July 2016

UK Economic Outlook

Special features on:

- UK economic prospects after Brexit
- UK housing market outlook
- The Northern Powerhouse: past performance and future potential

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Highlights and key messages for business and public policy

- UK economic growth had already slowed from around 3% in 2014 to around 2% before the EU referendum due to slower global growth, but the vote to leave the EU is likely to lead to a significant further slowdown.

- In our main scenario, we now project UK growth to slow to around 1.6% in 2016 and 0.6% in 2017, largely due to the increased political and economic uncertainty following the 'Brexit' vote. The UK would, however, narrowly avoid a recession in this main scenario.

- There are particularly large uncertainties around any such projections after the Brexit vote. W lso considered alternative scenarios in which UK growth in 2017 could vary from around -1% if downside risks materialise to around 1.5% if there is an early recovery.

- We expect the Bank of England to loosen monetary policy over the summer to support the economy through this period of uncertainty, while public borrowing is allowed to rise to take the strain of slower growth.

- The main reason for the slowdown will be a decline in business investment, particularly from overseas in areas like commercial property. This is being driven by political instability in the short term, as well as uncertainty about the UK's future trading relationships with the EU in the longer term.

- Consumer spending growth is projected to hold up better, but will still slow from previous strong rates, dropping to around 1.3% in 2017 in our main scenario. This reflects the impact of a weaker pound in pushing up import prices and squeezing the real spending power of households, as well as lower consumer confidence levels and slower jobs growth.

Key projections

	2016	2017
Real GDP growth	1.6%	0.6%
Consumer spending growth	2.5%	1.3%
Inflation (CPI)	0.7%	1.8%
House price growth	3.1%	0.9%

Source: PwC main scenario projections

- The weaker pound should also boost net exports, however, which should move from being a drag on GDP growth in 2015 to a positive contributor in 2017. This should also see the UK current account deficit begin to shrink from recent high levels.

- Service sector growth will slow but should remain positive in 2016-17, but construction will suffer from lower investment levels. Capital goods manufacturers will suffer for the same reason, but some manufacturing exporters will benefit from the weaker pound.

Housing market will be hit by Brexit, but first time buyers still face tough challenges

- House price growth is likely to slow due to uncertainty relating to Brexit. We do not expect a major house price crash, but average UK prices by 2018 could be around 8% lower than if the UK had voted to stay in the EU in our main scenario.

- However, we still expect average UK house prices to rise in our main scenario even with the effects of Brexit. We estimate that prices could be around 8% higher on average in 2018 than they were in 2015, although there is a broader than usual range of uncertainty around this central estimate.

- London may be particularly hard hit due to the weakening of international investor demand, with the impact of Brexit being to reduce average London house prices in 2018 by around £60,000 relative to a scenario where the UK voted to remain in the EU.

- Despite this moderation of house price growth, first time buyers still face a tough challenge to get on the property ladder, with a potential average savings period for a deposit of around 19 years for young people without family assistance. This remains a major barrier for generation rent to get on the housing ladder, emphasising the need both to build more homes and to increase the quality of rented accommodation in the UK.

All regions hit by Brexit, with increased focus needed on boosting growth outside London

- We project that London will remain the fastest growing region, but its pace of expansion could slow markedly to just over 1% in 2017 following the Brexit vote. Other regions are likely to see growth slow to below 1% next year.

- If future jobs growth in the North could be raised to the levels seen in the South East, we estimate that almost 200,000 extra jobs could be created by 2025 in the North of England. But this will require a sustained period of higher investment in infrastructure, housing and skills in these regions.

1 – Summary

Recent developments

The UK economy grew by just over 3% in 2014, the fastest rate seen since 2006, but then slowed to around 2% in the year to Q1 2016 as global growth moderated. The available data for the second quarter suggest that UK growth held up reasonably well in the run up to the EU referendum, particularly as regards consumer spending, but business investment weakened.

The vote to leave the EU on 23rd June has added considerable political and economic uncertainty to the UK outlook, with the pound down sharply and the domestically-focused FTSE 250 index also declining (although the globally-focused FTSE 100 has been much stronger). Many commercial property funds have had to suspend trading in response to capital outflows. Gilt yields fell to record lows on expectations that monetary policy would be loosened in response to the Brexit vote.

UK growth continues to be driven primarily by services, with manufacturing growth having stalled over the past year and construction weakening markedly in June.

The rate of consumer price inflation (CPI) has remained low at around 0.3% as commodity prices have generally remained relati ly weak, partly due to relati ly subdued global demand growth. The latter has also been a factor in causing the Federal Reserve to hold off from interest rate rises in recent months.

Table 1.1: Summary of UK economic prospects

Indicator (% change on previous year)	OBR forecasts (March 2016)		Independent forecasts (July 2016)		PwC Main scenario (July 2016)	
	2016	2017	2016	2017	2016	2017
GDP	2.0	2.2	1.4	0.4	1.6	0.6
Consumer spending	2.4	2.2	n/a	n/a	2.5	1.3
Investment	2.9	4.5	n/a	n/a	-1.4	-4.6

Source: Office for Budget Responsibility (March 2016), Consensus Economics survey (average values in early July 2016 survey) and latest PwC main scenario

Future prospects

As shown in Table 1.1, our main scenario is for UK GDP growth to decline to around 1.6% in 2016 and around 0.6% in 2017 as the effects of the vote to leave the EU feed through[1]. This is well down on pre-referendum forecasts, such as that by the OBR in March, but similar to the latest average of independent forecasts of around 1.4% in 2016 and 0.4% in 2017.

The largest short-term effect of the vote to leave the EU is likely to be on investment growth, which we now expect to be pushed into negative territory in 2016 and 2017. This reflects major projects being deferred or even cancelled due to uncertainties surrounding Brexit, particularly by foreign investors in commercial property and in sectors needing guaranteed access to the EU single market. These uncertainty effects should fade eventually, but it will take time before clarity emerges on future UK-EU trading arrangements.

Consumer spending growth is projected to remain stronger than overall GDP growth at around 2.5% in 2016 and 1.3% in 2017, but is nonetheless likely to slow significantly as real income growth is squeezed (in part due to the weaker pound pushing up import prices) and the job market weakens.

There should be some potential offset from a positive contribution to GDP growth from net trade next year, helped by the fall in sterling. This should also help to reduce the UK current account deficit somewhat next year. But this will fall some way short of fully offsetting the hit to domestic demand growth.

1 These projections are calibrated to be broadly consistent with the 'Free Trade Agreement' (FTA) scenario in our March 2016 report for the CBI on the economic implications of leaving the EU, which is available here: http://www.pwc.co.uk/services/economics-policy/insights/implications-of-an-eu-exit-for-the-uk-economy.html

There are always uncertainties surrounding our growth projections and these are particularly marked following the vote to leave the EU, as illustrated by the alternati .1 (all of which see some short-term growth shortfall relative to our projections before the Brexit vote). There are still considerable downside risks relating to international developments and the fallout from Brexit, but there are also upside possibilities if these problems can be contained. In our main scenario, we expect the UK to narrowly avoid a recession, but businesses need to monitor and make contingency plans for this as a downside risk.

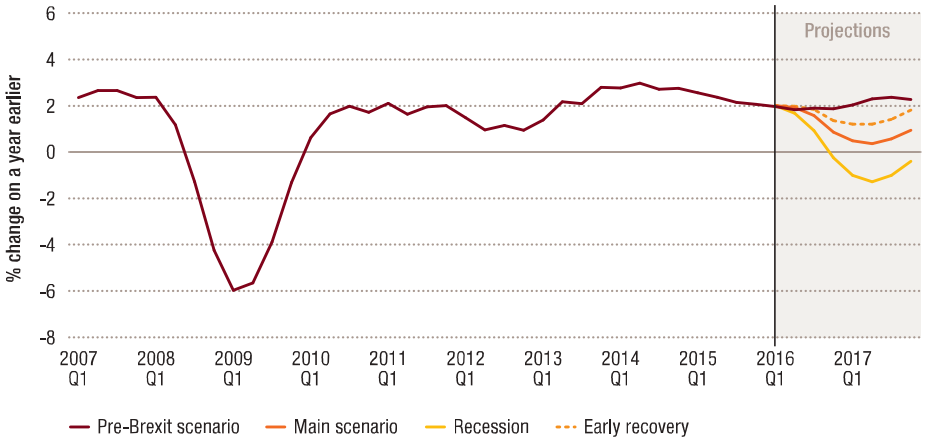
Inflation could rebound to close to its 2% target by the end of 2017 assuming the pound remains relatively weak and there is no repeat of past falls in global energy and food prices. There could be upside risks to this inflation outlook in the longer term if higher import prices feed through into domestic wages and prices more strongly than we expect, but also downside risks if domestic growth slows faster than we expect.

We expect an early loosening of monetary policy through some combination of lower official rates, assets purchase and credit easing. As indicated by record low gilt yields, it seems that a UK rate rise has been pushed well into the future by the Brexit vote.

Housing market will be hit by Brexit, but first time buyers still face tough challenges

In Section 3 of the report, we review recent trends in the housing market and present projections for house price growth in the UK and its regions. We also present new research that outlines the dramatic changes in the affordability of housing for 20-39 year olds (who we refer to as "generation rent").

Figure 1.1 – Alternative UK GDP growth scenarios



Source: PwC based on latest ONS data

Our key findings are:

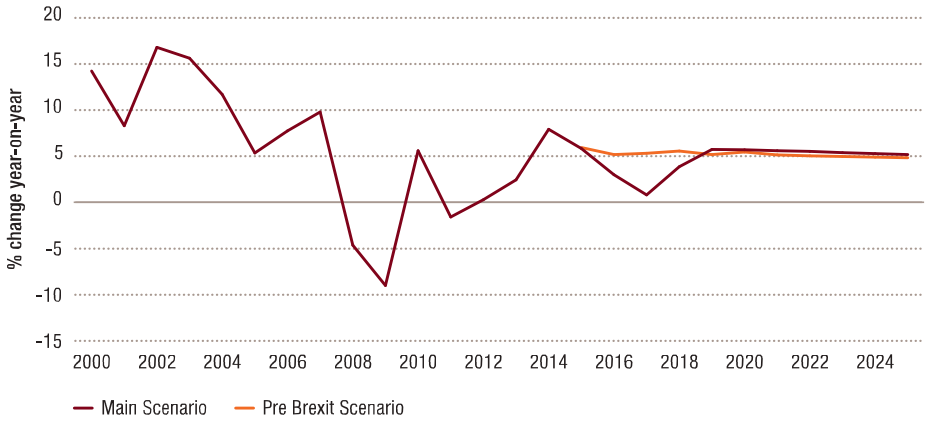
- The decision by the UK public to leave the EU has shaken the property market. We anticipate a marked slowdown as a result, with house price growth decelerating to 3% in 2016 and 1% in 2017 in our main scenario. But we are not projecting a major house price crash, and the downturn in house price growth due to the Brexit vote is expected to be only temporary with a gradual upturn resuming from 2018 onwards (see Figure 1.2).
- After this initial dip in UK house price growth, our main scenario projects a gradual recovery, with price growth picking up again to around 4% in 2018 and 6% in 2019. Thereafter, we expect growth to average around 5-6% per annum from 2020 to 2025 as persistent supply shortages keep house prices rising faster than earnings on average.
- The impact of Brexit will vary by region, but we expect it to be most acute in the London market. By 2018, we estimate house prices in London could be around £60,000 lower than if the UK had voted to remain; this contrasts to a difference of around £10,000 in Scotland and just £8,000 in the North East. Of course, there are many uncertainties around these central estimates so these projections can only be taken to be illustrati t this early stage.
- But we would stress that these are estimated differences from an expected steady upward path for regional house prices without Brexit. In our main scenario, the absolute level of house prices should still be higher in all regions in 2018 than in 2015 despite the dampening effect of the Brexit vote.

- Our new research into housing affordability for generation rent shows that buyers may now have to save for 19 years in order to buy their first home (assuming the deposit has to be raised entirely from their own savings without family assistance). In 2000, the same group would have been able to buy after saving for just 6 years; in 1990, it took only around 2 years.

- The affordability analysis shows a huge disparity in outcomes between renters and those 20-39 year olds who have already managed to get a foot on the housing ladder. This group has been largely insulated from the deterioration in affordability due to capital gains made on their existing homes.

- The good news for generation renters is that Brexit may actually help them get on the property ladder slightly sooner as we expect it to slow the pace of house price growth. However, the effect is small, as we estimate a generation renter starting to save in 2016 without family assistance might now be able to buy in 2035, rather than 2037 if the UK had voted to remain. This also assumes that they do not lose their job as a result of a Brexit-related slowdown (though it does allow for some reduction in their real income growth).

Figure 1.2 – UK house price inflation: main scenario projections with and without Brexit



Source: ONS historic data, PwC analysis

The Northern Powerhouse – even more of a priority after Brexit

As we discuss in detail in Section 4 of this report, average income levels in the Northern regions of England have lagged behind the UK average for decades, in part reflecting relati ly low average levels of skills and R&D spending in these areas. But employment growth has been stronger in the North West in the past two years and inward investment levels have been relatively high in Northern regions in some recent periods.

Uncertainties relating to Brexit could dampen growth in all UK regions over the next few years, but the EU vote has also focused renewed attention on the need for increased investment in the Northern Powerhouse to boost infrastructure, skills and innovation. Such investment would be of particular value in promoting the world class business clusters which already exist in sectors such as advanced manufacturing and services or in the promotion of new clusters.

There also need to be measures to reduce inequalities within the North, with some rural areas and smaller towns doing less well than major cities like Manchester. Connectivity is of vital importance; within the Northern Powerhouse, between the North and London and between the North and the rest of the world.

Given this additional investment, we think the North of England could resume positive employment growth after the initial Brexit shock fades. Our analysis suggests the potential for almost 200,000 extra jobs in the Northern Powerhouse regions by 2025 relative to 2015 levels.

