

3 – Will consumer spending growth continue to fuel the UK recovery?

Key points

- UK consumer spending has grown 2.5% per annum faster than inflation over the past three years, despite very modest real increases in average earnings until recently.
- This reflects rising employment levels, low inflation and mortgage rates, and a decline in the household savings ratio as consumers grew more confident about borrowing and spending in the light of stronger economic growth and sustained house price increase
- In 2015, we expect real household disposable income to grow strongly by around 3.5%, boosted by near zero inflation. But we expect real disposable income growth to slow to 2.3% in 2016 and just under 2% per annum on average in 2017-20 as inflation returns to more normal levels and social security benefit cuts dampen income growth for lower earners.
- We also expect the household savings ratio to continue its downward trajectory in 2015-16 but to stabilise in the medium term, which means that consumer growth will rely more on disposable income growth after 2016.
- As a result, we expect real consumer spending growth to moderate from relatively strong average growth of around 2.5- 3% per annum in 2015-16 to just over 2% per annum in the rest of the decade, similar to trend GDP growth.
- We project that households will be spending more than 25% of their budget on housing and utilities by 2020. We also expect that the share of spending on financial and recreational services will increase by 2020, while that on food, alcohol and tobacco, and transport will fall.
- Survey data show that the face of the high street continues to change with mobile phone shops, clothing stores and pawn brokers retreating, while discounters, health food stores and coffee shops grow in numbers.

Introduction

Consumer spending makes up over 60% of UK GDP and has played a leading role in the recovery to date, but how robust is it? What might throw the recovery off course in the next few years? And which areas of consumer spending might grow the fastest over the rest of the decade?

To answer these questions we analysed the latest revised national accounts data in order to identify the main drivers of consumer spending over the past few years. We then considered future prospects for the two key determinants of consumer spending growth:

- **Real disposable household income growth**, which in turn is driven by trends in real income from employment, state benefits and pensions, and other private income; and
- **Movements in the household savings ratio**, which reflect household borrowing levels and wealth effects (in particular from changes in house prices).

The discussion in the rest of the article is organised as follows:

- Section 3.1 looks at recent trends and future prospects for each of the key determinants of real household disposable income;
- Section 3.2 looks at past trends in and future prospects for the household savings ratio;
- Section 3.3. brings this analysis together to produce projections for consumer spending to 2020 in our main and alternative scenarios;
- Section 3.4 assesses how consumer spending might break down by category over the period to 2020; and
- Section 3.5 summarises and draws conclusions from the analysis.

Box 3.1 provides some additional analysis of regional and local trends from other recent PwC research.

3.1 Recent trends and prospects for real household disposable income

The ONS defines household disposable income as the sum of earnings, net property income and state benefits (e.g. social security benefits and pensions) minus income tax and national insurance payments.

Table 3.1 shows how these key drivers of household expenditure have evolved over the three years to Q2 2015 (the latest available data point). This is the period during which the UK economy started to recover more strongly. Real growth rates in the final column of the table have been calculated by deflating the nominal growth rates using the household expenditure deflator (which over this period averaged 1.4% per annum).

The most notable feature of this analysis is that household disposable income grew by only around 0.8% per annum in real terms over this period, whereas household expenditure grew more than three times as fast at an average of 2.5% per annum. This can be explained by a marked decline in the household savings ratio from 9.4% in Q2 2012 to 4.7% in Q2 2015, as discussed in more detail in Section 3.2 below.

Table 3.1: Key drivers of household expenditure in the three years to Q2 2015

	2012 Q2	2015 Q2	Nominal	Deflator	Real
	£ billion		Average growth rates per annum		
Wages and salaries	173	190	3.2%	1.4%	1.8%
Household share of gross operating profits	59	65	3.2%	1.4%	1.8%
Pre-tax earnings	232	255	3.2%	1.4%	1.8%
Income tax paid	-47	-52	3.0%	1.4%	1.6%
National insurance contribution by workers	-32	-35	3.1%	1.4%	1.7%
Post-tax earnings	153	168	3.3%	1.4%	1.9%
Social security benefits	82	85	0.9%	1.4%	-0.5%
Post-tax earnings and benefits	235	253	2.5%	1.4%	1.1%
Net property income received (interest, dividends, rent etc.)	39	38	-0.2%	1.4%	-1.6%
Other income	9	10	3.8%	1.4%	2.4%
Gross household disposable income	283	302	2.2%	1.4%	0.8%
Change in adjustment for pension entitlement	14	15	2.4%	1.4%	0.9%
Available household resources	297	317	2.2%	1.4%	0.8%
Household savings ratio	9.4%	4.7%			
Household expenditure	269	302	3.9%	1.4%	2.5%

