

3 – The outlook for consumer spending and the impact of automation¹

Key points

- Consumer spending slowed during 2017, but has nonetheless grown by an average of 2.3 percentage points per annum faster than inflation over the past five years, supporting the UK recovery over that period.
- This has reflected rising employment levels, continued historically low interest rates, and a declining household savings ratio driven by higher borrowing and rising house prices.
- Looking ahead, we expect real household income growth to pick up gradually in real terms from about 0.8% per annum in 2018 to 1.4% per annum by 2020, while the household savings ratio continues to decline.
- As a result, in our main scenario we expect real consumer spending growth to rise gradually from an estimated 1.1% per annum in 2018 to around 1.7% in 2020.
- We project households will spend over 30% of their budget on housing and utilities by 2030, up from around 27% in 2017. Spending on financial services, personal care, recreation and culture will also tend to increase relatively rapidly over time, while the share of total spending on food, clothing, alcohol and tobacco, and transport will tend to decline in the long run.

- Automation could have a major impact on retail jobs in the long run, but will also bring benefits to consumers in lower prices. This will allow consumers to increase their real spending levels, potentially creating new jobs in less automatable services sectors such as health and personal care. Technologies like artificial intelligence (AI) could also bring great competitive advantage to businesses that deploy them effectively.

Introduction

Consumer spending accounts for more than two thirds of UK GDP and is therefore the most important driver of UK economic growth. Strong consumer spending growth has played a central role in the recovery of the UK economy since 2012, but it slowed in 2017 as real incomes were squeezed. Will this slowdown continue in 2018 and 2019? And, looking further ahead, which areas of consumer spending might grow the fastest in the next decade?

To answer these questions, we have looked at past trends and future prospects for the two key determinants of household spending growth:

- **real household disposable income (RHDI) growth**, which in turn is driven by trends in real income from employment, state benefits and pensions and other private income; and
- **changes in the household savings ratio**, which are particularly influenced by the relative indebtedness of households and wealth effects (e.g. from house price changes).

We also consider the longer term potential impact of automation on retailing and related sectors.

The discussion is structured as follows:

- Section 3.1 provides an overview of recent trends in each of the key determinants of real household disposable income growth;
- Section 3.2 looks at potential future trends in household disposable income growth;
- Section 3.3 looks at past trends and future prospects for the household savings ratio;
- Section 3.4 brings these analyses together to set out our main scenario for future consumer spending growth and assess risks around this as captured in alternative scenarios;
- Section 3.5 examines how consumer spending growth might vary by expenditure category over the period to 2030;
- Section 3.6 considers the potential longer term impact of automation on jobs in retailing and related sectors; and
- Section 3.7 summarises our key findings and concludes.

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3.1 – Recent trends in household disposable income

The ONS defines household disposable income as the sum of earnings, state transfers (e.g. social security benefits) less direct taxes (mainly income tax and national insurance), and other net income accruing to households (e.g. from interest, dividends, rent and other transfers).

Table 3.1 shows how the key elements of household disposable income have changed over the five years to Q3 2017². This is the period which saw the UK economy start to recover on a more sustained basis. 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 five year period averaged 1.7% per annum).

The most notable feature of this analysis is that household disposable income grew on average by around 1.6% per annum in real terms, while household expenditure grew 0.7 percentage points faster on average at 2.3% per annum. This was associated with a decrease in the household savings ratio (adjusted to exclude changes in pension entitlements) from 5.4% to around 2.5% over this period.

Table 3.1 shows that wages and salaries saw a real increase of 1.8% per annum over the five years, supported by a 3.9 percentage point increase in the employment rate during the period. However, this was outstripped by the profits earned by the self-employed and business owners, which grew at an average rate of 2.8% per annum over the four years.