2 – UK Economic prospects after Brexit

Key points

- UK economic growth had slowed somewhat to around 2% before the EU Referendum, but the vote to leave the EU could lead to a significant f ther slowdown.
- In our main scenario, we now project UK growth to slow to around 1.6% in 2016 and 0.6% in 2017 due to the increased political and economic uncertainty following the 'Brexit' vote. The UK would narrowly avoid recession in this scenario, although risks are weighted to the downside. Businesses need to make contingency plans for these alternative outcomes.
- The main reason for the slowdown is an expected decline in business investment, particularly from overseas in areas like commercial property, due to uncertainty about the UK's future trading relationships with the EU and other key trading partners.
- Consumer spending growth is projected to hold up better, but will still slow from previous strong rates, dropping to around 1.3% in 2017 in our main scenario. This reflects the impact of a weaker pound in pushing up import prices and squeezing the real spending power of households, as well as slower jobs growth.
- The weaker pound should also boost net exports, however, which should move from being a negative drag on growth in 2015 to a positive contributor in 2017. This should also see the UK current account deficit begin to shrink from recent high levels.
- Service sector growth will slow but should remain positive in 2016-17, but construction will suffer from lower investment levels. Capital goods manufacturers will suffer for the same reason, but some manufacturing exporters will benefit from the weaker pound.
- We project that London will remain the fastest growing region but its pace of expansion could slow from around 3% in 2015 to just over 1% in 2017. Other regions will see even more modest growth in 2017, though we do not predict negative growth in any region in 2017 in our main scenario.
- The UK recovery is also exposed to global risks related to possible problems in China and some other large emerging economies leading to further volatility and weakness in international financial markets. However, there are also upsides associated with the gradual recovery we have seen in the Eurozone economy, which we expect to be only slightly dampened by Brexit.
- The Bank of England seems likely to relax monetary policy in the short term through a mixture of lower interest rates, asset purchases and credit easing, which should help to support growth.
- We would also expect fiscal policy to be reasonably supportive, with public borrowing allowed to rise to take the strain of slower growth and possible cuts in corporation tax rates to support business investment.

Introduction

In this section of the report we describe recent developments in the UK economy and review future prospects. The discussion covers:

Section 2.1	Recent developments and the immediate impact of Brexit
Section 2.2	Economic growth prospects after Brexit: national, sectoral and regional
Section 2.3	Outlook for inflation and real earnings growth
Section 2.4	Monetary and fiscal policy options
Section 2.5	Summary and conclusions

2.1 Recent developments and the immediate impact of Brexit

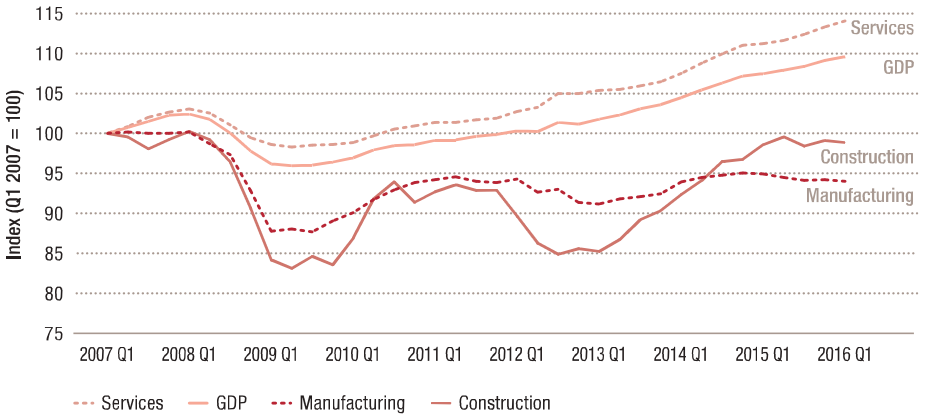
UK economic growth slowed from around 3% in 2014 to around 2% in the year to Q1 2016. This slowdown reflects sluggish global growth as well as, more recently, uncertainty related to the outcome of the EU Referendum.

The general pattern, as shown in Figure 2.1, was for services sector growth to remain relatively strong, while the recoveries in manufacturing and construction have stalled recently lso been seen in the generally stronger trends in purchasing managers' indices (PMIs) for services and manufacturing, although the latter did see a pick-up in June ahead of the referendum while the services PMI fell back somewhat (see Figure 2.2).

Consumer spending remained relatively robust in the run-up to the referendum, but business investment growth turned negative in late 2015 and early 2016. Commercial property transactions and financial market deals both fell back significantly as investors waited for the EU referendum result.

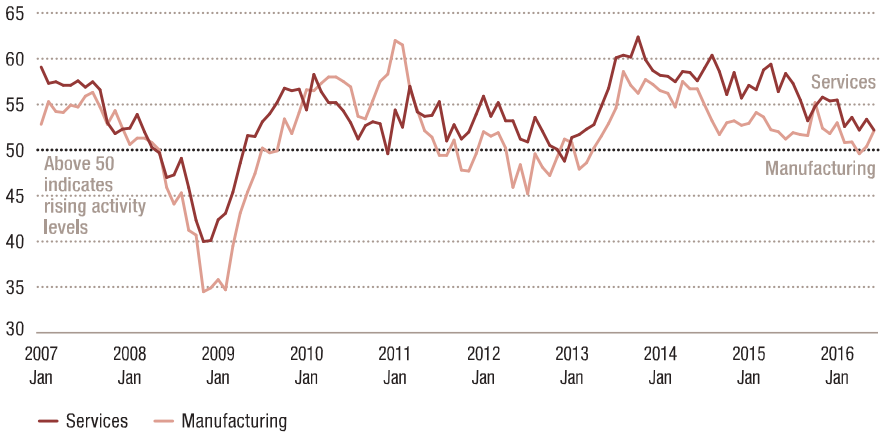
Following the vote to leave the EU on 23rd June, the most immediate effects were seen in financial markets. Most obviously there was a sharp fall in sterling (see Figure 2.3), particularly against the dollar where it fell to its lowest levels since the mid-1980s. The fall against the euro was less marked, remaining within the normal trading zone of recent years (although lower than it had been previously during 2016 as the chart shows).

Figure 2.1 – Sectoral output and GDP trends



Source: ONS

Figure 2.2 – Purchasing Managers' Indices of business activity



Source: Markit/CIPS

Stock markets have also been very volatile, with the FTSE 100 first falling and then rising in the week after the referendum. The rapid recovery seems to reflect a number of factors, including:

- The FTSE 100 having a heavy weight of global multinationals influenced by wider international trends not just what is happening in the UK. The more domestically-focused FTSE 250 saw a larger fall though it has also recovered to a more modest degree from the initial shock (see Figure 2.4).

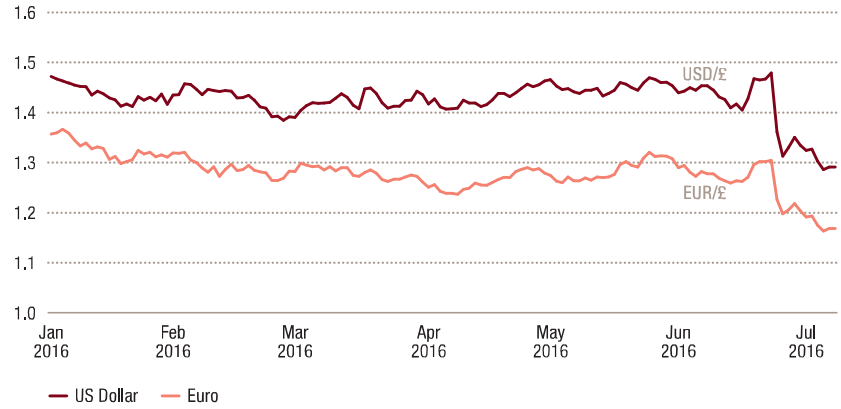
- The weak pound raised the value of overseas earnings in sterling, which again particularly supported the FTSE 100 where these overseas earnings are more important than for the FTSE 2050.

- Gilt yields fell sharply and remain very low, in part due to a flight to safety and in part due to lower expected official interest rates in the UK following Brexit. This implied a rise in the price of bonds, which made equities look cheaper by comparison and so supported their rebound from initial post-Brexit lows.

- There has been particular weakness in commercial property funds, leading some of them to suspend investor withdrawals in early July to prevent forced sales of illiquid assets. The Bank of England is monitoring this situation carefully for any signs of further contagion.

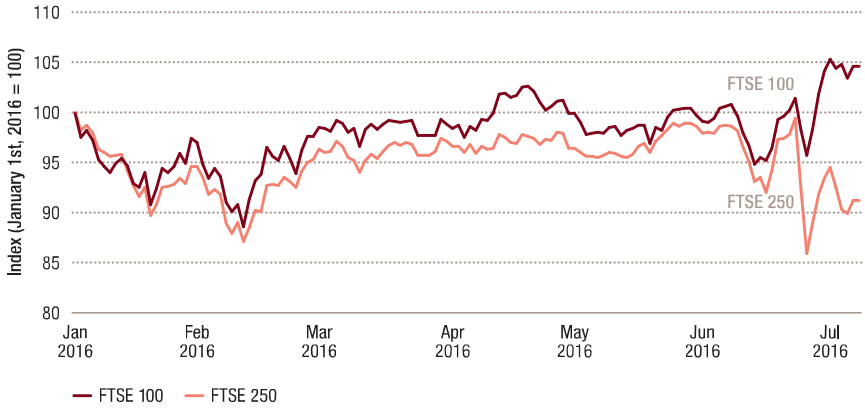
It would be wrong to draw overly strong conclusions from these early market gyrations, and we would expect continued financial volatility going forward. But some of these movements – a weak pound and lower interest rates – seem likely to be lasting effects of Brexit and are factored into our view of future UK economic prospects.
T
less clear at this early stage.

Figure 2.3 – US dollar and euro exchange rates against the pound



Sources: Thomson Reuters Datastream

Figure 2.4 – UK equity market indices



Source: Thomson Reuters Datastream

2.2 Economic growth prospects after Brexit: national, sectoral and regional

Prior to the Brexit vote, we were expecting UK growth to dip to 1.9% in 2016 before recovering to 2.3% in 2017. Following the EU referendum result, we have revised down our growth projections significantly for the second half of 2016 and 2017, with the level of GDP being around 2.5% lower by the end of 2017 than in our previous main scenario, which was conditioned on the UK voting to remain in the EU. This produces the average annual growth rates shown in Table 2.1[1].

Overall, we still expect growth to remain positive on average in 2017, with the economy narrowly avoiding recession and starting to recover later next year as negotiations with the EU proceed. We assume here that monetary policy is supportive (as discussed further in Section 2.4 below), public borrowing is allowed to rise in the short term to absorb some of the impact of slower growth, and that some progress is made during 2017 on negotiating a free trade deal with the EU, even though all the details of this are unlikely to be agreed until later.

Consumer spending growth remained strong in the first half of 2016, but we expect a moderation in this later in 2016 and into 2017, so that annual growth falls to around 1.3% next year. This reflects a squeeze on real earnings growth from a stronger pound raising import prices, as well as weaker employment and, as discussed in detail in Section 3 below, slower house price growth.

Table 2.1 - PwC main scenario for UK growth and inflation

% real annual growth unless stated otherwise	2015	2016p	2017p
GDP	2.2%	1.6%	0.6%
Consumer spending	2.6%	2.5%	1.3%
Government consumption	1.4%	1.4%	0.8%
Fixed investment	3.3%	-1.4%	-4.6%
Domestic demand	2.5%	1.4%	0.3%
Net exports (% of GDP)	-0.5%	-0.2%	0.3%
CPI inflation (%: annual average)	0.0%	0.7%	1.8%

Source: ONS for 2015, PwC main scenario projections for 2016-17

The main drag on growth will come from business investment, which had already weakened before the referendum and is likely to be particularly hard hit by the vote to leave the EU. This will be particularly true of foreign investment in commercial property and in sectors aimed at accessing the EU single market. While we assume some kind of free trade agreement is eventually reached with the EU, this will take time and (given the need to increase control over immigration) will almost certainly involve some reduction in access to the EU single market relative to the current position. Even if tariffs on goods are largely avoided, non-tariff barriers are likely to increase.

Government consumption growth will be less affected, but is likely to remain moderate in line with previously announced plans (although these could be revised in November's Autumn Statement).

UK net exports may move in a more favourable direction, making a positive contribution to GDP growth in 2017 as import demand weakens and the fall in the pound helps exports and import substitutes to become more competitive. This should also help to moderate the large current account deficit, which helps to explain the weakness of sterling.

Overall, our growth projections are broadly similar to the latest average of independent forecasters, which see UK growth falling to around 0.4% in 2017. But all economic projections are subject to particularly large uncertainties at present after the shock of the Brexit vote.

1 These projections are calibrated to be broadly consistent with the 'Free Trade Agreement' (FTA) scenario in our March 2016 report for the CBI on the economic implications of leaving the EU, which is available here: http://www.pwc.co.uk/services/economics-policy/insights/implications-of-an-eu-exit-for-the-uk-economy.html

Alternative growth scenarios – businesses need to make contingency plans

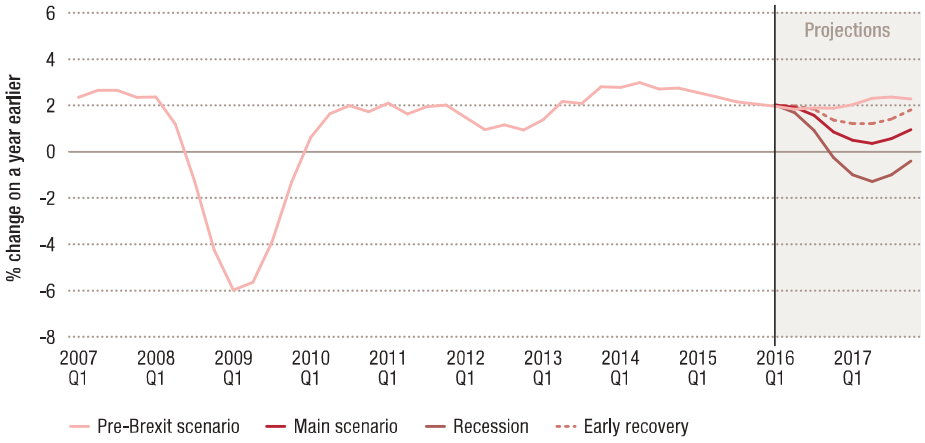
To reflect these uncertainties, we have also considered two alternative UK growth scenarios, as shown in Figure 2.5.

- Our '**early recovery**' **scenario** projects growth to dip in the next few quarters before picking up again to around 1.5% on average in 2017. This is a relatively optimistic scenario which assumes that good early progress is made on retaining access to the EU single market and that there are favourable trends in US and euro area growth.

- On the other hand, our '**recession scenario**' sees UK GDP growth fall to around -1% in 2017 as the global outlook worsens and there is little progress in early negotiations with the EU, suggesting that the UK may have to fall back on WTO rules with consequent imposition of tariffs on trade with the EU. This would deepen and prolong the period of uncertainty around the outcome of Brexit, reducing investment, jobs and growth.