Source: PwC analysis of ONS data

Note: some numbers might not add up exactly because of rounding

Table 3.1 shows that pre-tax earnings increased by around 1.8% per annum over the period supported by a similar real increase in wages and salaries. This trend reflects very strong job creation over this period and, more recently, also a pick-up in average real earnings growth over the past year. Profits earned by the self-employed and owners of small businesses grew at a similar rate to total wages and salaries over this same period.

Table 3.1 shows that post-tax earnings have also grown at an average rate of 1.9% per annum in real terms since Q2 2012. This is slightly higher than for pre-tax earnings, reflecting the impact of higher personal allowances for income taxpayers, but overall direct tax and national insurance payments have largely followed pre-tax earnings at the aggregate level.

However, as Table 3.1 shows, there are two areas that have dampened the growth in real household disposable income significantly over the period. These are decreased social security benefits (down by 0.5% per annum) and net property income received (down by 1.6% per annum). We explain these movements as follows:

- **Social security benefits:** Two thirds of this income category is made up of transfers not covered by a social security fund (e.g. incapacity benefits) and other types of income including maternity benefits. In real terms, this income sub-category shrunk by 1.1% per annum in line with the government's objective of controlling welfare spending. The remaining third of the transfers is made up primarily of state pension payments, which are protected by the 'triple lock' and so grew by 0.9% per annum in real terms over the period.
- **Net property income received:** This category is made up of net interest, property and investment income as well as notional income due to households from defined pension benefits. The majority of the decrease recorded is notional and can be attributed to changes introduced as part of the adoption of the European System of Accounts (ESA 2010), which requires the recording of pension liabilities in present value terms (as opposed to cash terms). Also, the income attributable to insurance policyholders decreased substantially by around 17% in nominal terms during the period. These are one-off effects, however, which should have less impact on growth in this income sub-category going forward. Other elements in net property income were more stable over the past three years.

Overall, these two effects have restricted real household disposable income growth to just 0.8% per annum over the past three years, as compared to 1.9% post-tax real earnings growth.

The final row in Table 3.1 shows that total household resources have also grown by 0.8% per annum after taking into account the change in private pension entitlements. The latter reflects the change in the volume and value of the underlying pension fund investments due to households. However, it is not clear that households regard this as spendable income as it is generally only realisable once pensions are paid out. We therefore prefer to focus our analysis on the household disposable income line in Table 3.1 when considering the drivers of household spending growth. This also leads us to adopt an adjusted definition of the household savings ratio as discussed further in Section 3.2 on the next page.

Future trends in household disposable income

So how will household disposable incomes fare in the future? Clearly there are many uncertainties here, but Table 3.2 sets out what we consider to be a plausible main scenario for real growth in each of the key elements of household disposable income growth in the period to 2020. The figures for 2015 take account of actual data for the first half of this year. Beyond that period we project that:

- Total income for wages and salaries will grow at a rate of 3.9% in real terms in 2015, moderating to 3.2% next year and settling at around 2.4% in the medium term. This will reflect somewhat slower job growth than we have seen in the last few years and a return in inflation to more normal levels, which will offset higher expected nominal average earnings growth.
- Income of households from gross operating profit is expected to grow at around 3% per annum in real terms, reflecting stronger receipts from newly established businesses, particularly those set up after the financial crisis.
- Income tax receipts temporarily will grow faster than wage growth in 2015 as reflected in actual data, but real growth will then settle down at around the 1-2% mark on the back of a continued rise in personal tax allowances. We have assumed that national insurance contributions will grow faster at around 3% per annum in real terms, reflecting recent trends.
- Social security benefits (excluding state pensions) will continue to be cut in real terms in line with government plans.

