FORECAST REFERENCE GUIDE
August 2015

UK/International Forecast Teams, CAPD/ID

This chart pack summarises the key features of the August 2015 forecast

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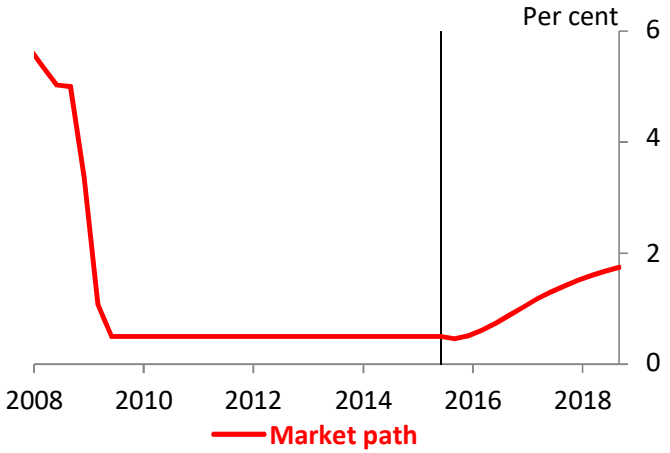
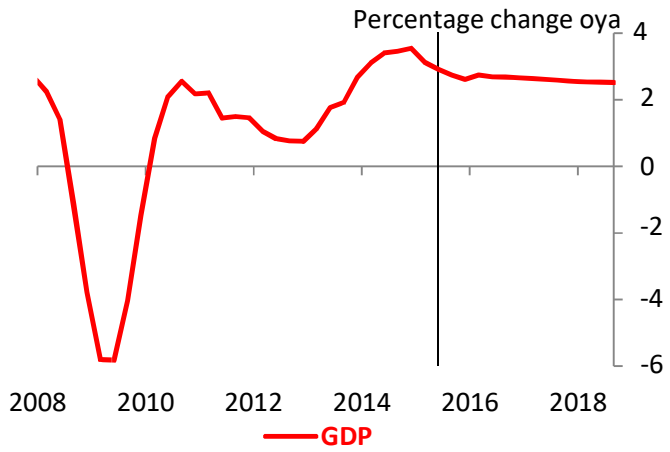
Overview

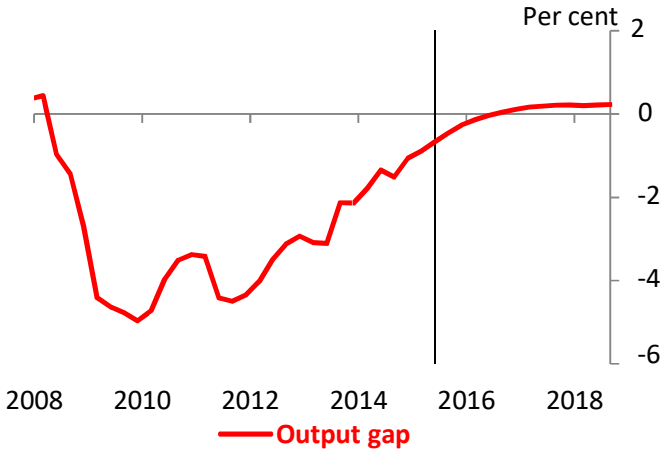
1. Headlines: very low interest rates push inflation just above target



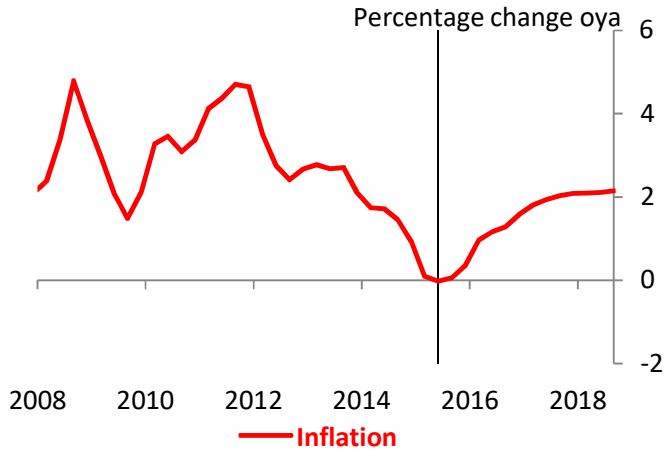
With a very flat market path for rates, which reaches just 1.7% by Year 3 …



… GDP grows around trend over the forecast …



… the output gap closes by mid-2016…



… and inflation bounces back from 0% to end just above target at 2.1%: just like in the May *IR*.