Table 3.1: Key drivers of real household disposable income

	£ billion		Average growth rates per annum		
	2012 Q3	2017 Q3	Nominal	Deflator	Real
Wages and salaries	176	209	3.5%	1.7%	1.8%
Household share of gross operating profits	63	78	4.4%	1.7%	2.8%
Pre-tax earnings	238	287	3.8%	1.7%	2.1%
Income tax paid	-47	-57	3.6%	1.7%	1.9%
National insurance contribution by workers	-32	-37	2.9%	1.7%	1.2%
Post-tax earnings	159	193	4.0%	1.7%	2.3%
Social security benefits	81	88	1.7%	1.7%	0.0%
Post-tax earnings and benefits	240	281	3.2%	1.7%	1.6%
Net property income received (interest, dividends, rent etc.)	40	49	4.1%	1.7%	2.5%
Net current transfers	13	14	1.4%	1.7%	-0.3%
Household disposable income	293	344	3.3%	1.7%	1.6%
Adjustment for change in pensions entitlements	15	10	-6.5%	1.7%	-8.2%
Available household resources	308	355	2.9%	1.7%	1.2%
Memo: Household expenditure	277	336	4.0%	1.7%	2.3%

Sources: PwC analysis of ONS data

Note*: Totals may not correspond exactly to the sum of sub-categories due to rounding

2 This is the last period for which detailed household income data were available at the time of writing.

This divergence reflects an increasing shift towards self-employment and small business start-ups since around 2010, encouraged by a wide range of factors including the greater ability of small businesses to compete through the internet and mobile technology, the rise of the ‘gig economy’, generally lower national insurance rates paid by those who are self-employed and a broader push towards entrepreneurialism driven by successive governments. The effect of the rise of the self-employed can also be seen in the national insurance contributions by households, which grew at a relatively slow rate of around 1.2% per annum as compared to wages and salaries. Income tax payments, by contrast, grew at a similar average rate to wages and salaries (1.9% compared with 1.8%).

Table 3.1 also shows two areas that have dampened growth in real household disposable income over the period:

- **Social security benefits:** this category has shown no growth in real terms over the period. Whilst benefits paid to those who have retired have seen an increase in recent years, with total state pension expenditure growing at a real annual average rate of 2.7% during the 2012-2017 period³, there has been a squeeze on working age benefits.
- **Net current transfers:** this income category includes transfers to and from UK households in the form of financial gifts (e.g. to and from overseas family members), and some insurance claims, but excludes government transfers. These net transfers have decreased sharply since Q2 2013, largely as a result of falling insurance claims over the period. However, this is a comparatively small element of household income (around 4% of the total) so the effect on overall household income growth is not that great.

The final row in Table 3.1 shows that total real household resources grew by 1.2% per annum after taking into account the change in pension fund entitlements (referred to as ‘net equity’ in pension funds in the national accounts). However, such changes in pension values are unlikely to be perceived by most households as usable income, so we prefer to exclude this from the analysis by focusing on an ‘adjusted household savings ratio’ defined as the difference between household disposable income and household expenditure, expressed as a percentage of disposable income. This is lower than the standard ONS definition based on household resources rather than disposable income, but provides a more intuitive indication of the difference between household income and spending (see Figure 3.1).

³ Department for Work & Pensions Expenditure Caseload forecasts (2017).

3.2 – Future trends in household disposable income

So how will household disposable incomes fare in the future? There are many uncertainties here, but Table 3.2 sets out what we consider to be a plausible main scenario for real growth to 2020 for each of the key elements of household disposable income growth. In particular we assume that:

- **Total income from wages and salaries** will grow at a modest real rate of 0.5% in 2018 and around 0.8% in 2019 due to higher inflation and softer employment growth, before gradually picking up to around 1.4% per annum in 2020 as real wage growth returns to positive territory.
- **Income of households from gross operating profits** will continue to grow more strongly than wages and salaries from 2018 onwards as the trend towards increased self-employment continues.
- **Income tax receipts** will grow broadly in line with wages and salaries in the medium term.
- **Social security benefits** will rise by only 0.4% in real terms in 2018 due to higher inflation and the government's continued welfare cap for working age benefits. Beyond 2018, the average rate of benefits growth is projected to be a little stronger, driven by state pensions, but still relatively modest in real terms as welfare reform programmes continue.