We do not believe that these two alternative scenarios are the most likely outcome, but they are certainly possible and, at present, risks do appear to be weighted to the downside given the political and economic uncertainties posed by the EU referendum result. Businesses would therefore be well advised to make appropriate contingency plans for such less favourable outcomes, but without losing sight of the more positive possibilities for the UK economy should these downside risks not materialise.

Figure 2.5 – Alternative UK GDP growth scenarios



Source: ONS, PwC scenarios

More generally, companies should be making detailed contingency plans for the immediate impact of Brexit[2] on all aspects of their businesses, covering the kind of questions listed in Table 2.2.

Table 2.2: Key issues and questions for businesses preparing for Brexit

Issues	Implications	Questions
Trade	The EU is the UK's largest export partner, accounting for around 45% of total UK exports – leaving the EU is likely to make trade with EU more difficult.	• How much do you rely on European countries for revenue growth? • Have you reviewed your supply chain to identify the impact of tariffs on your procurement? • Have you identified which third party contracts would require a renegotiation in the event of a Brexit?
Tax Contributions	The UK would no longer be required to make a financial contribution to the EU and would gain more control over VAT and some other taxes.	• Have you thought about the impact of potential changes to the EU tax framework? • Have you upgraded your systems to deal with a significant volume of tax changes?
Regulation	The UK is subject to EU regulation. Brexit may mean less red tape. It could also mean that UK businesses could have to adapt to a different set of regulations, which could be costly.	• Have you quantified the regulatory impact of Brexit to keep your stakeholders up-to-date? • How flexible is your IT infrastructure to deal with potential changes to Data Protection laws? • How ready is your compliance function to deal with potentially new reporting requirements arising from Brexit?
Sectoral effects	The UK is the leading European financial services hub, which is a sector that could be significantly affected by Brexit. Other sectors which rely on the EU single market will also feel a strong impact.	• Have you briefed potential investors on the impact of Brexit for your sector and organisation? • How up-to-date are your contingency plans in place to deal with Brexit? • Are you aware of the impact of illiquidity and volatility in financial markets on your capital raising plans?
Foreign direct investment	FDI from the EU made up around 46% of the total stock of FDI in the UK in 2013. Brexit could put this inbound investment at risk.	• How much do your rely on FDI for growth? • Have you considered alternative sources of funding aside from banks? • How are your competitors responding to the risk of Brexit? • Have you informed your investors on your plans for a post-Brexit UK?
Labour market	The UK may change its migration policies. Currently EU citizens can live and work in the UK without restrictions. Business will need adjust to any change in this regime.	• How reliant is your value chain on EU labour? • Have you communicated with your UK employees from elsewhere in the EU? • Have your compliance function considered the additional cost of hiring foreign labour?
Uncertainty	Uncertainty has increased since the referendum and may continue into the negotiation period.	• Can you manage volatility in the Sterling exchange rate? • Have you communicated your stance on Brexit to your key stakeholders, customers and suppliers? • Is your organisation ready for a worst-case scenario where there is a prolonged period of uncertainty?

2 For more material on the potential impact of Brexit on your business, please see our EU Referendum hub here: http://www.pwc.co.uk/the-eu-referendum.html

Construction hardest hit, but all sectors likely to slow due to Brexit

The sector dashboard in Table 2.3 shows the actual growth rates for 2015 along with our projected growth rates for 2016 and 2017 for five of the largest sectors within the UK economy. The table also includes a summary of the key issues affecting each sector.

The outlook is clearly stronger for private non-financial services than other sectors, but all are likely to be negatively affected by leaving the EU.

Construction may be hardest hit due to its reliance on large scale capital investment projects that may be particularly prone to be delayed or even cancelled due to uncertainty following the vote to leave the EU. Commercial property is also being hit hard, particularly in London. Manufacturers of capital goods may also be hard hit for the same reasons, although some exporters will gain from the weaker pound.

Financial services companies could also be affected by any loss of access to EU markets, notably through the possible loss of 'passporting' rights for UK-based firms[3].

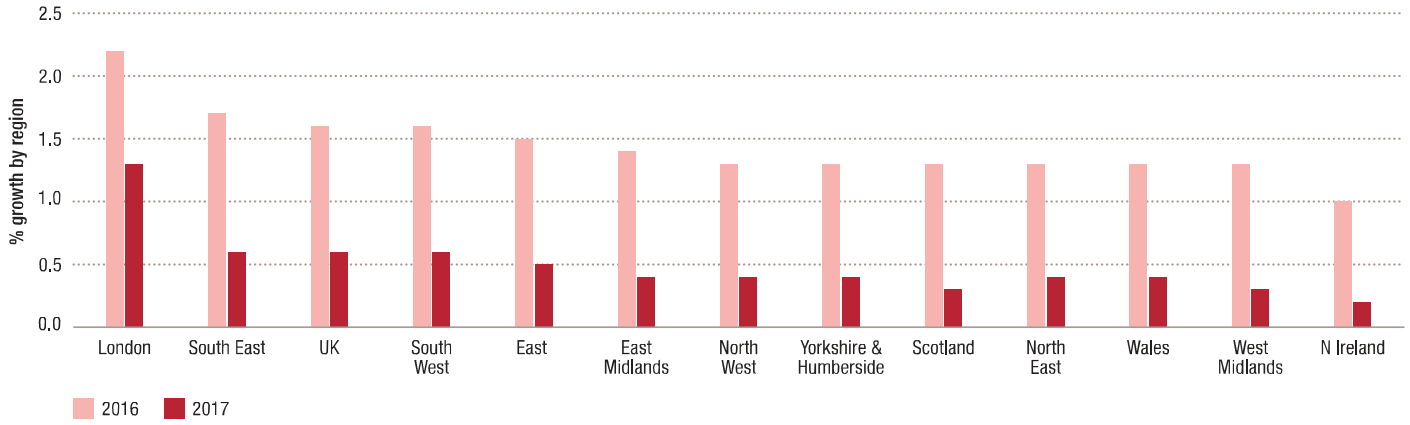
Table 2.3: UK sector dashboard

	Growth			
Sector and GVA share	2015	2016	2017	Key issues/trends
Manufacturing (10%)	-0.1%	-0.7%	-1.0%	Manufacturing PMI rose in June, but activity trends generally weak over past year Capital goods manufacturers vulnerable to fall in investment after vote to leave EU But exporters should gain from weaker pound, limiting the fall in total output
Construction (6%)	4.2%	-0.7%	-2.0%	The construction sector fell back in the second half of 2015 and early 2016, with the June PMI the weakest in seven years Our projections reflect the high vulnerability of construction projects to delay or cancellation after Brexit vote
Distribution, hotels & restaurants (14%)	4.6%	3.8%	1.2%	ONS figures show that retail sales volume growth was healthy up to May, but consumer confidence and spending may be hit by vote to leave Prices continue to fall on the high street and online due to fierce competition Slower real earnings growth and possible job cuts could hit retail, hotels and restaurant spending after vote to leave EU
Business services and finance (32%)	2.9%	2.1%	1.1%	Business services and finance sector saw some slowdown in early 2016 and could be vulnerable to shift of some financial services out of London/ UK due to Brexit Financial sector also faces regulatory challenges but business services have been stronger and should recover after Brexit
Government and other services (23%)	0.3%	1.4%	1.2%	Civil service and local authority spending is expected to be cut back in real terms over the next few years, but growth should remain positive for the NHS and schools Tax and spending plans to be reviewed in Autumn Statement
Total GDP	2.2%	1.6%	0.6%	

Sources: ONS for 2015, PwC for 2016 and 2017 main scenario projections and key issues.
These are five of the largest sectors but they do not cover the whole economy - their GVA shares only sum to around 85% rather than 100%.

3 The potential impact on financial services was considered in detail in our April 2016 report for TheCityUK, which can be accessed here: http://www.pwc.co.uk/industries/financial-services/insights/leaving-the-EU-implications-f -the-UK-financial-services-sector.html

Figure 2.6 – PwC main scenario for output growth by region in 2016 and 2017



Source: PwC analysis

Regional prospects: all parts of the UK likely to see slower growth due to Brexit

London is expected to continue to lead the regional growth rankings in 2016, expanding by around 2.2% as shown in Figure 2.6. Most other regions are expected to expand at rates closer to the UK average of around 1.6%, but Northern Ireland is expected to lag behind somewhat with growth of around 1%.

More marked slowdowns are expected in all regions in 2017 as the effects of the vote to leave the EU come through, though we are not projecting negative growth in any region in our main scenario. Growth in London might fall to just over 1% in 2017, while it could be close to zero in Northern Ireland.

It is important to note that regional output data are published on a much less timely basis than national data. As a result, the margins of error around these regional projections are even larger than for the national growth projections and so they can only be taken as illustrative of broad directional trends.

There is also a strong case to look at a broader range of indicators of regional economic performance, as discussed further in Section 4 of this report. This focuses in particular on the relative performance and prospects of the Northern regions of England. The geographically divided nature of the EU vote arguably reinforces the case for further investment to promote growth in the Northern Powerhouse and other regions outside London. It could also raise further issues around devolution in Scotland and elsewhere.

2.3 Outlook for inflation and real earnings growth

Consumer price inflation (CPI) remained low at 0.3% in the year to May. The major cause of this persistently subdued inflation has been the low level of global prices for oil and other commodities, but unit la lso remained low despite the tightening of the labour market in recent years. Looking ahead, however, the 12 month inflation rate will tend to rise back to target as earlier commodity price declines fall out of the index and the effects on import prices of the recent fall in the pound feed through. But weaker demand due to the vote to leave the EU will of this to some degree in 2017 and beyond.

Alternative inflation scenarios

In our main scenario we are projecting an average consumer price inflation rate of 0.7% in 2016, which we have revised up since our last Economic Outlook report in the face of the recent weakness of the pound and a modest recovery in oil prices since February. We project a gradual rise back to close to the 2% target rate by the end of 2017 (see Figure 2.7) as these commodity price effects are assumed to fall out of the 12 month inflation rate calculation and the effect of the recent fall in the pound comes through. But this is subject to particularly significant uncertainties at present due to the offsetting effects of the vote to leave on the pound and on aggregate demand.

To capture these we have also considered two alternative scenarios for UK inflation:

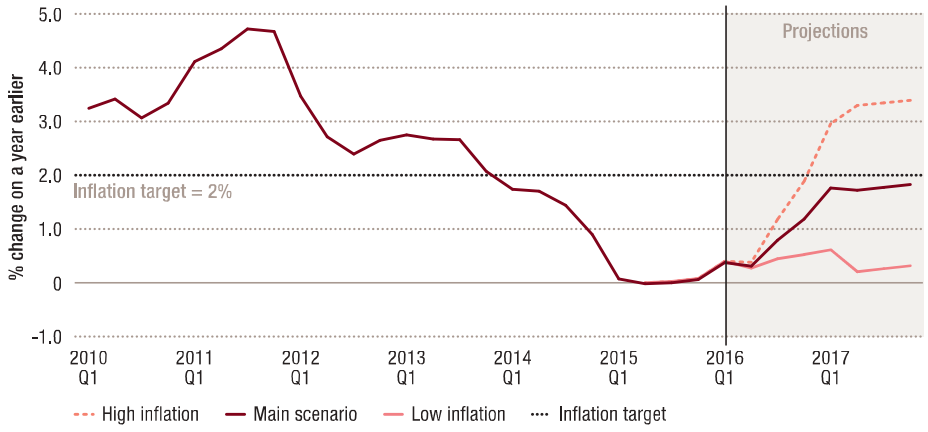
- In our '**high inflation' scenario** we project inflation to rise to over 3% in 2017 as a result of the weaker pound and a possible pick-up in global commodity prices if other economies grow more strongly.
- In our '**low inflation' scenario**, by contrast, the UK and Eurozone economies weaken by more in the aftermath of Brexit, as do global commodity prices. In this case UK inflation could remain close to zero.

As with our GDP growth scenarios, these two alternative variants are not as likely as our main scenario. But given recent volatility and uncertainty, businesses should plan for a broad range of outcomes after Brexit.

Consumer price inflation exceeded earnings growth for six consecutive years following the onset of the 2008-9 recession, which was in marked contrast to pre-crisis norms. Positive real earnings growth resumed in 2015 and early 2016 as consumer price inflation fell to close to zero, but nominal earnings growth in cash terms was still only around 2%, which remains weak by historical standards.

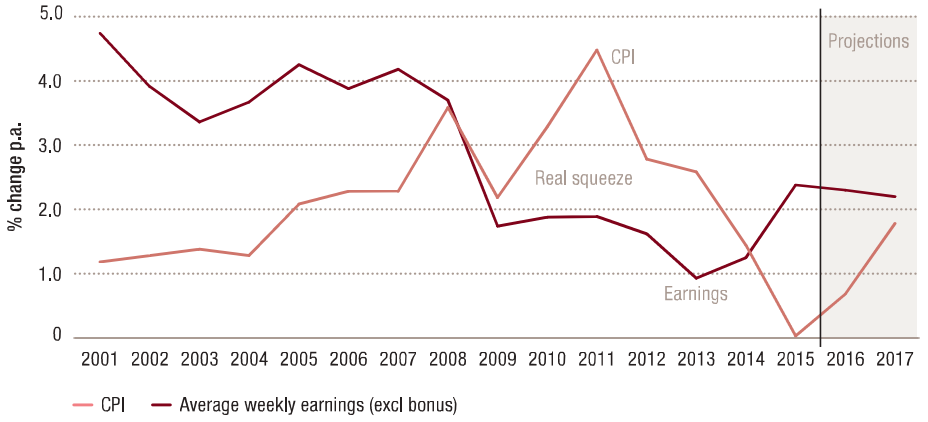
We had been assuming a gradual pick-up in earnings growth in 2016-17, but this is now much less clear after the vote to leave the EU. On the one hand, somewhat higher consumer price inflation due to the weaker pound could feed through into higher nominal earnings growth, but on the other hand this could be offset by weaker economic growth and so labour demand after Brexit. Balancing these two effects, our preliminary projection is that earnings growth remains fairly flat in 2016-17 at just over 2% in cash terms, with real earnings growth declining slightly in 2016 and more markedly in 2017. But there are considerable uncertainties around any such projections at present.

Figure 2.7 – Alternative UK inflation (CPI) scenarios



Source: ONS, PwC scenarios

Figure 2.8 – CPI inflation vs average earnings growth



Source: ONS, PwC analysis

2.4 Monetary and fiscal policy options

Monetary policy expected to be loosened in short term

The Financial Policy Committee (FPC) has already taken early action by eliminating the 0.5% countercyclical capital buffer for UK banks. The FPC estimates that this could add up to £150 billion to bank lending capacity, although there is no guarantee that this will be used if the demand for loans is not there, or if banks remain understandably cautious about new lending following the Brexit vote.