2. News: Stronger supply, weaker near-term inflation

Accounting for changes in the projection since the May 2015 IR:	Change in level of GDP (%)			Change in CPI inflation (pp)		
	Year 1 2016Q3	Year 2 2017Q3	Year 3 2018Q3	Year 1 2016Q3	Year 2 2017Q3	Year 3 2018Q3
1. Starting level of GDP	0.5	0.6	0.6	0.0	0.0	0.0
2. Yield curve news	-0.2	-0.3	-0.3	-0.1	-0.1	-0.2
3. Credit spreads	0.1	0.1	0.1	0.0	0.0	0.0
4. Latest appreciation of sterling (previous treatment)	-0.1	-0.2	-0.2	-0.1	-0.2	-0.2
5. Import price judgements	0.0	0.0	0.1	0.1	0.2	0.2
6. Housing market	0.1	0.1	0.1	0.0	0.0	0.0
7. Fiscal (July Budget)	0.0	0.2	0.2	0.0	0.0	0.1
8. Energy	0.0	0.1	0.1	-0.2	0.0	0.0
9. Other	0.0	0.0	0.0	0.0	0.0	0.1
10. Total change from May 2015 IR	**0.5**	**0.6**	**0.6**	**-0.2**	**-0.1**	**0.0**

- **The level of GDP** ends the forecast around 0.6% higher in Year 3 than in the May *IR* **(Row 10)**, largely reflecting starting news in supply **(Row 1)**. The effects of increases in the yield curve **(Row 2)** and exchange rate **(Row 4)** since May are largely offset by the effects of lower credit spreads **(Row 3)**, news about fiscal policy from the July Budget **(Row 7)**, an improvement in the outlook for the housing market **(Row 6)**, and a boost from lower oil prices **(Row 8)**.
- **Inflation** is lower in the near term than in May **(Row 10)**, mainly reflecting falls in the oil price **(Row 8)**. Inflation returns to target by Year 2 and is a little above target at Year 3, similar to May. A judgement to assume less import price pass-through from sterling's appreciation since 2013 largely offsets the inflation effect from the further 3.2% appreciation since May, with the judgement contributing +0.2pp to inflation at Years 2 and 3 **(Row 5)** .

3. The MPC's Key Judgements

The MPC's forecast is underpinned by 4 key judgements, which are shown below along with what they imply for key variables.

KJ1: Moderate global growth continues as international risks are contained.

	Average 1998-2007	2015	2016	2017
World GDP (UK-weighted)[c]	3	2 ¼	2 ¾	2 ¾
World GDP (PPP-weighted)[d]	4	3 ¼	3 ¾	3 ½
Euro-area GDP[e]	2 ¼	1 ½	1 ¾	1 ¾
US GDP[f]	3	2 ½	2 ¾	2 ¼

KJ2: Private domestic demand grows robustly, supported by sustained real income growth and a gradual decline in private sector savings.

	Average 1998-2007	2015	2016	2017
Credit spreads[g]	¾[h]	2	2	2
Household saving ratio[i]	8 ¾	5 ¼	5	4 ½
Business investment to GDP ratio[j]	10	10 ¾	11 ¼	12

KJ3: Wage growth continues to rise, underpinned by an absorption of slack and strengthening in productivity growth

	Average 1998-2007	2015	2016	2017
Productivity[k]	2 ¼	1	1	1 ½
Participation rate[l]	63	63 ½	63 ½	63 ½
Average hours[m]	32 ¼	32 ¼	32 ½	32 ¼

KJ4: The drag on inflation from external factors dissipates, as stronger domestic cost growth returns inflation to the 2% target.

