost of servicing these debts is not projected to rise significantly and overall financial balance is expected to be maintained by growth in assets

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#### Total debt projected to start rising again, approaching £2 trillion by 2018 Borrowing has

Total household debt (in nominal terms), outturn and projected: 1997-2018



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been flat in cash

terms (falling in

credit

### *Resulting in a slight increase in the debt-to-income ratio, returning it to its 2005 level*

Total disposable income (in nominal terms) and debt to income ratio, outturn and projected: 1997-2018



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falling back to

historic levels,

### But continued low borrowing costs mean the debt repayment ratio is projected to remain flat

Bank of England base rate and debt repayments to income ratio, outturn and projected: 1997-2018



(and the new Governor's comments) suggest that the base rate will remain close to the floor for a few more years

Market

expectations

The burden of debt repayments is therefore projected to be broadly flat

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However, these projections are highly uncertain and do not account for variation across the income distribution

- The post-financial crisis period has been characterised by highly uncertain economic forecasts
- Even if GDP projections prove accurate:
  - Household incomes may rise more quickly or slowly compared to GDP and may also rise unevenly
  - Interest rates could rise more quickly than expected if external forces or a domestically-generated housing boom raise inflationary pressures
- These different possibilities mean that, even if the aggregate debt picture gets no worse, the burden of debt could play out very differently, especially for lower income debtors

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## 2 Scenario building

### plausible alterations to the central

case

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# We test the impact of plausible scenarios for household income and interest rates

- Given the uncertainty in central forecasts, we consider the impact of different scenarios for household incomes and the base rate
- Clearly many trajectories are possible GDP may not grow as projected and household debt may not rise as the OBR forecasts – but our starting assumption is that these projections prove to be true
- In particular, recent experiences suggests that household income growth may (a) not track GDP growth overall and (b) be unevenly distributed, especially given planned benefit and tax credit cuts
- And on **interest rates**, while ultra-loose monetary policy is expected to continue for a number of years, in truth no one can know where the base rate will be by 2017

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# Producing six scenarios that consider different paths for income growth and borrowing costs



'Good' income growth assumes that household income growth is strong and even (tracking GDP and being quite evenly distributed)

**'Bad' income growth** assumes household income growth is weak and uneven (falling behind GDP and being skewed towards more affluent households)

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# Household income growth could be (a) strong or weak relative to GDP – both have happened in the past

Indices of growth in real GDP and disposable household income , 1997-98=100



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### And the distribution of household income growth could be (b) even or skewed – again following precedents During the

"Skewed Growth" Annual average GDP-deflated growth in net equivalised household income years, average (BHC), by selected percentile points: 1981 - 2007-08 disposable 6% incomes grew at nearly 4% a year, 5% but the Skewed growth (1981 to 1990) 3.9% distribution 4% × was highly regressive 3% Shared growth (1991 to 2007-08) In the "Shared 2.5% 2% Growth" period, average incomes 1% grew less quickly, but in a much 0% more even way

Source data comes from the IFS and is then converted into GDP-deflated figures. Growth rates apply to equivalised incomes.

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20

30

35

40

50

55

5

10

15

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95

Mean

90

85

### We combine these possibilities to create 'good' and 'bad' income scenarios: strong and even vs. weak and uneven The 'good'

Cumulative growth in GDP-deflated net equivalised household income (BHC), under two scenarios: 2011-12 to 2017-18



Growth rates apply to equivalised incomes; the scenario model uses unequivalised rates of growth.

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scenario

combines past

#### Adjusting for consumer inflation, both scenarios leave households worse-off compared to 2011 Measured



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against RPI, our

Cumulative growth in RPI-deflated net equivalised household income (BHC),

#### We test two alternatives to the default base rate path, above expectations but well below normal level Current market



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income

period

# In all our scenarios we make consistent—and relatively conservative—assumptions in other areas

- The OBR's central case projections for GDP growth and inflation are taken as given
- Total household savings and debt levels are uprated between 2011 and 2017 in line with outturn (2012) and OBR projections (2013 onwards) and assuming that the distribution of these liabilities and assets by type and across households is unchanged
- As far as possible, we apply product-specific interest rates, using Bank of England data on weighted averages. We take no account of the likely future change in the mix of fixed and variable rate mortgages
- We assume that spreads between quoted rates and the base rate fall halfway back to historic levels
- We assume no behavioural impacts and, other than increasing income from savings when we raise the base rate, we assume no consequential impacts of changes in specified variables