The Monetary Policy Committee (MPC) is expected to loosen monetary policy over the summer, as has already been signalled by the Governor of the Bank of England. This could combine a number of measures including rate cuts, asset purchases and credit easing (e.g. through extension of the Funding for Lending Scheme).

We would not expect this action to offset all of the negative demand effects of the vote to leave the EU, but they should offer continued support to asset prices and could dampen the blow to business investment and economic growth to some degree.

Public borrowing higher as growth slows

The UK budget deficit stood at around £75 billion in 2015/16 and initial evidence is that it was falling only very slowly in early 2016/17 even before the EU referendum. After the vote to leave, it seems likely (as the Chancellor has recognised) that budget deficit projections will need to be revised up significantly in both the short term and the medium term. We would expect the fiscal automatic stabilisers[4] to be allowed to operate in full to dampen somewhat the potential negative impact on growth from the vote to leave the EU. The former Chancellor

lity of further corporate tax cuts in the medium term, on top of existing plans to reduce the main rate to 17% by 2020, in order to incentivise inward investment in particular after Brexit. But it remains to be seen if the new government will pursue this proposal.

Specific fiscal policy measures and updated official public borrowing projections have been delayed until the Autumn Statement. We will update our own public borrowing projections ahead of this statement in the light of emerging evidence on the fiscal impact of the vote to leave the EU.

2.5 Summary and conclusions

UK economic growth slowed a little in 2015 and early 2016, but remained close to its long-term trend at around 2% per annum prior to the EU referendum. However, the vote to leave seems likely to lead to a significant slowdown in the UK economy.

In our main scenario, we project UK growth to fall to around 1.6% in 2016 and around 0.6% in 2017, narrowly avoiding recession. This assumes some monetary loosening to support growth and reasonable early progress over the next 12-18 months in negotiating a free trade deal with the EU. It also assumes no major new adverse shocks to the global or EU economies.

The main reason for this significant slowdown in UK growth is projected to be a downturn in business investment, which will particularly hit the construction, commercial property and capital goods sectors. Consumer spending growth is also projected to slow to just over 1% in 2017 from close to 3% recently, reflecting slower real income growth (partly due to higher import prices) and possible job losses. But stronger net exports, helped by the weaker pound, should dampen the scale of the fall in overall GDP growth.

There are considerable uncertainties around any such projections at present, with risks being weighted to the downside until the negotiating position with the EU becomes clearer. But there could also be longer term opportunities for UK businesses from trade with other parts of the world if they can ride out the short term economic storm. This will require companies to perform a stocktake of the possible impacts of Brexit across all areas of their operations in order to identify and respond to consequent risks and opportunities as early and effectively as possible.

4 This refers to the fact that, as economic growth slows and employment declines, so social security benefit and tax credits payments tend to rise automatically and average effective tax rates tend to fall.

3 – UK Housing market outlook

Introduction and key findings

In this section, we review recent trends in the housing market and present projections for house price growth in the UK and its regions. We also present new research that outlines the dramatic changes in the affordability of housing for 20-39 year olds (who we refer to as "generation rent").

Our key findings are:

- The decision by the UK public to leave the EU ('Brexit') has shaken the property market. We anticipate a marked slowdown as a result, with house price growth decelerating to 3% in 2016 and 1% in 2017 in our main scenario. But prices should still rise – we are not projecting a house price crash in our main scenario, although there are considerable uncertainties around any such projection and risks appear to be weighted to the downside at present.

- After this initial dip in UK house price growth, our main scenario projects a gradual recovery, with price growth picking up again to around 4% in 2018 and 6% in 2019. Thereafter, we expect growth to average around 5-6% per annum from 2020 to 2025 as persistent supply shortages keep house prices rising faster than earnings on average.

- The impact of Brexit will vary by region, but we expect it to be most acute in the London market. By 2018, we estimate house prices in London could be around £60,000 lower than if the UK had voted to remain; this contrasts to a difference of around £10,000 in Scotland and just £8,000 in the North East.

- But we would stress that these are estimated differences from an expected steady upward path for regional house prices without Brexit. In our main scenario, the absolute level of house prices should still be higher in all regions in 2018 than in 2015 despite the dampening effect of the Brexit vote.

- Our new research into housing affordability for generation rent shows that buyers may now have to save for 19 years in order to buy their first home (assuming the deposit has to be raised entirely from their own savings without family assistance). In 2000, the same group would have been able to buy after saving for just 6 years; and in 1990 it took only around 2 years.

- The affordability analysis shows a huge disparity in outcomes between renters and those 20-39 year olds who have already managed to get a foot on the housing ladder. This group has been largely insulated from the deterioration in affordability due to capital gains made on their existing homes.

- The good news for generation renters is that Brexit may actually help them get on the ladder slightly sooner as we expect it to slow the pace of house price growth. Unfortunately, the effect is small, as we estimate a generation renter starting to save in 2016 can now buy in 2035, rather than 2037 if the UK had voted to remain.

The discussion below begins by briefly reviewing recent housing market developments (Section 3.1) and then goes on to assess future UK and regional house price prospects, taking into account the potential impact of Brexit (Section 3.2). Section 3.3 presents our new research into the affordability of housing for generation rent. Further details of our modelling work are contained in the technical annex.

3.1 Recent housing market developments

The EU referendum result has been a shock to the UK economy and the housing market. Shares in homebuilders have been amongst the worst performers on the FTSE. Some estate agents have issued profit warnings and predicted significantly lower revenue this year because of the referendum result. Anecdotal evidence suggests that buyers are pulling out of transactions and sellers are cutting asking prices on UK property.

The main reason for this is increased political and economic uncertainty, which could impact the housing market through four key channels:

1. The deterrence of foreign investment in the UK (which particularly affects the central London market, but also has wider economic impacts).

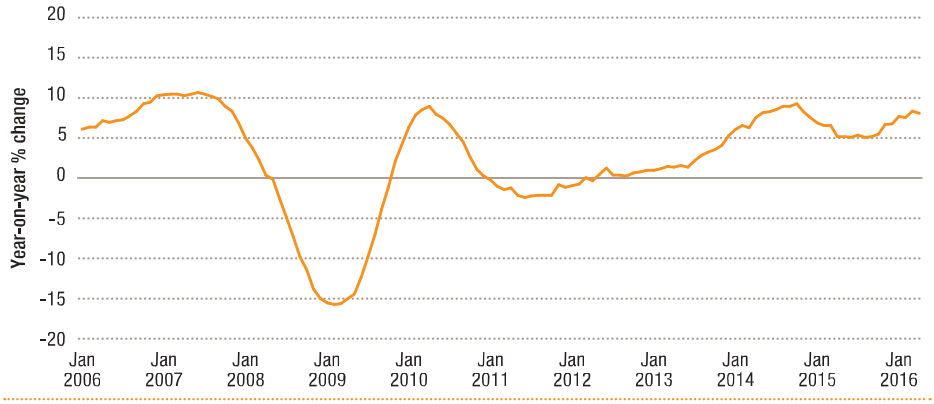
2. Uncertainty regarding the future of EU nationals in the UK (and those considering moving to the UK).

3. A reduction in consumer confidence leading to buyers deferring or renegotiating transactions.

4. Turbulence in the UK banking sector, which provides the vast majority of mortgage funding for housing transactions.

Prior to the referendum, house prices in the UK were growing briskly lowdown of early 2015 proved temporary and, by March 2016, UK house prices were growing at 8.5% per annum and the average house was valued at around £209,000[1]. This was supported by an upsurge in transactions in February and March as buyers rushed to avoid the new stamp duty surcharge for properties that are not the buyer's principal residence, which was introduced in April 2016.

Figure 3.1 – Annual UK house price rates of change (using new HPI)



Source: ONS

1 The house prices shown in Figure 3.1 and used throughout this article are from the new official House Price Index (HPI), first published by the ONS in June 2016. Due to changes in methodology, as explained in more detail in Box 3.1, this new data series has substantially different price estimates to the old ONS series. In particular, the new series has lower estimates of average house price levels, but still shows broadly similar trends over time.

3.2 House price prospects – the impact of Brexit

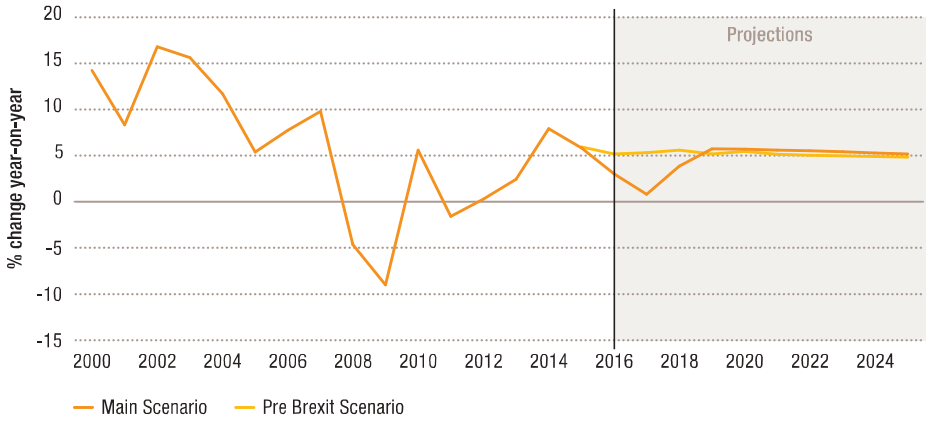
In this section, we present our projections for house price inflation in the UK and regional markets. We use econometric models to make our predictions. These link trends in prices to underlying economic drivers and use these relationships to project how prices may evolve in the future.

We changed our projections following the EU referendum result to reflect the new weaker economic outlook described in Section 2 above, and the likelihood of greater caution exercised by homebuyers and lenders. This allows us to compare the scenarios before and after the Brexit vote (see Figure 3.2).

In our new post-Brexit main scenario, we anticipate that the results of the EU referendum will weigh significantly on the market in the short term. UK house price growth is expected to decline from 6.0% in 2015 to 3.1% in 2016, followed by 0.9% growth in 2017. This contrasts to our 'pre-Brexit'[2] projections of 5.2% house price growth in 2016 and 5.3% in 2017. We expect the market to strengthen from 2019 onwards and it has the potential to slightly outperform the pre-Brexit scenario as weaker house building exacerbates the long running supply shortage. There is also some cyclical rebound in house price growth after the dip in 2016-18.

By 2018, the cumulative difference between house prices in our main scenario and our pre-Brexit scenario is around 8%. This is equivalent to a reduction of around £17,000 in the average UK house price when compared to the pre-Brexit scenario (see Table 3.1).

Figure 3.2 – UK house price inflation: main scenario projections with and without Brexit



Source: ONS historic data, PwC analysis

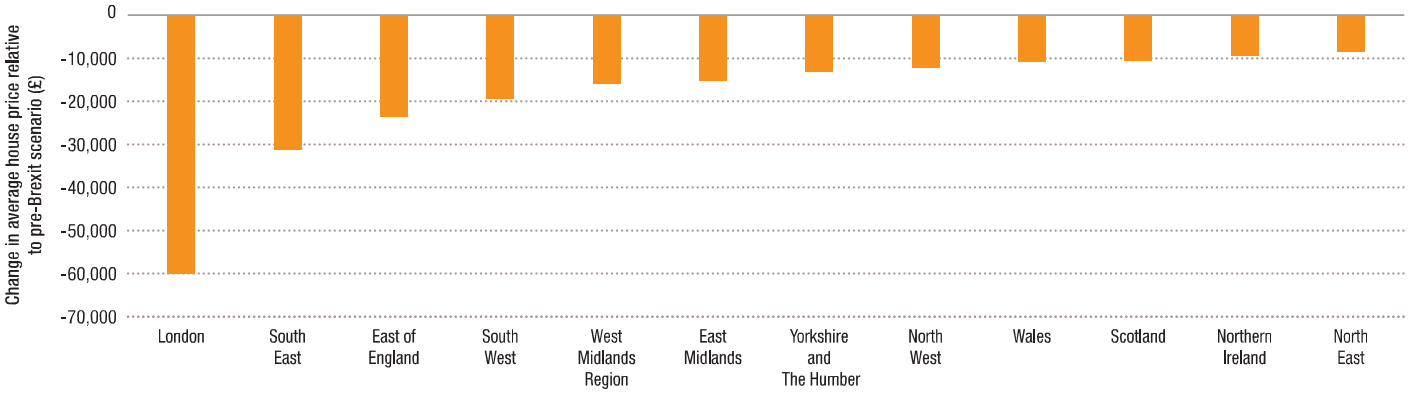
Table 3.1: UK house price inflation – the potential impact of the Brexit vote

Year	Main scenario	Pre-Brexit scenario	Difference (%)	Cumulative price difference (£)
2016	3.1%	5.2%	-2.1%	-£4,000
2017	0.9%	5.3%	-4.4%	-£13,000
2018	4.0%	5.6%	-1.6%	-£17,000
Total change (2016-18)	**8%**	**16%**	**-8%**	**-£17,000**

Source: PwC analysis based on ONS house price index

2 By 'pre-Brexit' we mean the projections we made prior to the vote to leave the EU on the assumption of the status quo continuing, not prior to the UK actually leaving the EU, which will not occur for some years.

Figure 3.3 – Cumulative house price impact of Brexit vote relative to pre-Brexit outlook (by 2018)



Source: PwC analysis based on ONS house price index

Looking at the regional picture, we expect Brexit will affect the London market more severely than other parts of the UK. London has a greater share of international buyers and residents, plus our regional GVA projections (see Figure 2.6 in Section 2) suggest that London could see a more significant short term reduction in growth than elsewhere due to Brexit.

Figure 3.3 shows the contrast in projected regional house prices in 2018 between the pre-Brexit scenario and our new main scenario. In London, we estimate that prices will be around £60,000 lower than if the UK had voted to remain (although they are still expected to grow relati to their 2015 level). The estimated difference is around £30,000 in the South East and £23,000 in the East of England. The relative fall in prices is expected to be under £20,000 for the South West, around £15,000 for the Midlands, and closer to £10,000 for other regions.

Despite this, our main scenario is that house prices will continue to grow in most regions. As set out in Table 3.2, Scotland is the only region where we anticipate prices declining in 2016-17 and this is only temporary.