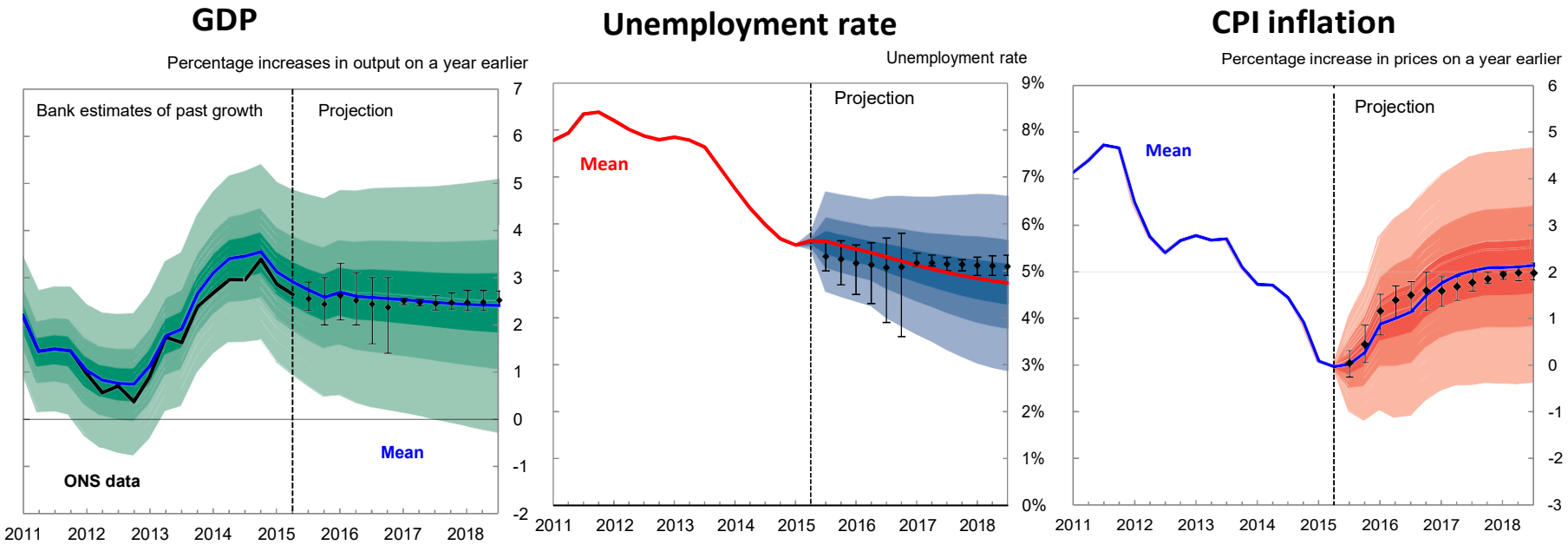
	Average 1998-2007	2015	2016	2017
UK import prices[n]	¼	-5 ½	¾	¾
Unit labour costs[o]	2 ¾	2	3	3
Dollar oil prices[p]	39	57	62	66

4. Risks around the Key Judgements

This table, which was presented to the MPC at Draft 1, describes a range of risks to the Key Judgements, together with an assessment of the net size and direction of the risks to GDP and inflation. The MPC judged that the risks around the final forecast were to the downside for GDP to reflect greater global uncertainty, and were also to the downside for inflation in the near-term reflecting uncertainty around the speed of import price pass-through. In contrast to the risks described in the table, the MPC thought that the risks around KJ2 were broadly balanced.

	GDP	*Inflation*
Skews in Aug Draft 1(Y1,Y2,Y3)	*(-0.1,-0.1,-0.1)*	*(-0.1,0,0)*
KJ1: Moderate global growth continues as international risks are contained.	↓	↓
'Grexit' with contagion to other euro-area countries	↓	↓
Global risk sentiment worsens, perhaps triggered by US monetary policy tightening	↓	↓
Severe slowdown in China	↓	↓
KJ2: Private domestic demand grows robustly, supported by sustained real income growth and a gradual decline in private sector savings.	↓	↓
Households and firms are unwilling to dis-save as much as in the central projection	↓	↓
The impact of the fiscal consolidation may be larger. But its effects could have come through earlier and be less persistent.	↔	↔
KJ3: Wage growth continues to rise, underpinned by an absorption of slack and strengthening in productivity growth	↔	↔
Productivity growth fails to recover toward pre-crisis averages	↔	↔
The previous weakness of wages may not unwind as anticipated. But labour market tightness could put more upward pressure on wages than we have assumed.	↔	↔
KJ4: The drag on inflation from external factors dissipates, as stronger domestic cost growth returns inflation to the 2% target.	↑	↔
Risks to the oil price to the downside	↑	↓
Quicker pass-through of the appreciation to CPI	↔	↑
Low inflation and weakness of wage growth leads to more persistent weakness in inflation	↔	↓