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### Our scenarios assume that spreads between market rates and the base rate continue to fall



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# The future path of unsecured lending costs is even less clear – again we make quite conservative assumptions



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### 3 Alternative debt pictures

# findings from the scenario analysis

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Our scenario impact assessment focuses on the affordability of servicing debts in the coming years

- We previously identified 3.6 million **'debt loaded'** households in 2012
  - households spending more than ¼ of their disposable income on debt repayments
- To judge the impact of different income growth and interest rate scenarios, we now consider the number of households falling into 'debt peril'
  - households spending *more than ½ of their disposable income* on debt repayments (often taken to be an indicator of over-indebtedness)

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#### The numbers of households in 'debt peril' has fallen since 2007, thanks to ultra-loose monetary policy The proportion

Trends in proportion of households considered to be 'debt-loaded' or in 'debtperil', and Bank of England base rate: 2001-02 to 2011



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of households

in 'debt peril'

### Clearly an increase in interest rates today would push large numbers of households into peril A 2ppt





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overnight

increase in the

### Under ongoing low rates and **good household income growth**, exposure to debt is broadly constant

Trends in proportion of households considered to be 'debt-loaded' or in 'debtperil', and Bank of England base rate: 2001-02 to 2017



Taking an optimistic view about income *growth* – *that* it keeps pace with GDP and is evenly shared – the proportion of households in peril would increase *slightly to just* 

under 3%

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## But even in a **good growth scenario**, outcomes are vulnerable to higher interest rates

Trends in proportion of households considered to be 'debt-loaded' or in 'debtperil', and Bank of England base rate: 2001-02 to 2017



*If the base rate* was 1ppt higher than current market expectations by 2017 (2.9%), the proportion in peril would *increase to just* above 3% and the overall 'debt loaded' population would be approaching its 2007 peak

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# With relatively modest increase potentially pushing large numbers of households into 'debt peril'

Trends in proportion of households considered to be 'debt-loaded' or in 'debtperil', and Bank of England base rate: 2001-02 to 2017



A 2ppt interest rate shock (above current market *expectations*) would leave the base rate below its precrisis level, but would increase the proportion of households *in 'debt peril'* to around 4%

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# Under the **'bad' income growth** scenario, numbers in peril grow even in the absence of interest rate shocks

Trends in proportion of households considered to be 'debt-loaded' or in 'debtperil', and Bank of England base rate: 2001-02 to 2017



Returning to the market expectation trajectory for the base rate but applying the 'bad' income growth scenario would raise the proportion of households in 'debt peril' to

around 3%

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### Meaning that outcomes become even more vulnerable to variations from interest rate expectations

Trends in proportion of households considered to be 'debt-loaded' or in 'debtperil', and Bank of England base rate: 2001-02 to 2017



Under this scenario, an additional *1ppt increase* in the base rate would push around 4% of households into 'debt peril', higher than at the start of the financial crisis

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# With a 2ppt interest rate shock contributing to a doubling of 'debt peril' levels relative to today

Trends in proportion of households considered to be 'debt-loaded' or in 'debtperil', and Bank of England base rate: 2001-02 to 2017



Under the worst (yet still plausible) of our scenarios, the proportion of households in 'debt peril' would jump to around 5%, more than double the baseline level and significantly higher than the levels recorded even at the start of the crisis

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### Numbers in 'debt peril' may be heading back towards (or significantly beyond) the pre-crisis level of 2007

Number and proportion of households spending more than 50% of their disposable income on debt repayments	Actual/projected base rate (5.5% in 2007; 0.5% today;1.9% in 2017)	Base rate + 1ppt (1.5% today; 2.9% in 2017)	Base rate + 2ppt (2.5% today; 3.9% in 2017)
2007 (pre-crisis peak)	870,000 3% 6%	Number of households as a proportion of all households as a proportion of all households with outstanding debts	
2011 (baseline)	600,000 2% 4%	830,000 3% 6%	1,020,000 4% 8%
2017 ('good' income growth scenario)	700,000 3% 5%	880,000 3% 6%	1,080,000 4% 8%
2017 ('bad' income growth scenario )	810,000 3% 6%	1,040,000 4% 7%	1,250,000 5% 9%

Even the 'good' income growth scenario results in an increase in the number and proportion of households in 'debt peril', with additional interest rate shocks pushing the number above 1 million. If we instead consider the 'bad' income growth scenario, the number might exceed 1.2 million – way above the 2007 level

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# **4 The changing face of debt?** a profile of those in peril

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Can take a limited look at the profile of those in 'debt peril' under the scenarios: who is most at risk?