Our regional projections for 2017 show a subdued market compared to the past three years. House price growth in 2017 is expected to be under 2% for all regions, and negative for Scotland, the Midlands, the North West and Yorkshire. From 2018 to 2020 we project in this main scenario that house prices will recover consistently across the UK. This is driven by an assumed recovery in credit conditions, earnings growth and also reflects underlying housing supply constraints.

Table 3.3 shows how these growth rates translate into projected regional house price values under our main scenario. Despite experiencing a relatively sharp downturn in price growth, London house prices remain on an upward track. Average prices in the capital are expected to reach around £530,000 by 2020, over three times the price of the average home in Yorkshire & the Humber and the North of England.

All of the figures presented above are those for our main scenario, but projecting house prices always involves significant uncertainties – particularly in the current environment after the Brexit vote. In the following sub-section we therefore present high and low house price growth scenarios out to 2025.

Table 3.2: Regional house price growth in PwC main scenario

Region	2015	2016	2017	2018	2019	2020
East of England	9.8%	5.7%	1.9%	4.0%	6.1%	6.0%
Yorkshire & The Humber	4.0%	1.1%	-0.6%	3.9%	5.2%	5.2%
South West	6.0%	3.7%	1.8%	4.1%	5.7%	5.7%
West Midlands	4.8%	1.6%	-0.2%	3.9%	5.3%	5.3%
London	10.2%	5.9%	0.6%	4.1%	6.0%	6.0%
North West	3.7%	0.6%	-0.7%	3.9%	5.3%	5.2%
South East	8.9%	5.2%	1.0%	3.9%	6.0%	6.0%
North East	2.3%	0.4%	0.0%	3.9%	5.0%	4.9%
East Midlands	5.5%	1.9%	-0.3%	4.0%	5.9%	5.8%
Wales	2.8%	1.3%	0.8%	3.9%	5.8%	5.8%
Scotland	4.0%	-1.6%	-0.4%	4.2%	5.7%	5.7%
Northern Ireland	7.3%	1.7%	0.2%	4.3%	4.8%	4.7%
UK average	**6.0%**	**3.1%**	**0.9%**	**4.0%**	**5.9%**	**5.8%**

Source: PwC analysis based on ONS house price index

Table 3.3: Regional house price values (£000's) in the main scenario

Region	2015	2016	2017	2018	2019	2020
East of England	240	254	258	269	285	302
Yorkshire & The Humber	142	143	143	148	156	164
South West	219	227	231	240	254	269
West Midlands	165	167	167	173	183	192
London	425	450	452	471	500	530
North West	140	141	140	145	153	161
South East	277	291	294	306	324	344
North East	121	122	122	127	133	139
East Midlands	160	163	162	169	179	189
Wales	139	140	142	147	156	165
Scotland	137	135	134	140	148	156
Northern Ireland	115	117	118	122	129	135
UK average	**198**	**204**	**206**	**214**	**227**	**240**

Source: PwC analysis based on ONS house price index

Alternative UK house price scenarios

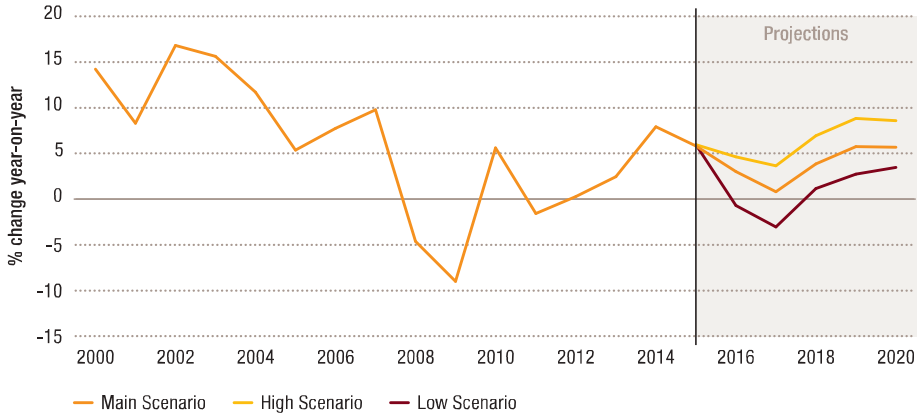
We have constructed two alternative house price inflation scenarios which capture a broad range of possible outcomes (see Figure 3.4).

Our **high scenario** reflects a resilient macroeconomic environment. Earnings growth is largely unaffected by the EU referendum outcome, housing stock growth weakens marginally in 2016 before rising thereafter, but there is further easing in mortgage lending as the Bank of England embarks on additional monetary and credit easing over the next few months. This combination of factors leads to a shallower downturn in house price growth in 2016-17 and stronger average growth of around 8% for the period 2020 to 2025.

Our **low scenario** reflects a more severe credit contraction associated with weak employment growth, falling real earnings and prolonged macroeconomic uncertainty this scenario a sharp contraction in housebuilding does apply some counterbalancing support for prices, but this is far outweighed by the other negati tors assumed here. In the medium-term, the low scenario assumes very modest real earnings growth and extended sluggishness in mortgage lending as Brexit uncertainty persists during a long and difficult trade negotiation with the EU.

As shown in Table 3.4, in our main scenario the average UK home reaches approximately £240,000 in 2020, while in the high scenario it could reach around £270,000. By contrast, in the low scenario, average UK house prices could fall to around £190,000 in 2017 before recovering to around £205,000 by 2020.

Figure 3.4 – Alternative UK house price inflation scenarios



Source: PwC analysis based on ONS house price index

Table 3.4: Alternative scenarios for UK average house prices (£000s)

Year	Low	Main	High
2015	198	198	198
2016	197	204	207
2017	191	206	215
2018	193	214	230
2019	198	227	250
2020	205	240	271

Source: PwC analysis based on ONS house price index

Box 3.1 – The revised ONS house price index

In June, the Office for National Statistics (ONS) published the first edition of their new official House Price Index (HPI). Previously, the Land Registry and ONS published separate indices but in recent years these have been diverging. The new HPI will replace both these indices by providing a single consistent series.

This new index was developed following a consultation in 2014, which highlighted the limitations of the previous ONS measure. The new methodology aims to address this with the following new features:

1. Inclusion of both cash sales and new dwellings to provide full coverage of the market.

2. Use of the geometric rather than the arithmetic mean when calculating average prices – this reduces the sensitivity of the index to very high value property transactions and, as a result, reduces average prices compared to the old ONS index.

3. A revised calculation process to ensure the index is representative of the current housing market.

4. Publication of average prices which are now comparable over time.

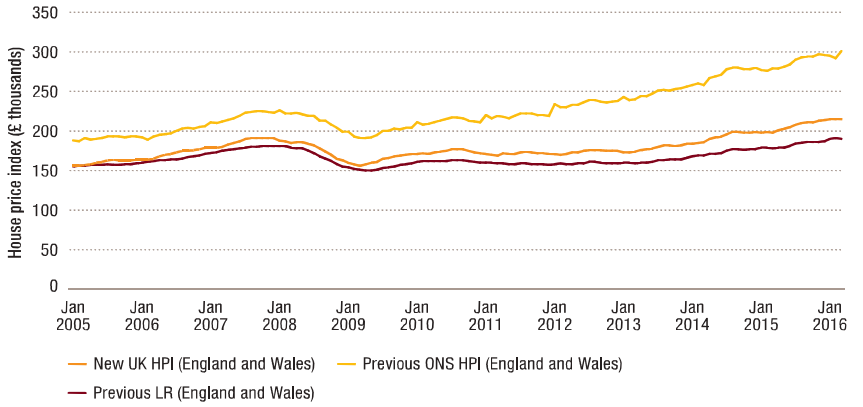
As Figure 3.5 shows, the new HPI lies in between the two previous indices.

Compared with the previous ONS HPI, this new index is consistently lower and suggests that house prices have grown at a slower rate in the past 5 years. The difference is significant as average prices for the new measure are £75,000 lower than the old ONS series. This seems primarily to reflect the lower weight given to high value property transactions (particularly in London) due to switching from arithmetic to geometric averaging. This switch was also a feature of the move from RPI to CPI to measure consumer price inflation and is generally regarded as more methodologically robust.

Compared with the old Land Registry index, the new HPI is slightly higher but has a similar trend over time. The main difference is due to the updated composition of properties on which the index is based. Previously, the Land Registry index was based on a set of properties from April 2000, whereas the new HPI is representative of the current market. The Land Registry index was also only for England & Wales.

The new HPI index will be published on a monthly basis going forward but there is a time lag, so the latest a lable data at the time of writing is for April 2016. The first official post-referendum data for July will not be published until mid-September, although other less comprehensive house price indices will be published before then by mortgage lenders and estate agents.

Figure 3.5 – Comparison of new UK HPI with old ONS and Land Registry (LR) indices



Source: ONS

3.3 Renting for a generation? Housing affordability trends for first time buyers

Over the past 12 months, we have published a series of pieces of research highlighting the housing situation for generation rent: the group of 20-39 year olds for whom home ownership is increasingly hard to reach. Since the millennium, the share of 20-39 year olds who rent privately has more than doubled from 20% to 50% and we anticipate that this rise will continue.

To better understand this fundamental change, we have developed a new measure of affordability that considers a broad range of drivers (see Table 3.5). As well as looking at house prices and earnings, we also consider bank lending behaviour and household savings rates.

The measure allows us to estimate how many years it would take a 20-39 year old first-time buyer to save a deposit for their first home. We have also considered 20-39 year old "second steppers" who already own a property and wish to upgrade (e.g. due to getting married or starting a family). The difference in our results for these two groups is clear.

Table 3.5: Key drivers of affordability

	Impact on first-time buyer affordability		Impact on second stepper affordability	
Rising house prices	↑	Leads to higher deposit and income requirements to buy	–	Broadly neutral due to capital gains made on current property
Stricter bank lending criteria	↓	Results in lower loan to value ratios offered, driving up deposit requirements	↓	Results in lower loan to value ratios offered, driving up deposit requirements
Interest rates	↓	Savings grow more slowly due to poor interest returns (though this does also make repaying mortgages easier once you have one)	↑	Savings grow more slowly due poor interest returns, but this also results in lower mortgage rates, allowing more capital repayments to be made on the mortgage
Falling income growth	↓	Reduces the amount that people can save	↓	Reduces the amount that people can save

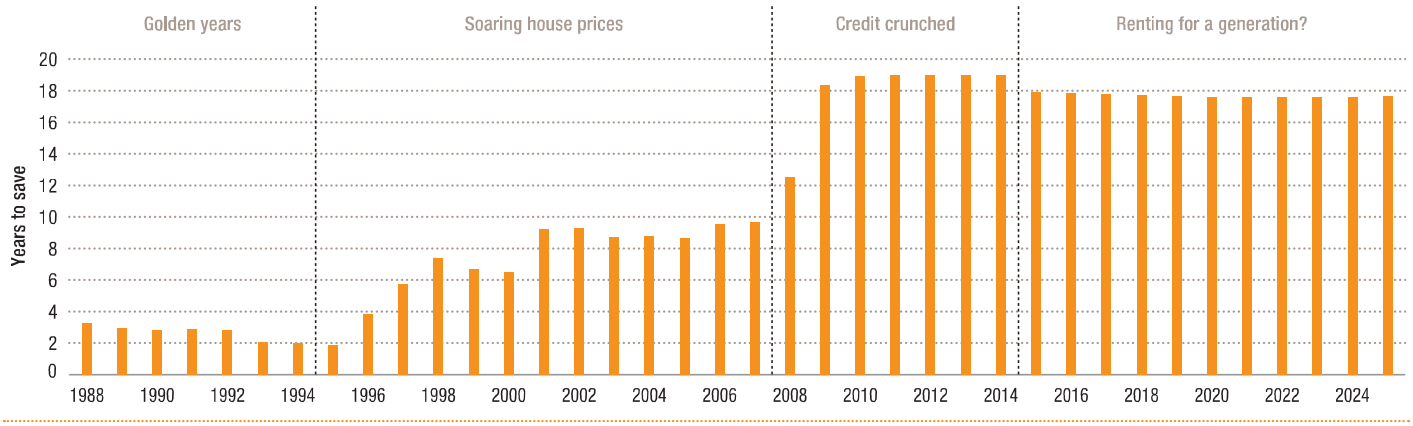
Renters looking to buy their first home

For a 20-39 year old on an average income who is looking to buy their first home, we estimate that, if they start saving in 2016, it will take around 19 years – almost two decades – to save the £115,000 average deposit that will be required to buy a property in 2035[3].

As Figure 3.6 illustrates, the affordability situation for those in generation rent has changed fundamentally over time, both due to the rapid house price increases either side of the millennium, and due to the credit crunch after 2007.

We can usefully divide the trends shown in Figure 3.6 into four sub-periods.

Figure 3.6 – Average number of years of saving required for deposit on first home (by first year of saving)



Source: PwC analysis based on ONS data (assuming no family assistance in saving for a deposit)

Period 1:
Early-to-mid 1990s - the golden years for new home-buyers

During the first half of the 1990s, housing market conditions were strongly in favour of those looking to buy their first home (provided they kept their jobs through the recession). House prices were subdued for some years following the economic downturn of the early 1990s, but credit conditions were still reasonably supportive, with banks still of latively high loan-to-value ratios, so keeping the amount required for a deposit relatively low. Meanwhile a high interest rate on savings deposits and strong nominal earnings growth helped 20-39 year olds accumulate money for their deposits. As a result, we estimate that, on average, renters were able to save for a first home deposit in just 2-3 years (assuming, as we do throughout this analysis, no family assistance). Having said that, they did then face a high mortgage interest rate when repaying their loans.

Period 2:
Mid-1990s to mid-2000s - Soaring house prices offset only partly by easy credit

House prices began to rise rapidly in the late 1990s and this continued largely unabated until the financial crisis of 2007/8 as supply-side constraints became increasingly severe. As a result, first time buyer deposits rose 6-fold over the period and this drove a steady increase in the years needed to get onto the housing ladder for 20-39 year olds. On average, we estimate that a first-time buyer with no family assistance would have needed 4 years to save for their house at the beginning of the period, but this had increased to almost 9 years on the eve of the global financial crisis. But at least credit was still reasonably readily available in this period, with continuing relatively high loan-to-value (L) ratios being offered by lenders.

3 This analysis assumes no family assistance towards deposit saving. It is based on a household of one full time employee and one part time employee. At present we have only done the analysis based on UK average data, but we may look at regional trends in subsequent research as data allows. See the methodological annex for more details of how we made these estimates.