5. How the forecast compares to externals



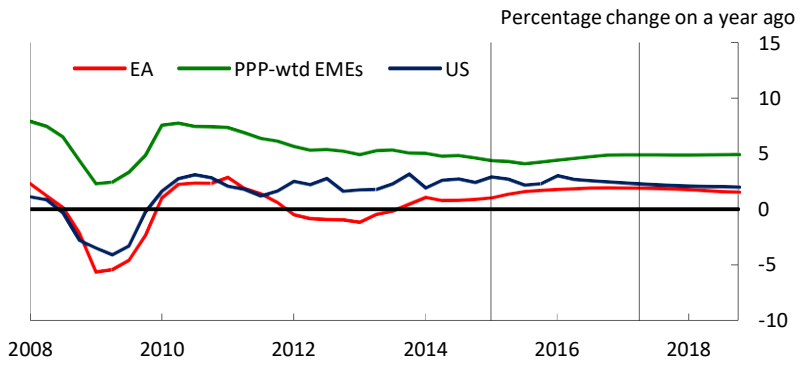
Diamonds represent the average external forecast, bars represent the range

- The mean GDP growth projection is in line with external forecasters over the forecast horizon (**LHS**). Excluding the effect of the backcast, calendar year growth is projected at 2.6% in 2015, 2.7% in 2016 and 2.6% in 2017 (average external = 2.6%, 2.4% and 2.6%). The difference in 2016 is mainly accounted for by the MPC's forecast for consumption being stronger than the average external forecaster (2.1 percent compared to 1.7 percent).
- The unemployment rate is higher than the average external in the near term most likely due to the MPC's forecast incorporating the latest unemployment data (**centre**). From 2017 onwards, when the more outlying externals have dropped out of the sample, the MPC's forecast is at the bottom of the range of externals, ending the forecast at 4.8%.
- The mean inflation forecast is broadly in line with the average external forecaster in the near-term but the MPC's forecast is towards the bottom of the range of external forecasters for much of 2016 (**RHS**). After which, the MPC's forecast rises back to the target more quickly than externals – reaching 2% in 2017Q3, while the average external does not expect inflation to be back at target until 2018Q1.

1. Moderate global growth continues as international risks are contained.

6. The outlook for the world

EA, US and EME GDP growth



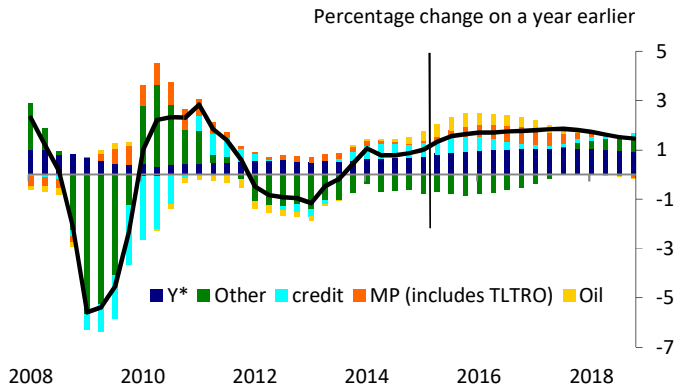
GDP forecast comparison

		Calendar-year growth rates (%)		
		2014	2015	2016
UK-weighted world GDP growth	Aug IR	2.1	2.3	2.7
	Consensus	2.1	2.2	2.7
	July WEO	2.1	2.3	2.7
PPP-weighted world GDP growth	Aug IR	3.4	3.2	3.6
	Consensus	3.4	3.2	3.8
	July WEO	3.4	3.3	3.8
Euro-area GDP growth	Aug IR	0.8	1.4	1.8
	Consensus	0.8	1.5	1.8
	July WEO	0.8	1.5	1.7
US GDP growth	Aug IR	2.4	2.5	2.6
	Consensus	2.4	2.4	2.8
	July WEO	2.4	2.5	3.0
China GDP growth	Aug IR	7.4	6.7	6.3
	Consensus	7.4	6.8	6.7
	July WEO	7.4	6.8	6.3