- Net property income is assumed to grow only modestly at 0.7% in real terms in 2015¹, but then is projected to pick up to 2.5% next year and an assumed medium-term rate of 3.3% per annum as net interest income increases gradually over time and real private rent levels continue to rise.

Based on this analysis we project that real household disposable income growth should grow strongly by around 3.5% in real terms this year (boosted by exceptionally low inflation), but is then likely to moderate to 2.3% growth in real terms next year and 1.8% per annum in 2017-20 as employment growth slows and inflation picks up, offsetting higher nominal earnings growth. Planned social

security benefit cuts also contribute to this moderation of growth, though it would still leave household disposable incomes growing significantly faster in real terms than the average rate seen over the past three years (as set out in Table 3.1 above). Of course, all of these projections are subject to some uncertainty, so we consider alternative scenarios where medium-term income growth could be 0.5% per annum higher or lower than our main scenario of 1.8% in Section 3.3 below.

To see how this disposable income growth translates to consumer spending growth we also need to consider how the household savings ratio will evolve over the same period.

Table 3.2: Main scenario projections of real gross household disposable income growth

Key indicators	2015	2016	2017-20
Wages and salaries	3.9%	3.2%	2.4%
Household share of gross operating profits	3.0%	2.9%	3.3%
Pre-tax earnings	3.7%	3.1%	2.6%
Income tax paid	4.4%	1.2%	1.9%
National insurance contribution by workers	3.8%	3.3%	3.3%
Post-tax earnings	3.4%	3.7%	2.7%
Social security benefits	1.7%	-1.0%	-1.0%
Post-tax earnings and benefits	2.8%	2.2%	1.5%
Net property income received (interest, dividends, rent etc.)	0.7%	2.5%	3.3%
Other income	44.6%	5.1%	1.0%
Gross household disposable income	3.5%	2.3%	1.8%

Source: PwC projections taking account of actual ONS data for first half of 2015

¹ This reflects actual data for the first half of the year. As Table 3.2 shows, there is also an exceptional rise in 'other income' this year reflecting actual data for the first six months, but we assume this to be temporary and, in any event, this is a small item in overall household incomes.

3.2 Household savings ratio: trends and prospects

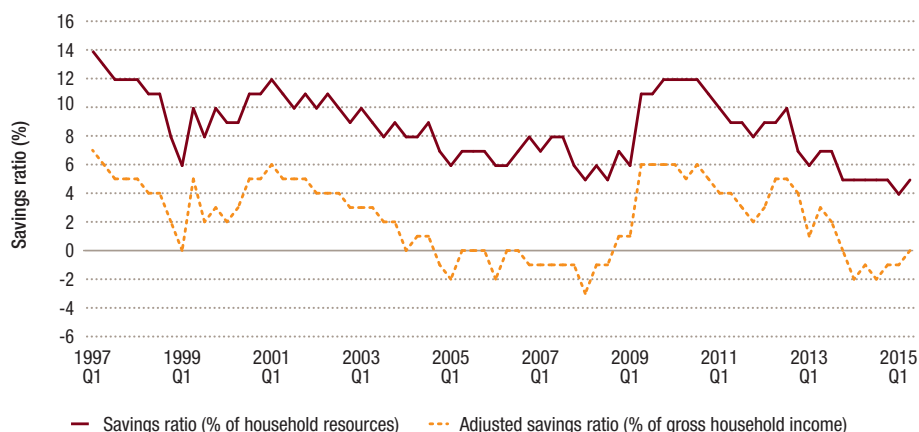
The household savings ratio is calculated by the ONS as the difference between available household ‘resources’ (household disposable income plus an adjustment for the change in pension entitlements as shown in Table 3.1 above) and household expenditure, expressed as a proportion of household resources.

As mentioned above, most households have little awareness of the changes in their pension entitlements². We therefore think that it is more relevant to focus on the ‘adjusted savings ratio’, which simply measures the difference between household disposable income and spending as a proportion of disposable income. Figure 3.1 plots both measures of the savings ratio as explained above.