Period 3:
2008 to 2014 - first time buyers are 'credit crunched'

First time buyers may have been forgiven for hoping that, so long as they kept their jobs, falling house prices during the 2008-9 recession might help them to get onto the property ladder more easily

lmost no interest was being earned on savings. The housing market started to accelerate again from 2012, but earnings did not. The estimated average time taken to save for a first time buyer deposit with no family assistance more than doubled from around 9 years in 2007 to around 20 years in 2014.

Period 4:
2015 to 2025 - renting for a generation?

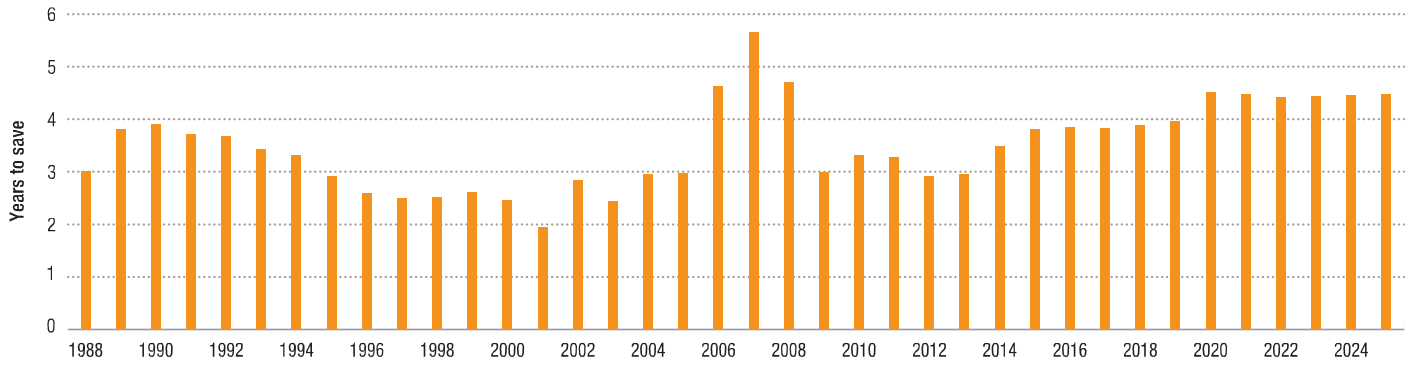
After the turbulence of the crisis and recovery years, housing affordability on our measure has improved slightly and then settled down at a high but more stable level. Savings conditions will improve slightly as interest rates begin to rise and earnings growth returns, but we expect house price growth to continue to outperform earnings growth over the long term (despite some short term moderation due to the Brexit vote), preventing a significant improvement in affordability for first time buyers. Unless they have generous relatives, generation rent is still going to have a hard time getting on the housing ladder for the foreseeable future.

Second steppers looking to buy their first home

The affordability picture has been very different for 20-39 year olds who have already managed, whether through their own efforts or by drawing on the 'bank of mum and dad', to get on the housing ladder. We estimate that someone buying their first home in 2016 might be able to afford to step up to a larger property after only around four years[4] (compared with around 19 years of deposit saving for first-time buyers with no family assistance).

Affordability for this group of 'second steppers' has also been more stable over time according to our estimates (see Figure 3.7). They have been insulated from rising house prices through capital gains on their first property. There was a spike around 2007 as lenders temporarily required much higher deposits, but this group have also benefited from lower mortgage interest rates since the credit crunch.

Figure 3.7 – Number of years to save for second home (by year of first home purchase)



Source: PwC analysis based on ONS data (assuming no family assistance in saving for deposits)

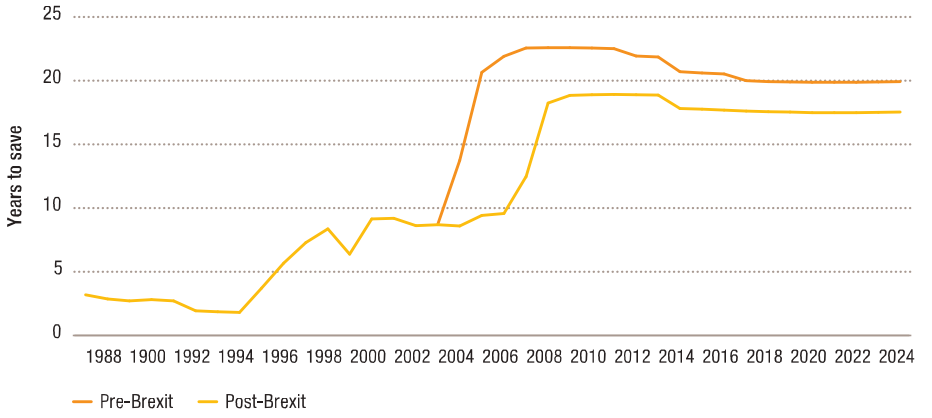
4 This assumes an upgrade from an average first time buyer house to the average house purchase made by existing owner-occupiers. This is typically around 35-50% more expensive than the first-time buyer house (the ratio has varied over time).

Brexit: has it helped or hindered first time buyers?

We discussed the impact of the recent decision of the UK to leave the European Union on house prices in the previous section and we do estimate that the lower house prices growth profile resulting from Brexit will slightly improve the outlook for first time buyer affordability.

As shown in Figure 3.8, the average generation rent households starting to save for a first home in 2016 without family assistance is estimated to need to save for around 19 years to afford their first home. Without Brexit we estimate this would have been around 21 years, so there is a slight improvement. However, this comparison does not take into account the possible increased risk of unemployment due to the economic shock associated with the Brexit vote, although it does factor in somewhat lower real earnings growth in the Brexit case.

Figure 3.8 – Estimated number of years to save for first house



Source: PwC analysis using ONS data (assuming no family assistance in saving for deposit)

Conclusions

The Brexit vote is likely to lead to a significant dip in UK house price growth over the next few years, with London likely to be particularly hard hit in the short term due to the negative impact on international buyer sentiment. There are many uncertainties around any such projections at present, but our initial assessment is that this should not alter the fundamental supply-demand imbalances that have pushed house prices up by more than earnings for most of the past three decades. Brexit will not solve the problems of 'generation rent'.

Our new measure of housing affordabili

ly assistance, tracks the full extent of how much harder it has become since the early 1990s for young people to get on the housing ladder. This picture helps to explain the huge decline in the number of 20-39 year olds buying homes, and the huge rise in the "bank of mum and dad", as without this help the time taken to save for those on average incomes is prohibitive. However, this help is not available to everyone. Many do not have family wealth to draw upon and for this group the barriers to home ownership seem likely to remain high for the foreseeable future.

Temporary schemes like Help-to-Buy can help to fill this gap, but this scheme is unlikely to be supported indefinitely

lending criteria is also unlikely to be the answer: first-time-buyer loan to value ratios are already back to similar levels seen in 2007. Moreover, interest rates will rise at some point in the future, making large loans harder to service, though the Brexit vote has pushed this back in time.

The only longer-term solution is to build more houses. This could eventually lead to a situation where earnings growth again outstrips house price growth, sustainably bringing down affordability for those in generation rent. But such a shift is likely to be the work of decades not years. So an important priority in the interim is to increase the quality and security of rented accommodation so this becomes a more attractive option as it is in countries like Germany or Switzerland.

Technical annex: Modelling methodologies

UK house price projections

Our analysis focuses on the new ONS house price indices. Data from the ONS vary from those provided by Nationwide and Halifax, though broad trends tend to be similar over time. W larger sample size, given that Nationwide and Halifax base their indices on only their own mortgage approvals.

The PwC house price model consists of two parts: a long run equilibrium equation and a short run error correction model that indicates how house prices adjust back towards this equilibrium level.

In the long run, real house prices are driven by three key variables: real annual earnings, the ratio of the housing stock to the population ('supply') and a variable which reflects general credit conditions. Monetary values are deflated into real (inflation adjusted) terms using CPI.

In the short run, changes in real house prices are driven by: deviations from the long run equilibrium; changes in real annual earnings; changes in credit conditions; and the previous period's mortgage interest rate (cost of borrowing). The coefficients for these model variables and other summary statistics for both models are shown in the tables below.

The parameters of the model were estimated using the standard ordinary least squares (OLS) econometric technique based on annual data from 1975-2015.

Long run model (Cointegrating equation)

R-squared = 0.93

Dependent variable: Real house prices	**No. of observations=41**	
	Coefficient	t-statistics
Earnings	16.4	10.2
Supply	-1214.1	-4.4
Credit	12992.5	2.5
Constant	281622.6	3.3

Short run model

R-squared = 0.64

Dependent variable: Change in Real house prices	**No. of observations=40**	
	Coefficient	t-statistics
L. co-integrating equation residual	-0.13	-1.8
D.Credit	18908.3	4.6
D.Earnings	7.6	3.8
L.Mortgage rate	-424.2	-2.1
Constant	4410.1	2.3

Note: 'D' refers to the first difference of a variable (i.e. change on previous year). 'L' refers to the lagged value of a variable in the previous year.

Affordability modelling methodology and projections

We carried out the affordability analysis at the UK level, using data on income, house prices and mortgage lending from the ONS. We also conducted a survey of 2,000 UK adults to gain further insight into savings behaviour.

Our measure focused on the affordability of housing deposits since this has been the main barrier to home ownership in recent years. We calculated the number of years that both current renters and current homeowners would need to save for a deposit at a
tes. W ly
assistance, with all sa
ld earnings.

- The number of years that first-time buyers must save for a deposit is driven by (a) house prices, (b) cash savings accumulation and (c) the loan-to-value ratio. Our survey indicated that renters aged 20-39 save approximately 9% of their income a year. W
ly accumulation of renters' savings to the amount required for the average first house deposit in each year to determine the number of years of savings required.

- Once first-time buyers have purchased their home, the funds available for a deposit are no longer cash savings alone. Homeowners accumulate wealth through the increase in the value of their current house, the capital repayments and the deposit on the current home. We compared the yearly accumulation of savings and wealth of homeowners to the amount required for the average movers' house deposit in each year to determine the number of years of savings required.

Our projections used the housing-related projections from the PwC house price model as well as income projections from the OBR (extrapolated forward from 2020 assuming constant real income growth thereafter).

4 – The Northern Powerhouse: past performance and future potential

Key points

- Average income levels in the Northern regions of England have lagged behind the UK average for decades, in part reflecting relatively low average levels of skills and R&D spending in these areas.
- But employment growth has been stronger in the North West in the past two years and in some recent years inward investment levels have been relatively high.
- Uncertainties relating to Brexit could dampen growth in all UK regions over the next few years, but the EU vote has also focused renewed attention on the need for increased investment in the Northern Powerhouse to boost infrastructure, skills and innovation.
- Given this additional investment, we think the North of England could resume positive employment growth after the initial Brexit shock fades, with the potential for around 192,000 extra jobs by 2025 relative to 2015 levels.

Introduction

Where did the concept of the Northern Powerhouse come from? There has been a long held view that a more even distribution of prosperity across the UK would be highly desirable in its own right and would also promote improved overall UK macroeconomic performance. If some demand was redistributed from the South East to the North this would ensure that full capacity in the UK economy was compatible with a higher overall level of employment[1]. The EU referendum result has also reinforced the need to address regional economic disparities.

There has also been a perception that in some other European economies so-called "second tier" cities[2] contribute much more proportionally to the performance of their national economies than is the case for, say, Manchester, Leeds, Birmingham and Glasgow relative to London. Devolution to Scotland, Wales and Northern Ireland has prompted the question whether the English regions might wish to change their relationship with UK central government. Finally, the government has stressed the Northern Powerhouse's significance as a key vehicle for achieving objectives such as boosting national productivity[3].

To address these issues this article first looks at the comparative past performance of the Northern regions (Section 4.1) and then discusses the drivers of these relative performance trends (Section 4.2). We then present some projections of potential f loyment growth in the North of England, taking into account the possible impact of Brexit (Section 4.3) before turning to policy implications (Section 4.4). Section 4.5 concludes.

1 The economist Nicholas Kaldor made this point in the 1960s, which then formed the basis for some of the policies of the 1964-70 Labour governments such as the Regional Employment Premium and the Selective Employment Tax.
2 Such as Munich, Milan or Barcelona. See **Decentralisation Decade: A New Deal for English Local Governance**, IPPR, 2014.
3 The government's productivity plan (**Fixing the Foundation: Creating a More Prosperous Nation, HM Treasury**, 2015) emphasises the need for greater regional balance. See also, Financial Times 4 July 2016, "Northern Powerhouse plans must continue says Jim O'Neill".

4.1 Comparative performance in broad terms

Scale of the Northern Powerhouse

There is no official definition of the 'Northern Powerhouse', but for the purposes of this article we adopt a broad definition of this that comprises all three regions in the North of England[4], i.e. the North East, North West and Yorkshire and the Humber. This combined area represents nearly a fifth of total UK economic output or gross value added (GVA) in 2014. If the Northern Powerhouse on this definition was an independent country, it would be the tenth largest economy in Europe[5].

The total output in the Northern Powerhouse is about five-sixths of that in London; just over £300bn in 2014 compared to about £360bn. London does, however, produce that level of output despite having a considerably smaller resident population (or workforce) so the level of productivity is markedly lower in the North of England.

Comparative output per head in the Northern Powerhouse

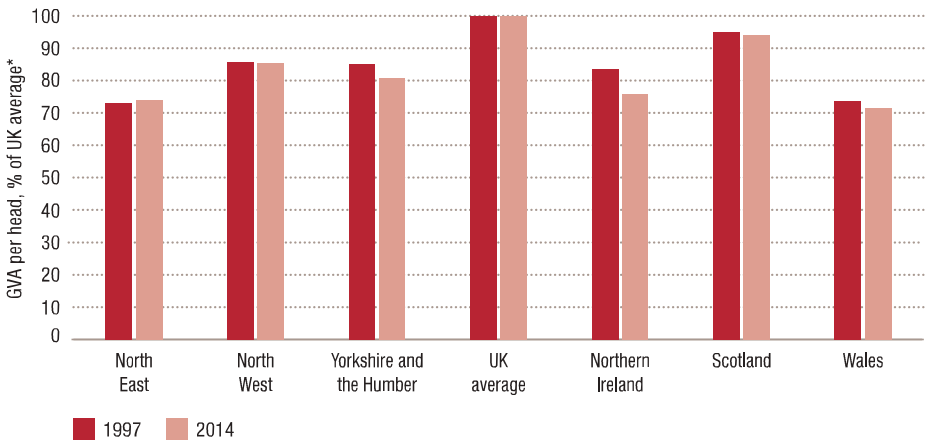
Figure 4.1 and Table 4.1 illustrates trends in the average level of living standards in the Northern regions relative to the UK average and the devolved nations (with 2014 being the latest available year of data at regional level).