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

	2017e	2018p	2019p	2020p
Wages and salaries	1.2%	0.5%	0.8%	1.4%
Household share of gross operating profits	-0.1%	1.0%	1.8%	2.2%
Pre-tax earnings	0.9%	0.6%	1.1%	1.6%
Income tax paid	2.5%	0.4%	0.8%	1.2%
National insurance contribution by workers	0.3%	-0.3%	1.0%	1.5%
Post-tax earnings	0.5%	0.9%	1.1%	1.8%
Social security benefits	-0.6%	0.4%	0.5%	0.9%
Post-tax earnings and benefits	0.2%	0.7%	0.9%	1.5%
Net property income received (interest, dividends, rent etc.)	-5.3%	1.3%	0.8%	1.2%
Net current transfers	26.3%	-0.2%	1.6%	1.6%
Household disposable income	0.2%	0.8%	1.0%	1.4%

Sources: PwC main scenario projections

- **Net property income** will increase by 2.1% in 2018 following a relatively strong decline in 2017, but real growth in the longer term will be more modest as the Bank of England gradually increases its policy rate and this feeds through to mortgage rates.

Based on these assumptions, we project that real household disposable income growth will be only around 0.8% in real terms in 2018 (up from an estimated 0.2% in 2017) before rising gradually to 1.4% in 2020. To see how this translates to consumer spending growth we also need to consider how the household savings ratio might change over this period.

3.3 – Household saving ratio: trends and projections

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

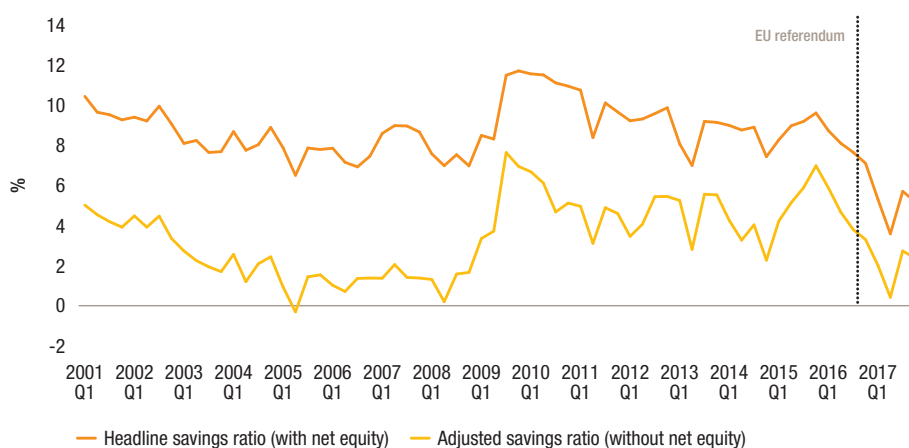
As discussed above, we prefer to focus on an adjusted savings ratio excluding changes in net equity in pension funds. Figure 3.1 shows how this adjusted ratio compares to the standard ONS headline measure.

Both saving ratios show broadly similar trends over time, but at significantly lower levels for the adjusted savings ratio. We can see that the latter dropped gradually from around 4.3% in 2001 to around 1.5% on average in 2007 just before the recession began. This took place in a prolonged period of economic stability and easy credit conditions, allowing house prices and household debt levels to increase.

Following the shock of the recession, household confidence and borrowing slumped and the adjusted savings ratio jumped sharply to 6.2% on average in 2009. Since the end of the recession in mid-2009, however, the adjusted savings ratio has fallen back again as confidence and consumer borrowing have revived, although it has been volatile from quarter to quarter. The latest adjusted savings ratio for Q3 2017 is estimated to be around 2.5%, which is still some way above pre-crisis lows but also well below post-crisis highs.

So how much further, if at all, might the household savings ratio fall in the future?

Figure 3.1 – Historical trends in headline and adjusted UK household savings ratios



Source: PwC analysis of ONS data

Table 3.3: Projections of the adjusted household savings ratio in alternative PwC scenarios (% of household disposable income)

	2017e	2018p	2019p	2020p
Lower savings ratio	1.9%	1.0%	0.2%	-0.4%
Main scenario	1.9%	1.6%	1.3%	1.1%
Higher savings ratio	1.9%	2.2%	2.4%	2.5%

Sources: PwC analysis based on ONS data for Q1-Q3 2017

Projecting the adjusted household savings ratio

Projecting forward the savings ratio is subject to considerable uncertainties, reflecting the fact that it reflects the difference between two much large numbers: gross disposable income and consumer spending. To address this issue we generated two additional scenarios in addition to our main scenario projections. All but one of the scenarios assume some further decline in the adjusted savings ratio between 2018 and 2020 driven by increased household borrowing, but the medium term level of the ratio could range from around -0.4% to around 2.5% in the alternative scenarios for 2020.