The two savings ratios show broadly similar trends over time but with much lower levels for the adjusted savings ratio excluding changes in pension entitlements. We can see that the latter dropped gradually from around 6% in 1997 to around -3% just before the recession began. Households reacted to the onset of recession by boosting saving in response to increased uncertainty and lower house prices, with the adjusted savings ratio increasing sharply to around 6%, but once the recovery was underway and confidence gradually picked up alongside house prices, so the adjusted savings ratio has moved back into negative territory. Trends in the headline savings ratio have been similar but at a higher level due to the inclusion of changes in pension entitlements.

So how will the household savings ratio move in the future and is a negative savings ratio sustainable in the medium term? To answer that question we first need to understand the key drivers of the savings ratio.

Figure 3.1 – Historical trends in headline and adjusted savings ratio for UK households (1997 Q1-2015 Q2)



Source: PwC analysis, ONS

² Except possibly for those close to retirement, though even then valuation changes may be of limited relevance for people with defined benefit pension schemes.

Key factors underlying trends in the household savings ratio

In our November 2014 UK Economic Outlook³ we identified two main readily quantifiable drivers of the savings ratio over the period since the late 1990s. These were the household debt to income ratio and house prices, both of which we found varied inversely with the savings ratio (see Figures 3.2 and 3.3). This is corroborated by other research⁴ which suggests that the financial crisis had a bigger impact on household consumption for those economies where pre-crisis household debt levels were higher.

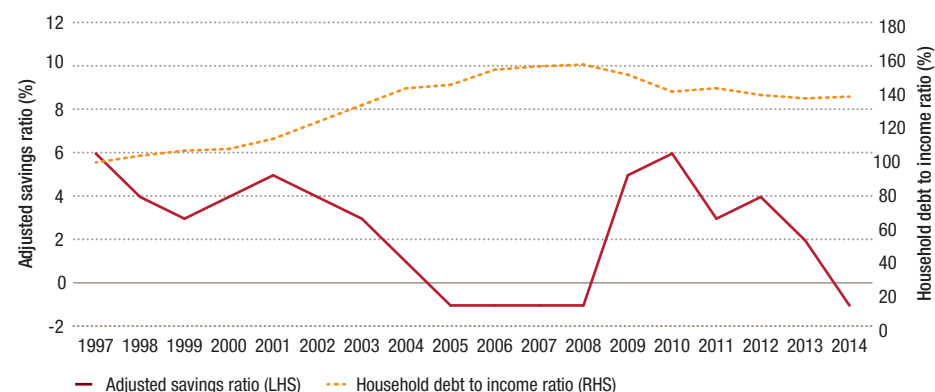
Projecting the household savings ratio

Projecting forward the adjusted household savings ratio is subject to considerable uncertainties, reflecting the fact that it is the difference between two larger numbers: disposable income and consumer spending.

To address this issue we refreshed our in-house savings model⁵ and projected this forward to 2020 based on our latest main scenario for UK house prices and the latest OBR projections for the household debt to income ratio. This gives an average adjusted savings ratio averaging around -2.5% in 2017-20 but stabilising over the course of this period (so that consumer spending growth becomes more dependent on disposable income growth as the period goes on).

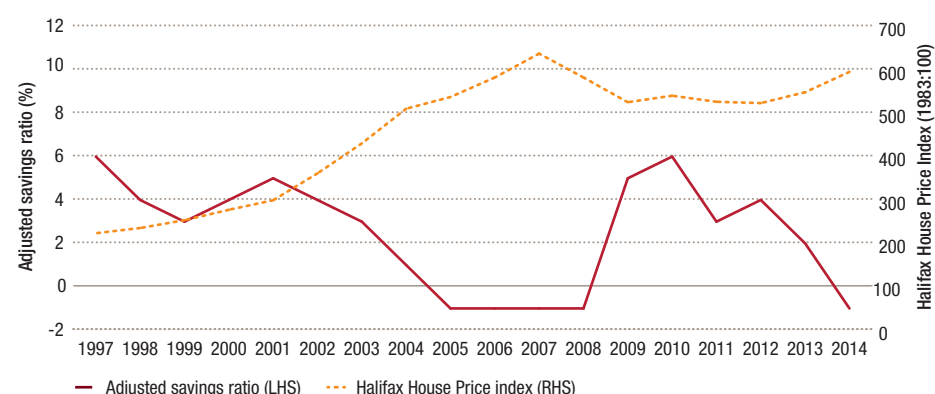
However, we also allowed for plausible variations in these assumptions to derive three possible scenarios for how the adjusted savings ratio might evolve, as summarised in Table 3.3 below. All scenarios envisaged some further decline in the adjusted savings ratio, but the medium-term average of the ratio could range from around -3.6% in an optimistic scenario where household confidence, borrowing and house prices remain high to -1.3% in a less optimistic scenario for these variables.