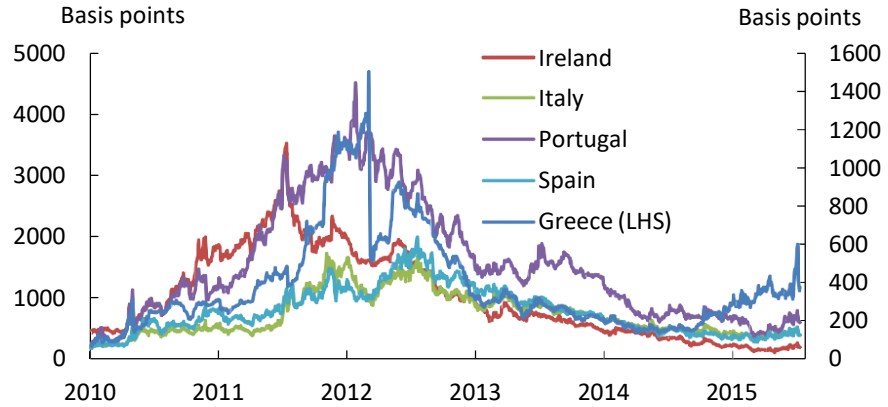
- Despite the fall in oil prices since last summer, world activity growth is subdued and is only expected to recover modestly over 2015 (**LHS** and **RHS**). This reflects weak potential supply growth across all major regions.
- Euro-area growth is expected to accelerate slightly in 2015H2, despite the increase in uncertainty surrounding the situation in Greece. Recent events in Greece are assumed to have only a limited impact on euro-area GDP. And the ECB's asset purchases and lower oil prices help support euro-area growth.
- In the US, GDP growth recovered in Q2 to 0.6% oqa from 0.2% in Q1, as temporary weakness in Q1 abated. Throughout the forecast, US growth is projected to increase slightly, driven mainly by improved labour-market conditions and a recovery in residential investment. Partially offsetting that, the dollar appreciation and tightening monetary policy weigh on growth.
- EME GDP growth is expected to weaken further through 2015, largely due to a slowdown of economic activity in Brazil, China and Russia. Further out, growth is forecast to pick up a little as activity stabilises in Russia, Brazil emerges from recession and the drag on commodity producers from low oil prices diminishes. But growth remains significantly weaker than pre-crisis average throughout.

7. Impact of recent developments in Greece

Decomposition of euro-area GDP



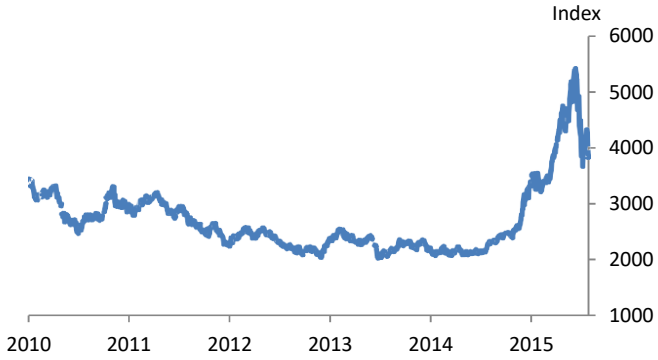
10y spread relative to Bunds



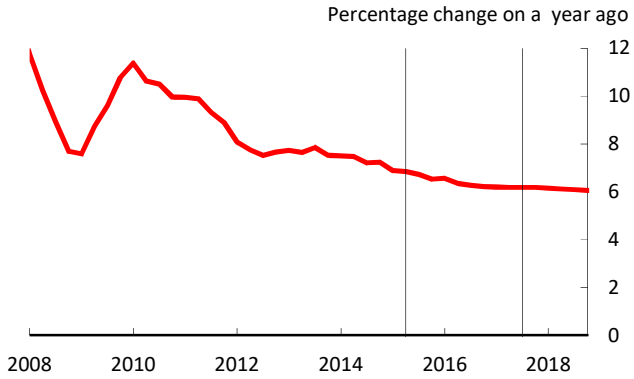
- Euro-area growth is expected to recover from 1.0% in 2015 Q1 to 1.8% in early 2016 supported by lower oil prices, the ECB's asset purchases and improved credit conditions (**LHS**). GDP grows faster than potential such that the output gap is closing over the forecast.
- The central projection assumes a programme for Greece is agreed and allows Greece to remain a euro-area country over the forecast period.
- The impact of recent developments in Greece on other euro-area countries is judged to be small due to limited market reaction (**RHS**)**,** resulting in the level of euro-area GDP by the end of the forecast period being 0.2% lower. That reflects mainly input of the Greek GDP forecast which was revised down materially by 7%, this has a direct impact on the level of euro-area GDP of a little over -0.1%.
- While the central projection assumes Greece stays in the euro, a very significant risk of Grexit remains.