- Sample sizes in the Living Costs and Food Survey make it difficult to drill much further into the 'debt peril' population, but it is worth considering some of the broad characteristics we observe under the various scenarios, specifically:
  - Income distribution
  - Family composition

– Age

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# 'Debt peril' is most prevalent at the bottom of the income distribution

Proportion of households who spend more than one-half of their disposable income on debt repayments ('debt peril'): **2011 baseline** 



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In the 2011

around 5% of

baseline,

# Following an **interest rate shock** this remains the case, but the biggest jumps come at the top

Proportion of households who spend more than one-half of their disposable income on debt repayments ('debt peril'): **2011 baseline plus 2ppts 'shock'** 



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rose by 2ppts,

then the numbers



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#### **'Bad' income growth** generates further – relatively uniform – increases in peril across the distribution The weak

growth in overall Proportion of households who spend more than one-half of their disposable income on debt repayments ('debt peril'): 2017 'bad' growth plus 2ppts



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household

# *'Debt peril' might increasingly be an issue for families with children*

Household composition of those spending more than half of their income on debt repayments under various scenarios



Compared with the 2011 baseline, each of the scenarios implies an increase in the share of those in 'debt peril' who have children, with a corresponding fall in the share accounted for by childless adults living together

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### And for younger households, though the absolute numbers of all ages increase under each scenario

Age breakdown of households spending more than half of their income on debt repayments under various scenarios



From a low base, the share of households in 'debt peril' where the head is under-35 increases rapidly under each of the scenarios, while the share accounted for by the over-50 population shows a corresponding fall

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# 5 Stepping back from the brink?

### lessons from the scenario analysis

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### Good policy making balances the risks associated with outliers with the probability of their occurring

- The scenarios set out here are grounded in reality but in no way form a prediction of what will happen in the coming years. Instead, they help us to understand the magnitude of difficulties that individual households, and the economy more generally, might face if certain, plausible, variations from the central case were to develop
- Things may not develop in the ways considered here. Outcomes could be better – GDP and incomes might rise more quickly – but they could also be worse – a house price boom could put increased pressure on interest rates for instance, and we've taken no account of the unravelling of existing forbearance arrangements. But our results suggest that there is a need to look seriously at ways of heading off a future repayment crisis
- A doubling in the number of households spending more than one-half of their income on debt repayments (as implied by our worst case scenario) would have profound implications for borrowers, the financial sector and the ability of consumers to contribute to economic recovery

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### Meeting the potential challenges associated with debt might require more than monetary policy intervention

- Ultra loose monetary policy has significantly reduced default and arrears numbers since the financial crisis, and it is likely to remain in place for some time yet, but it is not yet clear whether it is providing the necessary breathing space for managed deleveraging or whether it is simply delaying the inevitable
- Policy makers and lenders should use this period of record low borrowing costs to tackle debt problems rather than simply waiting for them to get worse
- Strategies could include measures designed to lock-in cheap borrowing for vulnerable debtors as a means of protecting them against future base rate increases

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# With debt repayment problems potentially creating a major headwind for sustainable economic recovery

- Broader still, the potential debt hangover provides government with even more reason to try to secure a strong, sustainable and equally-shared economic recovery
- This analysis highlights the potential problems that face us in the years ahead. The next phase of this work will build on this insight by working with a range of experts to develop potential policy responses that reduce the risk of pushing households – and the economic recovery itself – over the edge



### Notes & Methodology

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### Notes: the basic approach