In summary, the adjusted household savings ratio has been on a downward path since 2010 and has continued this trend even after the EU referendum. This helps explain why consumption has not fallen further in the aftermath of the referendum vote despite the squeeze on real incomes from higher inflation. In our main scenario, we expect some further falls in the adjusted saving ratio in 2018, but the extent of any further decline beyond that is subject to considerable uncertainty. On the one hand, households may keep borrowing more on the basis of collateral and confidence effects from the expected continued but modest rises in house prices; on the other hand, the expected gradual rise in UK interest rates in the medium to long run could dampen this confidence and deter borrowing.

3.4 – Alternative scenarios for consumer spending growth to 2030

We now combine our household disposable income projections from Table 3.2 with our alternative savings ratio scenarios from Table 3.3 to derive scenarios for real consumer spending growth to 2020. We also make illustrative further assumptions on longer term growth of spending to 2030. Specifically, as set out in Tables 3.4-3.6:

- Our **main scenario** projects real household consumer spending growth will slow down from around 1.8% in 2017 to around 1.1% in 2018 followed by a slight uptick to 1.3% the following year. The main factor behind this slowdown is higher inflation, which has squeezed real disposable income growth and living standards as the pound has depreciated in value following the EU referendum. Real disposable income growth is projected to be somewhat stronger after this year, supported by a gradual fall in the savings ratio. In the longer term, consumer spending growth is assumed to average 2% per annum in the 2020s in line with our estimate of longer term UK economic growth⁴.
- Our **optimistic scenario** is stronger in the short-term due primarily to a sharper further rise in household borrowing in 2018-19 that pushes down the savings ratio to -0.4% by 2020. This type of scenario could be associated with better than expected progress being made in the UK-EU Brexit negotiations together with generally strong global growth conditions. In the long-run, we assume that real disposable income grows faster than the main scenario due to higher UK productivity growth and so supports average real household expenditure growth of around 2.5% per annum in the 2020s.

Table 3.4: Main scenario projections of growth in real household expenditure (% per annum)

	2017e	2018p	2019p	2020p	Average 2021-30p
Real household expenditure	1.8%	1.1%	1.3%	1.7%	2.0%
Real household disposable income	0.2%	0.8%	1.0%	1.4%	
Adjusted saving ratio	1.9%	1.6%	1.3%	1.1%	

Sources: ONS data for Q1-Q3 2017, PwC estimates and projections for later periods. The figures for 2021-30 are illustrative assumptions for consumer spending only based on alternative views of long-term trend UK GDP growth.

Table 3.5: Optimistic scenario projections of growth in real household expenditure (% per annum)

	2017e	2018p	2019p	2020p	Average 2021-30p
Real household expenditure	1.8%	2.0%	2.1%	2.3%	2.5%
Real household disposable income	0.2%	1.0%	1.3%	1.7%	
Adjusted saving ratio	1.9%	1.0%	0.2%	-0.4%	

Sources: ONS data for Q1-Q3 2017, PwC estimates and projections for later periods. The figures for 2021-30 are illustrative assumptions for consumer spending only based on alternative views of long-term trend UK GDP growth.

Table 3.6: Downside scenario projections of growth in real household expenditure (% per annum)

	2017e	2018p	2019p	2020p	Average 2021-30p
Real household expenditure	1.8%	0.4%	0.6%	1.0%	1.5%
Real household disposable income	0.2%	0.7%	0.8%	1.1%	
Adjusted saving ratio	1.9%	2.2%	2.4%	2.5%	

Sources: ONS data for Q1-Q3 2017, PwC estimates and projections for later periods. The figures for 2021-30 are illustrative assumptions for consumer spending only based on alternative views of long-term trend UK GDP growth.

- Our **downside scenario** assumes that the savings ratio reaches 2.2% in 2018 and then edges up again while real disposable income growth is relatively sluggish. This type of scenario could be associated with less confident UK consumers due to problems in both the global economy and the Brexit negotiations in the medium term, together with disappointing UK productivity growth in the longer term beyond 2020.