In terms of GVA per head there are reasonably big performance variations between the three Northern regions although each lags behind the UK average by a wide margin (due in large part to London significantly raising the UK average). Average income per head in the North East is now similar to that in Northern Ireland, though still slightly higher than in Wales. In comparati terms, Yorkshire and the Humber slipped by just over 4 percentage points comparing 2014 with 1997.

GVA per head in Scotland remains considerably higher than in each of the three Northern regions in England.

GVA per head is just one indicator of economic performance and all such comparisons are subject to a number of caveats. For example, the data for 2014 may be revised in due course. Additionally, GVA does not make allowance for the many other factors impacting on quality of life[6].

Figure 4.1 – Comparative level of living standards (GVA per head), % of the UK average



Source: ONS 2015, "Regional gross value added (income approach) 1997 to 2014"

* Excludes GVA which could not be attributed to any individual region or output attributable to the Continental Shelf (principally, oil and gas related)

4 We use the standard 'NUTS1' definition of these regional areas as in UK and EU official statistics.
5 Department for Communities and Local Government 12 April 2016, "Gunning for growth: Film promotes Northern Powerhouse to the world", **Press release**.
6 Hence the importance of broader measures such as the PwC-Demos **Good Growth for Cities index, which can be accessed here: http://www.pwc.co.uk/industries/government-public-sector/good-growth.html**

Table 4.1 – The Northern Powerhouse's performance compared to the other main UK regions

Indicators of performance outcomes	North East	North West	Yorkshire & Humberside	East Midlands	West Midlands	East
GVA per head 2014	11th	6th	9th	7th	8th	4th
GVA growth 2014	Joint 7th	9th	Joint 7th	Joint 4th	10th	2nd
Employment growth 2 years to Feb-Apr 2016	Joint 8th	2nd	12th	Joint 8th	Joint 5th	4th

Indicators of performance outcomes	London	South East	South West	Wales	Scotland	Northern Ireland
GVA per head 2014	1st	2nd	5th	12th	3rd	10th
GVA growth 2014	1st	6th	Joint 4th	12th	3rd	11th
Employment growth 2 years to Feb-Apr 2016	1st	Joint 5th	Joint 8th	3rd	Joint 5th	11th

Source: ONS

Table 4.1 considers the performance of the three regions within the Northern Powerhouse against the nine other main UK regions using three indicators; GVA per head in 2014, economic growth in 2014 and employment growth during 2013-15. A "traffic light" system is used: regions amongst the top three "best" positions in the UK are marked in green, those in the bottom three positions in red, and the remainder in amber.

The dashboard presents a mixed picture in terms of comparative performance in recent years. The North West and Yorkshire and the Humber have middling performances in terms of GVA per head. The North East, however, had the second lowest level of all 12 UK regions. In terms of GVA growth, the North East and Yorkshire and the Humber were just below the UK average whereas the North West was placed ninth. In contrast, the North West had some of the highest levels of emplo t growth, but Yorkshire and the Humber was lowest in this regard.

4.2 Explaining the comparative performance of the Northern Powerhouse

Table 4.2 summarises the comparative position of the three regions in terms of some of the key drivers of economic performance. The growth in the total number of businesses in each region is used as a proxy for entrepreneurship. R&D spend as a % of GVA is used to represent the extent of innovation.

The percentage of the labour force without a formal qualification is used as a measure of skills and education (i.e. the region with the highest percentage with no such qualification is ranked twelf). The level of public spending per head is used as a measure of the vulnerability of each region to austerity measures (higher spending indicates greater vulnerability).

T le 4.2 – Northern Powerhouse's comparative position in terms of drivers of economic performance

Indicators of drivers of performance	North East	North West	Yorkshire & Humberside	East Midlands	West Midlands	East
Number of businesses, growth rate 2014	Joint 2nd	Joint 4th	Joint 4th	Joint 2nd	9th	7th
Total R&D as % of regional GVA 2013	10th	8th	11th	3rd	5th	1st
% of labour force no qualifications 2013*	9th	10th	7th	Joint 5th	11th	4th
Public spending per head 2013-14*	8th	7th	5th	3rd	6th	2nd

Indicators of drivers of performance	London	South East	South West	Wales	Scotland	Northern Ireland
Number of businesses, growth rate 2014	1st	Joint 4th	11th	10th	8th	12th
Total R&D as % of regional GVA 2013	12th	2nd	4th	9th	7th	6th
% of labour force no qualifications 2013*	3rd	1st	2nd	8th	Joint 5th	12th
Public spending per head 2013-14*	9th	1st	4th	10th	11th	12th

Source: Source: ONS and HM Treasury (HMT)

Note*: Lowest level ranked top, i.e. a low % without qualification and a low level of public spending per capita were judged beneficial to growth potential

Definitions and sources:

The ranking for each of the 12 regions in terms of various indicators is once again summarised by a traffic light system using the same colour coding as Table 4.2.

The implied comparative performance of the Northern Powerhouse is mixed. The North East was ranked joint second in terms of the growth rate for the number of businesses. Less favourably, the North West had the tenth lowest performance in terms of the skills measure. All three regions have below average rates of spend on R&D[7]. One issue, relating to both relative skills and R&D spending levels, is that notwithstanding the presence of many colleges and universities, the Northern Powerhouse 'exports' considerable numbers of students and young graduates to London and the South. The North East had the eighth highest level of public spending per head.

Box 4.1 considers how the Northern Powerhouse stands in terms of one particularly important indicator - the rate of inward investment into the region.

Box 4.1 – How the Northern Powerhouse compares in terms of the rate of inward investment

This matters because of the potential benefits such as a boost to output and employment which is relati ly quick working as well as benefits to productivity through access to external origin R&D and management practices. Table 4.3 considers the rate of foreign direct investment (FDI) into the Northern Powerhouse.

T le 4.3 – Distribution of jobs (new and safeguarded) related to FDI by Northern Powerhouse region

	Jobs in 2005/6 as % of UK total	Jobs in 2011/12 as % of UK total	Regional GVA as % of UK total, 2011*
North East	8.8	11.3	3.1
North West	10.4	16.3	9.2
Yorkshire and the Humber	6.9	3.9	6.8

Source: UKTI.

Note*: Excluding ex-regio and Continental Shelf

English regions outside of the 'greater South East' (i.e. regions other than South East, London and East of England) succeeded in attracting a relatively high share of the total employment related to FDI, that is, higher than their share of UK output (GVA) in both 2005/6 and 2011/12. This was true for both North East and North West, although not Yorkshire and the Humber in 2011/12. Unfortunately more recent inward investment job creation data is not split down by region.

7 A position confirmed by a study of individual cities in the North; Centre for Cities 2014, **Cities Outlook**.

4.3 Future employment growth potential of the Northern Powerhouse

An article in the previous edition of UK Economic Outlook considered sectoral employment growth prospects for the UK as a whole over the period to 2025[8].

In this section, we adopt a similar approach to projecting potential employment growth in the Northern Powerhouse regions to 2025, but allowing also for the impact of Brexit.

We also considered the potential boost to jobs if the relationship between the Northern Powerhouse's employment growth rate and the UK average improves such that it becomes the same as that for South East England during 1997-2015[10]. We believe this is challenging but achievable if increased investment can be made in key enablers of growth such as transport infrastructure, skills and innovation, as envisaged in current government plans for the Northern Powerhouse.

Table 4.4 summarises the results of this exercise, which are further illustrated in Figure 4.2.

Table 4.4 – Historical and projected employment growth by sector in Northern Powerhouse region for 1997-2025

	Jobs '000s Northern Powerhouse 1997	Jobs '000s Northern Powerhouse 2015	Growth rate, % per annum, Northern Powerhouse 1997-2015	Projected growth rates, % per annum, Northern Powerhouse 2015-2025	Jobs '000s Northern Powerhouse projected in 2025
Agriculture, fishing and forestry	81	55	-2.6	-2.6	42
Construction	427	445	0.2	1.0	491
Manufacturing	1184	752	-2.5	-3.2	546
Energy and water	80	82	0.1	1.4	94
Distribution, hotels and restaurants	1560	1607	0.2	0.0	1607
Transport & communications	434	531	1.1	1.0	589
Financial services	196	200	0.1	-0.1	198
Business services	785	1211	2.4	1.4	1389
Public admin etc.	366	343	-0.4	-1.2	304
Education and health	1194	1731	2.1	0.8	1868
Other services	309	382	1.2	0.6	405
Total economy	**6614**	**7340**	**0.6**	**0.3**	**7532**

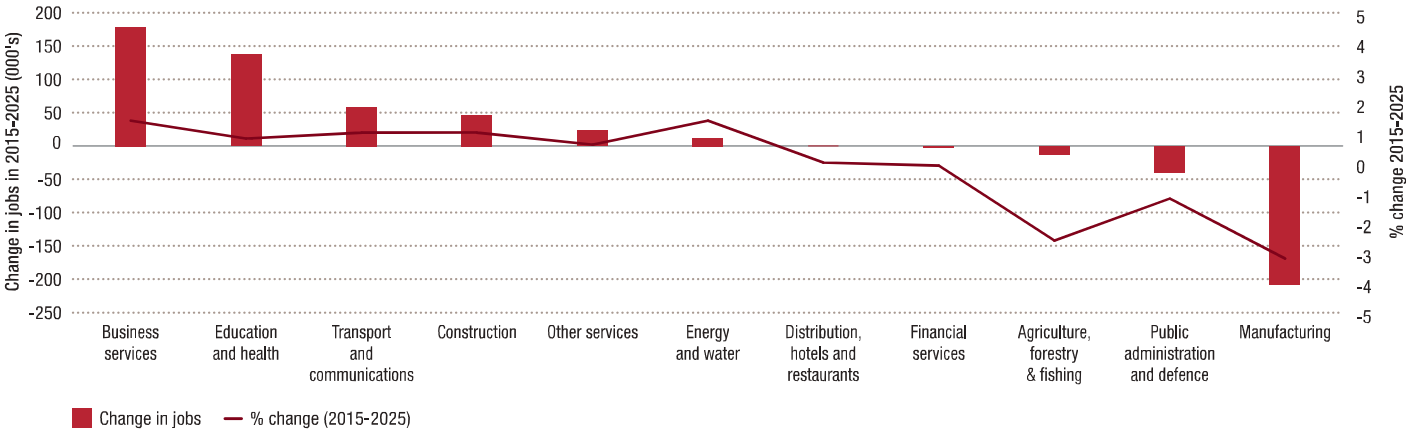
Source: ONS data for 1997-2015, PwC projections for 2025

8 "Which industries will drive future jobs growth in the UK?" **UK Economic Outlook, PwC, March 2016** which is available here: http://www.pwc.co.uk/assets/pdf/ukeo/ukeo-sectoral-employment-march-2016.pdf

9 Specifically we assume that total UK employment will be around 450,000 less in 2025 than previously estimated due to the impact of Brexit. This is based on the 'Free Trade Agreement' (FTA) scenario in our earlier detailed analysis for the CBI **Leaving the EU: Implications for the UK Economy**, PwC, March 2016, which can be accessed here: http://www.pwc.co.uk/services/economics-policy/insights/implications-of-an-eu-exit-for-the-uk-economy.html

10 One exception was manufacturing where the 1997-2015 relationship of the regional growth rate to the UK average was less favourable in the South East than in the Northern Powerhouse. In this case we projected forward the 1997-2015 relationship for the Northern Powerhouse compared to the UK average into 2015-2025.

Figure 4.2 – Projected employment growth by sector in Northern Powerhouse region (2015 - 2025)



Source: PwC projections based on historical ONS data

Looking first at historic trends, we can see that during 1997-2015 UK total employment grew by an average of around 0.9% per annum, while the average growth rate in the Northern Powerhouse was only around 0.6% per annum. But there were significant variations by sector[11]:

- Employment growth in the Northern Powerhouse exceeded the UK average in health and other services.
- In manufacturing; financial services; professional, scientific and technical; real estate; and education, historical job growth rates in the Northern Powerhouse and the UK were almost the same.
- But historical growth rates in the Northern Powerhouse lagged behind the UK average in electricity and other energy; water supply; construction; retail; transport; accommodation and food services; information and communications; admin and support services and arts, entertainment and recreation.
- In public administration the scale of decline in employment was broadly similar but the decline in agriculture, fisheries and forestry and mining and quarrying in the Northern Powerhouse was greater.

If we project forward on the basis of the assumptions described above, the implied total additional employment in the Northern Powerhouse regions in 2025 relative to 2015 would be around 192,000. This would represent a cumulative increase of around 2.6%, equivalent to an annual jobs growth rate of around 0.3%.

Of course, there are many uncertainties around these projections, not least as regards the impact of Brexit. Actual jobs growth could therefore be either higher or lower than these projections, but they are illustrative of the potential of the Northern Powerhouse region if it can ride out the short term turbulence caused by Brexit and, crucially, if the required additional investment is put into the region[12].

11 Our analysis was based on the 20 sectors into which the Labour Force Survey data was disaggregated and then that data was aggregated up to the 11 sectors shown in Table 4.4.
12 One major reason why the projected employment growth for the Northern Powerhouse in 2015-2025 is still relatively modest even if each sector mimics the performance of its counterpart in the South East is the different structure of employment in the North. Compared to the South East there is an under-representation of some key sectors - notably business services - which are likely to see high jobs growth. For more discussion of this point see "Getting the balance right in the UK regions", **PwC UK Economic Outlook, November 2014**

4.4 Policy considerations

Devolution of powers

As one of the leaders of decentralisation in England, the Greater Manchester Combined Authority will soon have (or already has in some of these cases): a directly elected Mayor, control of some health and social care budgets, variation of and retention of Business Rates, regional planning and parts of criminal justice. City Deals are being applied to other parts of the Northern Powerhouse that also involved increased powers being devolved to local level to varying degrees, though more progress is needed in other Northern Cities to match that achieved by Manchester.

The analysis of performance and prospects in this article points to the importance of using existing or any additional powers to boost employment and, indeed, to expand the productive base of the economy. This, in turn, could raise fiscal receipts in the Northern Powerhouse. Of particular value would be measures to promote a greater number of higher wage jobs[13], stronger innovation performance[14], and improved transport infrastructure to improve the internal and external connectivity of the Northern Powerhouse[15]. It is important here to address income inequalities within the North, as highlighted in recent Centre for Cities research[16], through local transport and skills initiatives, as well larger long term schemes like the HS3 rail project. Many smaller towns and rural areas in North have been left behind even as the larger cities like Manchester and Leeds have performed relatively well in recent years.