Figure 3.2 – Relationship between the adjusted savings ratio and household debt to income ratio



Source: PwC analysis of ONS data, Bank of England

Figure 3.3 – Relationship between the adjusted savings ratio and house prices



Source: PwC analysis of ONS data, Thomson Datastream

Table 3.3: Projections of the adjusted savings ratio in alternative scenarios

	2015	2016	2017-20
Greater fall in savings ratio	-1.0%	-1.5%	-3.6%
Main scenario	-0.7%	-1.1%	-2.5%
Smaller fall in savings ratio	-0.4%	-0.7%	-1.3%

Source: PwC analysis

In summary, the adjusted savings ratio has been on a downward path in recent years, which helps to explain why consumer spending has remained relatively strong despite comparatively subdued increases

in real incomes. We expect some further falls in the ratio based on our modelling work, but it should stabilise in the medium term, although the level at which it will do so is uncertain.

³ How robust is the UK consumer recovery?, UK Economic Outlook, November 2014 accessible via <http://www.pwc.co.uk/services/economics-policy/insights/uk-economic-outlook/ukeo-nov2014-how-robust-is-the-uk-consumer-recovery.html>

⁴ IMF World Economic Outlook (2012), Bunn and Rostrom (2014) and House of Debt by Mian and Sufi (2014).

⁵ For further details, please see the Technical Appendix in the November 2014 edition of the UK Economic Outlook which is accessible via <http://www.pwc.co.uk/services/economics-policy/insights/uk-economic-outlook/ukeo-nov2014-how-robust-is-the-uk-consumer-recovery.html>

3.3 Alternative scenarios for consumer spending growth to 2020

We can now combine our household disposable income growth projections from Section 3.1 with our alternative savings ratio scenarios from Section 3.2 to derive scenarios for real consumer spending growth to 2020. Specifically, as set out in Tables 3.4 to 3.6 respectively:

- **Our main scenario** projects that real household expenditure will peak at around 2.9% this year followed by a slightly weaker growth rate of 2.7% in 2016 before settling at a medium term rate of 2.3% per annum on average in the 2017-20 period.
- **Our optimistic scenario** is stronger with real household expenditure growing at 3.4% in 2015-16 and around 3% in the medium term. This type of scenario could be associated with a significant improvement in the global and UK economy that would feed into higher disposable income growth, so making consumers feel more confident and prepared to save less and borrow more. However, as noted above, this would involve the adjusted savings ratio falling back to record negative levels and could make the economy vulnerable to later shocks due to the high implied levels of household debt in this scenario.

- **Our cautious scenario** assumes that the savings ratio bottoms out at around -1.3% in the medium-term and that real disposable income growth is more sluggish growing by just 1.3% on average in the medium term. This type of scenario would be associated with a less favourable global economic outlook, more cautious UK consumers and household spending growth moderating to a medium-term average rate of only around 1.5% per annum.

Whichever scenario we adopt, there is some moderation of consumer spending growth in the medium term as the 'catch-up' period of economic recovery gives way to more normal cyclical conditions. In our main scenario, consumer spending growth is close to estimated trend GDP growth at around 2.3% per annum in the medium term, while this varies from around 1.5-3% in alternative scenarios.