While we consider our main scenario to be the most plausible, the other two alternatives are well within the bounds of possibility given current political and economic uncertainties. Consumer-focused businesses would do well to make contingency plans for the downside scenario in particular given the uncertainties associated with the Brexit process over the next few years.

⁴ This is calibrated to match the long-term trend GDP growth rate of around 2% per annum for the UK in the 2020s as estimated in our latest World in 2050 report here: <http://pwc.com/world2050>. We do not try to break down longer term consumer spending growth between household income and savings ratio changes since this is not needed for the analysis and it is hard to anticipate that far ahead how consumer borrowing behaviour in particular will evolve.

3.5 – Projected consumer spending growth by category

Total consumer spending is projected to grow reasonably steadily in our main scenario, but from a business perspective it is important to understand which sectors are likely to see the strongest growth rates. To make these projections, we have updated our in-house longer term consumer spending model, results from which we last published in March 2017.

This econometric model uses factors such as real income levels, relative price levels, demographics and income distribution to project how future consumer spending growth could vary across the main categories of spending. We project these factors forward to 2020 on an annual basis and then also provide some more illustrative longer term projections to 2030. In these projections, as summarised in Figure 3.2 and Table 3.7, we have assumed that:

- total UK household expenditure grows at rates set out in the main scenario in Table 3.4;
- income inequality remains at the latest level estimated by the ONS; and
- population shares by age group evolve according to the latest ONS forecasts, which imply a steady rise in the proportion of people above the age of 65.

Figure 3.2 – Historic and main scenario projections for household budget shares to 2030

1985 Rank	Spending Share	2018 Rank	Spending Share	2030 Rank	Spending Share
1	Housing & utilities 27.5%	1	Housing & utilities 27.1%	1	Housing & utilities 30.8%
2	Transport 12.4%	2	Miscellaneous 13.4%	2	Miscellaneous 14.9%
3	Food 12.0%	3	Transport 13.1%	3	Transport 11.8%
4	Miscellaneous 9.3%	4	Recreation & Culture 9.6%	4	Recreation & Culture 9.9%
5	Hotels and restaurants 8.7%	5	Hotels and restaurants 9.3%	5	Hotels and restaurants 9.4%
6	Recreation & Culture 7.8%	6	Food 7.9%	6	Food 5.5%
7	Clothing and footwear 5.9%	7	Clothing and footwear 5.5%	7	Furnishing 4.9%
8	Alcohol and tobacco 5.4%	8	Furnishing 5.0%	8	Clothing and footwear 4.3%
9	Furnishing 5.2%	9	Alcohol and tobacco 3.5%	9	Alcohol and tobacco 2.9%
10	Health 3.5%	10	Communication 2.0%	10	Communication 2.0%
11	Communication 1.6%	11	Health 1.8%	11	Health 2.0%
12	Education 0.6%	12	Education 1.8%	12	Education 1.7%

Sources: ONS for historical data, PwC for main scenario projections

Table 3.7: Household budget share projections to 2030 and implied average annual real growth rates by household spending category in main scenario

	Shares of total spending			Implied average real growth rates	
	2018p	2020p	2030p	2018-20p	2021-30p
Alcohol and tobacco	3.5%	3.4%	2.9%	0.6%	0.3%
Clothing and footwear	5.5%	5.3%	4.3%	-0.4%	-0.2%
Communications	2.0%	2.0%	2.0%	1.3%	2.3%
Education	1.8%	1.8%	1.7%	1.5%	2.0%
Food	7.9%	7.5%	5.5%	-1.2%	-1.1%
Furnishings	5.0%	5.0%	4.9%	1.8%	1.7%
Health	1.8%	1.8%	2.0%	1.6%	2.6%
Housing and utilities	27.1%	27.5%	30.8%	2.5%	3.1%
Miscellaneous services	13.4%	13.7%	14.9%	2.7%	2.8%
Recreation and culture	9.6%	9.7%	9.9%	2.0%	2.3%
Hotels and restaurants	9.3%	9.3%	9.4%	1.4%	2.1%
Transport	13.1%	13.0%	11.8%	0.6%	1.1%
Total spending	100%	100%	100%	1.5%	2.0%

Sources: ONS data for Q1-Q3 2017 and PwC estimates and main scenario projections for later periods

Table 3.7 shows that, by 2030, we estimate that households will need to allocate over 30% of their spending to housing and utilities, compared to around 27% now. This reflects our expectation, based on past research⁵, that supply shortages will keep house prices and rents growing faster than incomes on average.