- The eight scenarios contained in this analysis are based on stylised assumptions regarding both nominal growth in household disposable incomes and the future trajectory of the Bank of England base rate. Throughout we assume that GDP, total household debt and inflation grow in line with the OBR's central case projections from March 2013.
- These eight scenarios are underpinned by household level data from the 2011 *Living Costs and Food Survey* (LCFS) in order to produce outputs relating the proportion of households facing repayments (of debt interest *and* principal) equivalent to more than one-half of their disposable income (placing them in 'debt peril').
- The LCFS contains details of repayment levels across households in relation to mortgages, loans and hire purchase agreements, along with credit card interest charges. We use this data, along with directly reported or assumed information about payment periods and productspecific interest rates to imply levels of outstanding debts.
- For our 2017 scenarios, we increase the outstanding level for each type of debt in line with the OBR's projections for growth in total household debt (adjusted for growth in population), increase incomes in line with our growth scenarios and change the product-specific interest rates in line with the base rate.

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### Notes: interest rates

- In relation to mortgages, our baseline uses weighted average quoted interest rates. We make
  no assumption about the changing mix of fixed and variable rate loans over the scenario,
  instead simply applying increases to the weighted average that track base rate movements.
  The one difference is in relation to interest only mortgages, where the base information in the
  LCFS is sufficient to allow us to imply the *actual* levels of interest being paid in the baseline. In
  this instance it is these actual rates which we adjust in the 2017 scenarios.
- In relation to loans and HP agreements, we assume that all rates are fixed over the course of the loan and are therefore unaffected by the overnight base rate increase scenarios in 2011. We use data about the age of the loan to apply the average product-specific interest rate that prevailed when it was taken out. To capture future changes in interest rates we simply change the base year. That is, for a loan that is 24 months old, we assume that it was advanced in 2009 when working with the baseline (2011) and in 2015 when considering the 2017 scenarios. Where we increase the 2017 base rate relative to market expectations, we assume that the shock occurs evenly over the final three years of the projection period.
- In relation to credit cards, we assume all rates are variable.
- In all instances, we make a default assumption that current spreads between the base rate and rates quoted to households continue to fall from their current level. We assume that, by 2017, they have closed the gap between current levels and their pre-2008 historic averages by half. For example, the average spread for mortgages between 1995 and 2008 was 0.9ppt; at May 2013 it stood at 2.9ppt. We assume that the gap closes by half in 2017, namely 1.9ppt.

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### Notes: income scenarios

- Our two income scenarios are developed via a two-stage process. First, we consider the extent to which overall disposable household incomes grow in line with GDP. We identify two distinct periods: "Perfect Harmony" (1997-98 to 2001-02) during which time incomes grew more or less in line with overall economic output; and "Growing Apart" (2001-02 to 2007-08) when incomes grew (in real terms) at about half the pace of GDP (the ratio is 0.7 when nominal figures are used and it is this ratio which we apply in the model).
- Secondly, we consider the extent to which the overall pot of disposable household income is shared across the distribution. We again identify two distinct periods: "Shared Growth" (1991 to 2007-08) when average annual real-terms growth varied by less than 1% across the equivalised income scale (excluding the far extremes above the 95<sup>th</sup> percentile and below the 5th); and "Skewed Growth" (1981 to 1990) when the spread in average annual growth was closer to 6%. In each instance, we compare nominal growth at the decile median with mean growth to establish a ratio for future application.
- In our 'good' income growth scenario, we apply the "Perfect Harmony" ratio to the OBR's GDP projections, and then apply the "Shared Growth" ratios to the overall income growth figure, producing separate average annual growth rates for each decile.
- In our 'bad' income growth scenario we similarly combine the "Growing Apart" and "Skewed Growth" approaches.

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### *Notes: other assumptions & sources*

- We assume that the changes we apply in each scenario have no behavioural or broader economic effect. For example, we assume that both the 'good' and 'bad' income growth scenarios are compatible with the central case GDP projection and have no additional impact on levels of borrowing or price inflation. The one exception is in relation to the interest rate scenarios. Here we allow that incomes of households with savings to rise in line with the new level of returns on those savings.
- Sources
  - Bank of England, Interactive database
  - DWP, Households Below Average Income (various years)
  - IFS, Poverty and Inequality in the UK: 2013
  - Office for Budget Responsibility, Economic and Fiscal Outlook, March 2013
  - Office for National Statistics and Department for Environment, Food and Rural Affairs, Living Costs and Food Survey (2008-2011) & Expenditure and Food Survey (2001-02 to 2007)
  - Office for National Statistics, National Accounts

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