Table 3.4: Main scenario projections of real consumer spending growth

% per annum	2015	2016	2017-20
Real household disposable income	3.5%	2.3%	1.8%
Adjusted savings ratio	-0.7%	-1.1%	-2.5%
Real household expenditure	2.9%	2.7%	2.3%

Source: PwC analysis

Table 3.5: Optimistic scenario projections of real consumer spending growth

% per annum	2015	2016	2017-20
Real household disposable income	3.7%	2.8%	2.3%
Adjusted savings ratio	-1.0%	-1.5%	-3.6%
Real household expenditure	3.4%	3.4%	3.1%

Source: PwC analysis

Table 3.6: Cautious scenario projections of real consumer spending growth

% per annum	2015	2016	2017-20
Real household disposable income	3.4%	1.8%	1.2%
Adjusted savings ratio	-0.4%	-0.7%	-1.3%
Real household expenditure	2.5%	2.1%	1.5%

Source: PwC analysis

3.4 Projected consumer spending growth by category

From a business perspective, it is not just total consumer spending growth that matters but also how this is divided up by category of spending and geography. To address this question we have updated our UK consumer spending model, the results of which we last published in November 2014. We have also looked at the geographic distribution of consumer sentiment, which should correlate broadly with regional consumer spending patterns, in Box 3.1.

Our model is based on an econometric analysis of how factors like real income levels, relative price levels, income distribution and the age structure of the population influence the shares of household budgets allocated to the main categories of spending. We then project these factors forward to 2020 to produce estimates of future spending trends by category.

In these projections, as summarised in Figure 3.4 and Table 3.7, we have assumed that:

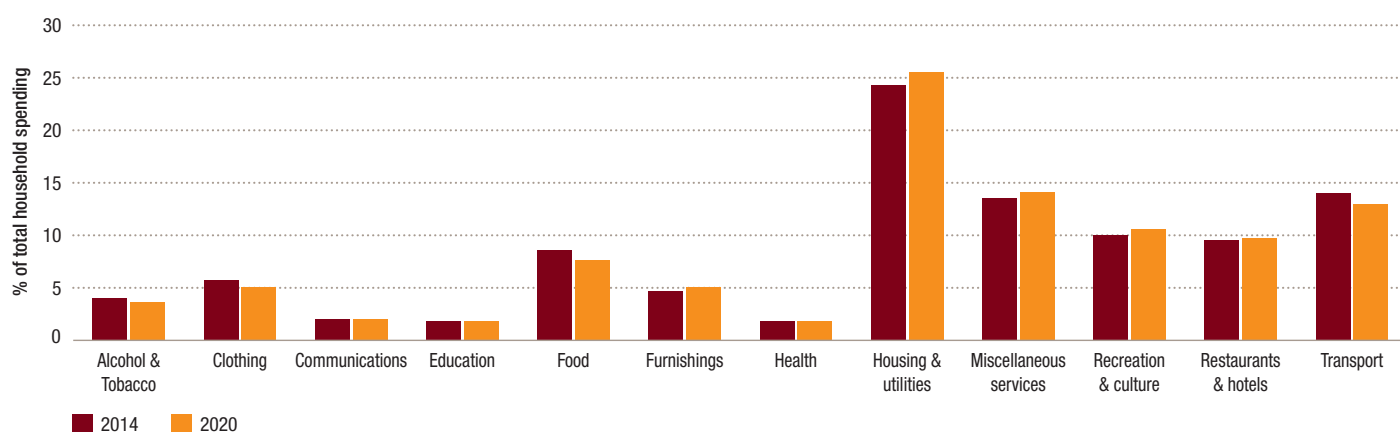
- total UK household expenditure grows as in the main scenario set out in Table 3.4;
- relative price levels in different expenditure categories evolve according to a mixture of recent trends and judgement as to how far these trends will continue up to 2020;
- income inequality remains at latest estimated levels; and
- the relative sizes of the different age groups evolve as in the latest ONS projections, implying in particular a steady rise in the proportion of the UK population above the age of 65.

Figure 3.4 shows that, by 2020, households are projected to allocate more than 25% of their spending to housing and utilities, which are estimated to grow at an average real rate of 3.5% per annum in 2015-20, faster than for any other spending category. This particularly reflects increases in rent levels due to continuing housing shortages.

The miscellaneous services category, which includes insurance and credit card payments, is projected to grow at the second fastest rate and increase its spending share to more than 14%, which is closer to levels last experienced before the financial crisis. This partly reflects higher expected interest rates over this period.

The leisure categories (recreation and culture and restaurants and hotels) are also projected to grow at an above average rate as the economic recovery continues and people have more money left over after paying for essentials. The same is true of the home furnishings category on the back of an assumed continuation of the housing market upturn, relatively strong levels of consumer confidence (see Figure 2.5 above) and a gradual easing of credit availability in recent years as the recovery from the financial crisis continues.