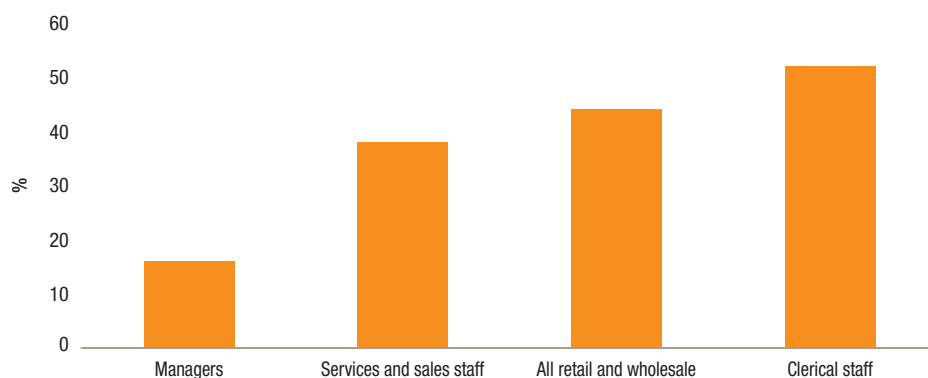
The miscellaneous services category, which includes financial services (including credit cards and insurance) and personal care, is expected to be the second largest expenditure item by 2020 (replacing transport), and to rise further to almost 15% of total household spending by 2030. This makes sense as interest rates are expected to increase gradually in the medium-term, and insurance premiums, including tax, may also tend to rise.

We can also see that the leisure categories (recreation, culture, hotels and restaurants) are also relatively income-elastic and so tend to increase their share of total spending over time as real incomes increase. In contrast, more basic items like food, alcohol and tobacco, and clothing will tend to see their spending shares decline in the long run, continuing the historic trends shown in Figure 3.2. Particularly in the case of food, however, there could be some volatility around this declining trend due to fluctuations in global food prices and exchange rates.

The transport sector is also expected to see a decline in its household budgetary share in the long term, although it may still see modest real growth in absolute terms. The projected decline in the share of household spending on transport reflects an ageing population, coupled with the growth of internet shopping, food delivery companies, disruptive entrants into the transport sector like Uber and streaming services like Netflix which are expected to impact on transport spend per person.

⁵ See, for example, the article on housing market prospects in the July 2017 edition of UK Economic Outlook here: <https://www.pwc.co.uk/economic-services/ukeyo/pwcukeyo-section3-housing-july-2017.pdf>

Figure 3.3 – Share of UK retail and wholesale jobs at potential risk of automation by mid-2030s



Source: PwC analysis of OECD PIAAC data

3.6 – Potential long-term impact of automation on jobs in retailing and related sectors

The retail and wholesale sector is one of the largest employers in the UK, accounting for around 15% of all jobs. It is also closely linked to other sectors such as consumer goods manufacturing and transport and logistics, which are also significant employers.

In the future, however, the world could look very different.

First, almost a fifth of retail sales are already made online according to the latest official ONS data and this percentage continues to rise steadily over time. This tends to shift jobs from shops to warehouses, but companies like Amazon are already seeking to automate some warehouse activities (e.g. using Kiva robots to shift shelves of goods to workers who pick out items for dispatch) and this is likely to increase significantly in the future as robotics technology advances in areas like dexterity to allow more manual tasks to be automated⁶.

Second, even where people still go to shops, the experience may be very different from what they are used to, as illustrated by the recent Amazon Go launch⁷. In these shops shoppers can scan their phones at the entrance, scan items they want to buy as they pick them up from the shelves and be automatically charged for them as they leave the store. No need for check-outs or cashiers, though some human workers will still be needed to stack shelves and deal with customer queries or technical glitches.