In addition to investment by the private sector, significant extra public sector capital spending will also be required. In the March 2016 Budget the Chancellor committed to an *additional* spend of £630m in the Northern Powerhouse, mostly on improving road and rail links. It is important such investment does occur as planned.

Possible challenges and opportunities of Brexit

We considered a number of ways in which the Northern Powerhouse may be more or less vulnerable than the rest of the UK economy to the impact of Brexit (which was considered in detail in Section 2 above at the national level).

For example, to what extent are Northern Powerhouse businesses dependent on the EU as an export market?

Table 4.5 shows that the dependency of the North West and Yorkshire and the Humber on the EU market is very similar to the UK average. The North East, however, stands out as having a relatively high export dependency on the EU.

The Northern Powerhouse also accounts for about one-third of UK aerospace output and a similar proportion of pharmaceutical exports. Two major car manufacturing plants are also located in the region[17]. A potential challenge for some of these big business clusters would be any disruption to supply chains after Brexit[18] and indeed impact on FDI into these sectors.

Farming and fishing are two sectors where the level of intervention by EU policies has been particularly intense, alongside a substantial provision of funds from the EU. It is worth considering whether these sectors are relatively strongly represented within the Northern Powerhouse, but Table 4.6 suggests that this is not really the case with the partial exception of Yorkshire and the Humber[19]. But even there it is only around 1% of the economy.

Table 4.5 – Exports of goods to EU as a % of total exports of goods, 2015

	%
North East	58
North West	47
Yorkshire and the Humber	47
UK average	48

Source: HMRC

Table 4.6 – Agriculture, fishing and forestry's output (GVA)* as a % of total regional output, 2014

	%
North East	0.7
North West	0.5
Yorkshire and the Humber	1.1
UK average	0.7

Source: ONS

Note*: Gross value added- a close approximation to GDP

13 The importance of raising the employment rate was stressed by IPPR North and the Northern Economic Commission 2012, **Northern Prosperity is National Prosperity**.
14 Especially in the context of advanced manufacturing and tradeable services business clusters. Issues relating to branding, networks and supplies of specialised skills were emphasised by the Centre for Cities and McKinsey 2014, **Industrial Revolutions: Capturing the Growth Potential**.
15 The hitherto slow speed of trans-Pennine rail journeys has been noted; Centre for Cities 2014, **Cities Outlook**.
16 **10 years of tax in British cities**, Centre for Cities, July 2016, which can be accessed here: http://www.centreforcities.org/publication/10-years-tax/
17 See, IPPR North and Northern Economic Commission 2012, **Northern Prosperity is National Prosperity**.
18 HMT 2016, **The Long-term Economic Impact of EU Membership and the Alternatives**.
19 Whilst the two sectors are combined in the data the **direction** of impact of EU policies on output has perhaps been very different in fisheries as compared to farming.

Table 4.7 – EU annual funding for farming in the Northern Powerhouse

Northern Powerhouse Agriculture, fishing and forestry GVA 2014, £m	2,168
England Agriculture, fishing and forestry GVA 2014, £m	8,812
Northern Powerhouse Agriculture etc. GVA as % of the England Agriculture etc. GVA	24.6
Total CAP funding for England (Pillars 1 and 2) euro m, 2014-20	17,941
Total CAP funding for England £m, 2014-20*	14,951
Total CAP funding for England £m, annually**	2,492
Implied CAP funding for Northern Powerhouse £m, annually**	**613**

Source: ONS. House of Commons 2016, Exiting the EU: Impact in Key UK Policy Areas

Note*: Assuming an exchange rate of £1=1.2 euro
Note**: Dividing the 2014-20 total by six
Note***: Multiplying the total for England by the Northern Powerhouse share of sectoral GVA, i.e. 0.246

Allied to the relative size of the farming sector is the question of the extent to which the Northern Powerhouse has received EU funding through the Common Agricultural Policy (CAP). Whilst data on this were not available directly, Table 4.7 shows how we produced an estimate:

If we assume the Northern Powerhouse's share of total EU funding for farming was in proportion to its share of total agricultural output in England, then those funds would amount to just over £600m in 2015. This is equivalent to 28% of agriculture GVA in the region, so it would be significant in that sector and the rural communities it supports, though it is possible a future UK government may replace all or most of these funds to protect farmers. But £600m is equivalent to only around 0.2% of total Northern Powerhouse annual GVA, so it is not a huge issue for the economy as a whole though it is clearly important for rural communities.

In terms of other EU funding disbursed in the Northern Powerhouse area, we considered the annual average spend by the European Regional Development Fund. During 2013-2015 this averaged £14.2m annually in Yorkshire and the Humber, £16.5m in the North East and £60.2m in the North West. There will also be other EU funds that could potentially be lost, notably from the European Structural and Investment Funds (ESIF), which we estimate could be worth over £300 million per annum to the North of England. These amounts will fund many worthwhile projects, although they may not be large relative to the size of the Northern economy as a whole, so it will be important that this lost funding is replaced by a future UK government – and indeed enhanced where possible.

In summary, there could be material costs of Brexit for the Northern regions in terms of exports to the EU and disruption to inward investment and supply chains for international companies operating in these regions. The EU funding impacts could also be important for rural communities and some other sectors of the Northern economy, so will need to be replaced by UK government funding in future (and where possible enhanced in priority areas for development).

Leaving the EU could also create some opportunities

For example, once outside of EU Law, the UK central government and Treasury could - if they wished - be more radical in decentralising fiscal powers. At least in principle, the Northern Powerhouse could have its own rate of, say, Corporation Tax or VAT[20]. Whether this will always be desirable is debatable, but there would be more options available and it could also reinforce the case for other forms of devolution of powers within the UK, continuing recent trends.

The Northern seaports might be well placed to capitalise if UK trade patterns shifted from the Continent to the rest of the world, hence creating a greater focus on trans-Atlantic trade routes. One recent study reported that only 15% of UK container traffic passed through ports in the North[21].

In terms of boosting the UK's overall connectivity to the rest of the world beyond Europe, a key role could be played by Manchester Airport given it currently has substantial spare capacity[22].

20 Any decision to do so would have to be carefully weighed. There would be certain administrative and compliance costs. There could be some displacement effects around the edge of whatever region adopted the new, lower rate. Probably most importantly, tax devolution would be probably be conditional on the Northern Powerhouse assuming any risk that in the future the tax base might grow more slowly than expected.
21 IPPR North and Northern Economic Commission 2012, **Northern Prosperity is National Prosperity**.
22 Which contrasts to airports in the South East.

4.5 Conclusions

The Northern Powerhouse currently makes a sizeable contribution to the overall level of UK output, albeit with lower average living standards than the UK average. The government has clearly recognised the North as a priority for future investment and the vote to leave the EU only makes this more urgent.

The Northern Powerhouse already contains some of the UK's leading business clusters in sectors such cars, aircraft, pharmaceuticals and retail. In order to grow these and, indeed, develop more such clusters much will depend on how far the challenges posed by Brexit can be met and how far businesses in the Northern Powerhouse can make the most of the development of the UK's trading relationships beyond Europe to the rest of the world.

Over the next decade, we estimate that total employment levels in the Northern Powerhouse could grow by around 192,000 from 2015 levels if the short term shock of Brexit can be overcome and additional investment is made in key areas such as transport, skills and innovation. This assumes that sectoral performance levels could rise to those currently attained in the South East after this investment is made. It also assumes that a reasonable measure of free trade access to the EU Single Market can be retained.

Of course, there are many uncertainties around these projections, but the potential for growth is clear. And overall growth performance could be even better if the Northern Powerhouse can increase its share of sectors such as business services which have higher future jobs growth potential[23].

23 See, PwC November 2014, "Getting the balance right in the UK regions", **UK Economic Outlook**.

Appendix A
Outlook for the global economy

Table A.1 presents our latest main scenario projections for a selection of economies across the world.

Growth in leading developed economies remained modest in 2015 and this seems set to continue in 2016-17, with the US as the fastest growing G7 economy despite relatively modest a th of only around 2% per annum in those two years. The UK, which has vied with the US for top place in the G7 league table in recent years, is set to fall back due to the impact of Brexit as discussed in detail in the main text of this report. The overall Eurozone growth rate has also been revised down slightly by around 0.1-0.2% per annum following the Brexit vote, with Ireland seeing the largest revisions due to its close trading links with the UK. Overall, however, the Eurozone economy is not expected to be too badly affected, continuing to grow at a modest but steady rate of around 1.5% per annum.

Growth in emerging markets has lost momentum with a slowdown in China and continuing recessions in Brazil and Russia. The growth outlook continues to be strong at present in India, which continues to benefit from low oil prices. Global GDP projections remain moderate but slightly brighter on average for 2017, at around 3.4% using PPP weights – estimated global growth is lower at around 2.8% in 2017 using MER weights as this gives less weight to China and India in particular.

Global inflation is expected to pick up somewhat in 2017 as past commodity price decreases gradually fall out of 12-month inflation rate calculations. But underlying inflationary pressures remain relatively subdued by historical standards, particularly in the advanced economies.

These projections (including those for the UK) are updated monthly in our Global Economy Watch publication, which can be found at www.pwc.com/gew

Table A.1: Global economic prospects

	Share of world GDP	Real GDP growth (%)		Inflation (%)	
	2015 at MERs	2016e	2017p	2016e	2017p
US	24.5%	1.9	2.2	1.2	2.2
China	15.0%	6.5	6.5	1.8	1.8
Japan	5.6%	0.7	0.5	0.2	1.4
UK	3.9%	1.6	0.6	0.7	1.8
France	3.3%	1.4	1.5	0.3	1.2
Germany	4.6%	1.6	1.4	0.3	1.5
Greece	0.3%	-1.4	0.3	-0.3	0.5
Ireland	0.3%	4.5	3.3	0.8	1.8
Italy	2.5%	0.9	1.0	0.2	1.1
Netherlands	1.0%	1.6	1.6	0.8	1.5
Portugal	0.3%	1.3	1.3	0.7	0.9
Spain	1.6%	2.6	2.3	-0.4	1.3
Poland	0.6%	3.5	3.4	-0.3	1.0
Russia	1.8%	-1.7	1.0	7.3	6.8
Turkey	1.0%	3.8	3.7	7.7	7.5
Australia	1.7%	2.4	2.5	2.3	2.5
India	2.9%	7.7	7.7	4.1	4.3
Indonesia	1.2%	4.8	4.8	6.1	6.1
South Korea	1.9%	2.7	2.7	1.1	1.7
Argentina	0.8%	-0.8	2.1	25.0	25.0
Brazil	2.4%	-3.8	0.0	9.0	6.5
Canada	2.1%	1.6	1.9	1.5	1.8
Mexico	1.6%	2.3	2.7	2.9	3.1
South Africa	0.4%	0.4	1.0	6.0	5.5
Nigeria	0.7%	1.0	2.5	14.0	13.5
Saudi Arabia	0.9%	1.3	1.5	3.9	3.2
World (PPP)		3.1	3.4		
World (Market Exchange Rates)	100%	2.6	2.8	2.1	2.6
Eurozone	15.8%	1.6	1.5	0.2	1.3

Source: PwC main scenario for 2016 and 2017; IMF for GDP shares in 2015 at market exchange rates (MERs)

Appendix B
UK economic trends: 1979 – 2015

Annual averages	GDP growth	Household expenditure growth	Manufacturing output growth*	Inflation (CPI**)	3 month interest rate (% annual a	lance (% of GDP)	PSNB*** (% of GDP)
1979	3.7	4.8			13.7	-0.6	4.3
1980	-2.0	0.1			16.6	0.5	3.9
1981	-0.8	0.3			13.9	1.5	3.1
1982	2.0	1.2			12.2	0.6	2.3
1983	4.2	4.4			10.1	0.2	3.0
1984	2.3	2.5			10.0	-0.5	3.3
1985	4.2	5.1			12.2	-0.3	2.6
1986	3.2	6.1			10.9	-1	2.0
1987	5.4	5.1			9.7	-1.6	1.3
1988	5.8	7.4			10.4	-3.6	-0.6
1989	2.6	3.9		5.2	13.9	-4.1	-0.6
1990	0.7	1.0		7.0	14.8	-3.1	0.6
1991	-1.1	-0.6		7.5	11.5	-1.3	2.6
1992	0.4	0.9		4.3	9.6	-1.5	5.6
1993	2.5	2.8		2.5	5.9	-1.3	6.8
1994	3.9	3.2		2.0	5.5	-0.5	5.8
1995	2.5	2.1		2.6	6.7	-0.7	4.7
1996	2.5	3.9		2.5	6.0	-0.6	3.3
1997	3.1	4.5		1.8	6.8	-0.2	1.6
1998	3.2	3.9	0.4	1.6	7.3	-0.4	-0.1
1999	3.3	4.9	0.6	1.3	5.4	-2.4	-1.1
2000	3.7	4.9	2.2	0.8	6.1	-2.1	-1.4
2001	2.7	3.5	-1.5	1.2	5.0	-1.9	-0.7
2002	2.4	3.7	-2.2	1.3	4.0	-2	1.7
2003	3.5	3.8	-0.6	1.4	3.7	-1.7	2.7
2004	2.5	3.3	1.8	1.3	4.6	-1.8	3.0
2005	3.0	3.0	0.0	2.1	4.7	-1.2	3.4
2006	2.5	1.8	2.2	2.3	4.8	-2.2	2.5
2007	2.6	3.0	0.6	2.3	6.0	-2.4	2.7
2008	-0.6	-0.8	-2.8	3.6	5.5	-3.5	4.8
2009	-4.3	-3.5	-9.4	2.2	1.2	-3	10.1
2010	1.9	0.7	4.6	3.3	0.7	-2.7	9.2
2011	1.5	-0.7	2.2	4.5	0.9	-1.8	7.2
2012	1.3	1.9	-1.5	2.8	0.8	-3.7	7.7
2013	1.9	1.6	-1.0	2.6	0.5	-4.4	6.0
2014	3.1	2.1	2.9	1.5	0.5	-4.7	5.5
2015	2.2	2.6	-0.2	0.0	0.6	-5.4	4.2
Average over economic cycles****							
1979 - 1989	2.8	3.7			12.2	-0.8	2.2
1989 - 2000	2.3	3.0		3.3	8.3	-1.5	2.3
2000 - 2007	2.9	3.4	0.3	1.6	4.8	-1.9	1.7

* After the revisions to the national accounts data, pre-1998 data is not currently available ** Pre-1997 data estimated *** Public Sector Net Borrowing (calendar years excluding public sector banks)
**** Peak-to-peak for GDP relative to trend
Sources: ONS, Bank of England

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