Figure 3.4 – Main scenario projections for household budget shares in 2020



Source: ONS for 2014, PwC main scenario projections for 2020

Private health spending is also projected to be relatively strong, rising on average at just under 3% per annum in real terms over the period to 2020. This reflects both the fact that private health may be a relatively 'superior' good that people are prepared to pay more for as their incomes rise, as well as the pressures on NHS services from an ageing population and the rising costs of new medical technologies.

By contrast, the share of consumer spending on food, alcohol and tobacco is expected to continue to decline steadily. For food in particular, this partly reflects relative price effects as discounters continue to represent a strong competitive constraint on traditional supermarkets, and we can also see this effect in the declining in spending shares projected for clothing (which includes footwear). The share of spending on transport is also expected to follow a declining trend, partly reflecting the 'lower for longer' oil prices we assume in our main scenario projections.

3.5 Summary and conclusions

Consumer spending has been growing relatively strongly in the past three years due to strong employment growth, low mortgage interest rates and higher personal income tax allowances, all of which have boosted real incomes, although real cuts in non-pension benefits have partly offset these factors. In addition, increased confidence and borrowing since mid-2012 have been reflected in a declining savings ratio, giving a significant additional boost to real consumer spending growth (2.5% per annum) over and above real disposable income growth (0.8% per annum).

Looking ahead, our analysis suggests that real income growth will pick up further in 2015-16, but may then moderate. With limited scope for further

Table 3.7: Household budget share projections for 2020 and average annual growth rate by household spending category in main scenario

	2014 spending share	2020 main scenario projection of spending shares	Implied average annual real growth rate (% pa)
Alcohol and tobacco	4.0%	3.6%	0.6%
Clothing	5.7%	5.1%	0.3%
Communications	2.0%	2.0%	2.6%
Education	1.8%	1.8%	2.4%
Food	8.6%	7.6%	-0.4%
Furnishings	4.7%	5.1%	3.2%
Health	1.8%	1.8%	2.9%
Housing and utilities	24.3%	25.5%	3.5%
Miscellaneous services	13.5%	14.1%	3.4%
Recreation and culture	10.0%	10.6%	3.1%
Restaurants and hotels	9.5%	9.7%	2.8%
Transport	14.0%	13.0%	1.4%
Total spending	100.0%	100.0%	2.5%

Source: PwC main scenario projections

Note: Some numbers might not add up exactly because of rounding

reductions in household savings ratios from already low levels, this is likely to cause either a moderation in consumer spending growth in the medium term or a potentially unsustainable build-up in household debt.

More specifically, in our main scenario we project that real household spending will grow by around 2.9% in 2015 and 2.7% in 2016, but this could then slow down to an average of around 2.3% per annum in the 2017-2020 period. There are considerable uncertainties around this, however, with alternative scenarios suggesting a plausible range for medium term real consumer spending growth of around 1.5-3% per annum.

We also project that, by 2020, household will have to allocate more than 25% of their budget to spending on household and utilities. This is the fastest growing category, reflecting factors such as

upward pressure on real rent levels from continued housing shortages. Leisure-related spending on recreation, culture, hotels and restaurants may also increase compared to spending on categories such as food and clothing as the recovery continues and discounters play an increasing role in these latter sectors.

Box 3.1

What can micro data tell us about regional disparities in consumer confidence?

Our analysis in this article focuses on national household expenditure trends, but most UK businesses have some degree of regional specialisation.

So what does the data on regional consumer trends show? Unfortunately, the ONS does not publish this in a timely way and, even then, focuses more on income than consumer spending by region. There are, however, various surveys available that provide additional information on regional consumption trends, including PwC's own periodic consumer sentiment survey, the latest of which was carried out across a representative sample of around 2,000 adults from across Great Britain in September 2015 (see Figure 2.5 in Section 2 and Figure 3.5 in this box).

Those with a 'positive' opinion are the consumers who said they are much and somewhat better off than last year. Those with a 'negative' opinion are the consumers who said they are much or somewhat worse off than last year.