In future, even the need to refill shelves may be reduced as the stores may just have samples of products that people can scan on their phones but which can then be delivered from warehouses to their home later. If these warehouses are by then heavily automated, and deliveries are by driverless cars or drones, then employment in the sector could be further reduced.

So how fast might these employment effects emerge and on what scale? In a recent report⁸, our conclusion was that the short term impacts would be relatively small as it will take time to perfect the relevant technologies, make them economic, deal with legal and regulatory issues and roll them out at scale. By the late 2020s, however, our model estimates – based on a detailed analysis of the tasks involved in over 5,500 UK jobs – suggested that around 20% of all UK jobs could be impacted by automation and up to 30% by the mid-2030s. For retail and wholesale, the impacts could be even higher in the long run with up to 44% of jobs in the sector being impacted by automation by the mid-2030s. As the chart shows, this could range from just 16% of managerial jobs to over 50% of clerical jobs in the sector.

⁶ Boston Dynamics, for example, has already developed a robot dog that can not only walk around but also open a door.

⁷ <https://www.amazon.com/b?node=16008589011>

⁸ Will robots really steal our jobs? (PwC, February 2018): <https://www.pwc.co.uk/services/economics-policy/insights/the-impact-of-automation-on-jobs.html>

Benefits of automation

But there is a more positive side to this story. First, some of these technological innovations will themselves create new jobs, from online website designers and AI specialists to those involved in designing, supervising, repairing and maintaining robots.

Second, the efficiency improvements from automation will allow consumer prices to be kept lower than would otherwise be the case, leaving more money to be spent on other goods and services. Even if some of these goods and services are also automated to a degree, some additional human jobs will be created, although it is hard to pin down exactly where they will be. This assumes that the robotics and AI revolution will have the same impact as in every other agricultural and industrial revolution in human history, but since human wants are essentially limitless, it seems highly likely that some such process will continue to operate.

Third, profits may also be raised for the companies at the forefront of applying the new technologies, but we can expect these to be spent or reinvested in the economy through a variety of channels. This will also eventually create new demands for goods and services and for the people involved in producing them.

Overall, our analysis⁹ therefore suggests that, for the economy as a whole, job gains would broadly offset job losses in the long run. Retail and wholesale, and associated sectors like transport and manufacturing, seem likely to be among those seeing net job reductions in the long run. But other less automatable sectors, such as health and education and other consumer services requiring social skills and the human touch, may see significant net job gains.

3.7 – Summary and conclusions

Growth in consumer spending has slowed over the past year due to a weakened pound, rising inflation and a slowdown in wage growth. However, it has continued to outgrow inflation over the past 5 years and support the UK's recovery, largely as a result of continued low interest rates, rising employment growth and a declining household savings ratio driven by higher borrowing and rising house prices.

Looking ahead our analysis suggests that a downward trajectory in the adjusted savings ratio is expected to continue but there are limits to how low this can go. Meanwhile, real disposable income growth will be squeezed by rising inflation over the next year, though it is expected to pick up to 1.4% by 2020 as real wages recover.

In our main scenario, we therefore project that real consumer spending growth will ease from around 1.8% in 2017 to around 1.1% in 2018 and 1.3% in 2019, before returning to around 2% trend growth on average in the 2020s. Other scenarios show long term real consumer spending growth rates in the range of around 1.5-2.5% per annum.

We project that housing and utilities will continue to make up a rising share of total consumer spending, reaching over 30% by 2030 compared to around 27% in 2017. We also expect that financial services and personal care will take a rising share of total consumer spending, while clothing, food, alcohol and tobacco, and transport will continue their relative long-term decline.

Automation could also have significant impacts on retailing and related sectors in the long run. By the mid-2030s, we estimated that over 40% of existing jobs in the UK retail and wholesale sector could potentially be displaced by automation. On the other hand, this will also reduce prices for consumers, stimulating demand for other services and new jobs in providing those services where these are less automatable. It will also create competitive advantage for retail and consumer businesses that can make the most of technologies like AI, robotics, driverless delivery vehicles and drones.

⁹ As set out in this February 2018 report on the macroeconomic impact of AI: <https://www.pwc.co.uk/economic-services/assets/macro-economic-impact-of-ai-technical-report-feb-18.pdf>

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