Figure 3.5 summarises our latest consumer sentiment survey results by broad region. Specifically, consumers are on balance more positive in the South East, broadly neutral in the North (which is an improvement on past results for this region), and more negative on balance in Wales, the South West and Scotland. This picture is more complex than a simple North-South divide and it should also be noted that the general trend in sentiment has been positive in recent years in most UK regions, reflecting rising employment rates and house prices across the country over the period since 2012.

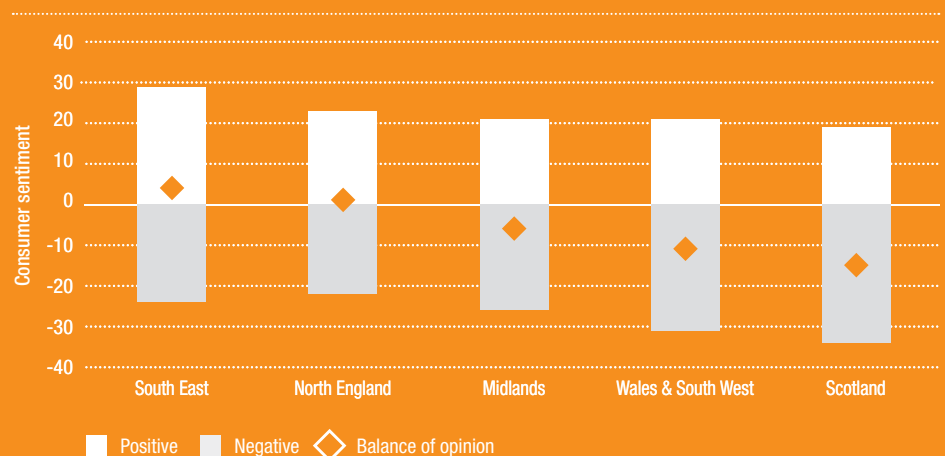
At the same time, growth of online retailing, which has national or international reach, has also reduced the regional specialisations of some retailers, as well as intensifying price competition. Online retailing is also having an increasing impact across a wider range of product categories, including areas like gardening, DIY and white goods.

Separate PwC research carried out recently in conjunction with the Local Data Company (LDC)⁶ shows another important side-effect of growth in e-retailing: the freeing up of high-street retail space. Specifically, this research shows that the pace of retail store net closures across the UK has moderated somewhat this year, but still stands at the relatively high rate of 14 a day.

More detailed data from this survey shows how the face of the high street has changed in recent years with mobile phone shops, pawn brokers and clothing shops retreating while health food shops, coffee-shops, takeaways and other leisure-related stores have grown in numbers.

The freeing up of city centre space could also provide an opportunity for converting empty stores into residential apartments, so helping to address the housing shortage that is one of the major challenges facing the UK today (as we discussed in detail in the July issue of UK Economic Outlook).

Figure 3.5 – Consumer sentiment by broad region, September 2015



Source: PwC Consumer Survey, September 2015

6 For further details please see: http://pwc.blogs.com/press_room/2015/10/pace-of-retailers-shutting-up-shop-plummets-to-lowest-level-for-five-years-says-pwc-and-the-local-da.html

PwC UK helps organisations and individuals create the value they're looking for. We're a member of the PwC network of firms in 158 countries with more than 180,000 people committed to delivering quality in assurance, tax and advisory services. Tell us what matters to you and find out more by visiting us at www.pwc.com/uk.

This publication has been prepared for general guidance on matters of interest only, and does not constitute professional advice. You should not act upon the information contained in this publication without obtaining specific professional advice. No representation or warranty (express or implied) is given as to the accuracy or completeness of the information contained in this publication, and, to the extent permitted by law, PricewaterhouseCoopers LLP, its members, employees and agents do not accept or assume any liability, responsibility or duty of care for any consequences of you or anyone else acting, or refraining to act, in reliance on the information contained in this publication or for any decision based on it.

© 2015 PricewaterhouseCoopers LLP. All rights reserved. In this document, "PwC" refers to the UK member firm, and may sometimes refer to the PwC network. Each member firm is a separate legal entity. Please see www.pwc.com/structure for further details.

Design Group 30045 (11/15)

www.pwc.co.uk/economics