8. The outlook for China

Chinese equity prices



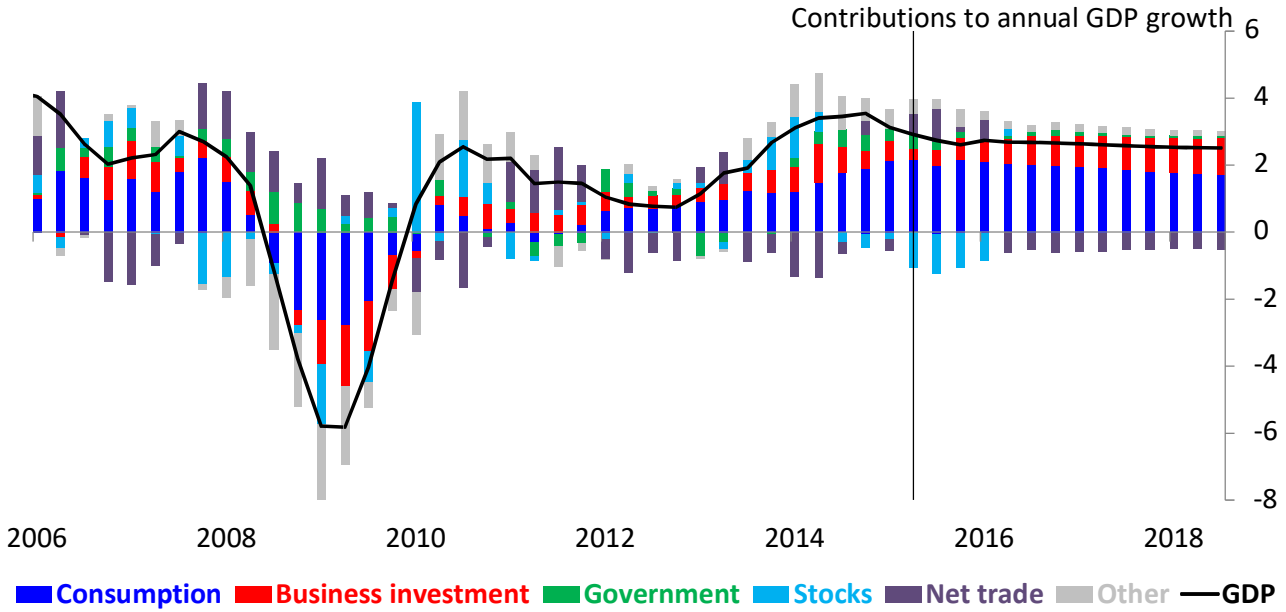
Chinese GDP forecast



- Chinese GDP in 2015Q2 grew at 6.9% oya, a little stronger than expected. But GDP was boosted by strong growth in the financial sector, which has been associated with the past rise in equity prices (**LHS**), and that is unlikely to persist given the recent fall in equity prices.
- The Chinese stock market fell by around 30% between mid-June and end-July. The impact of the fall in Chinese equities on Chinese macroeconomic activity is judged to be limited, however, as equities only account for 2.4% of household total assets and 5% of total social financing.
- But the recent volatility has raised concerns about the ability of policymakers to manage the economy. Thus, private sector confidence is judged to be weaker and pull down on growth in 2015H2.
- Further out, Chinese growth is expected to slow down throughout the remainder of the forecast period (**RHS**). This reflects the Chinese authorities' attempts to rebalance the economy away from external demand and investment towards household spending.
- The central projection also assumes policymakers are willing and able to engineer a smooth rebalancing of the economy. But there are significant risks to this assumption that could lead to a hard landing.

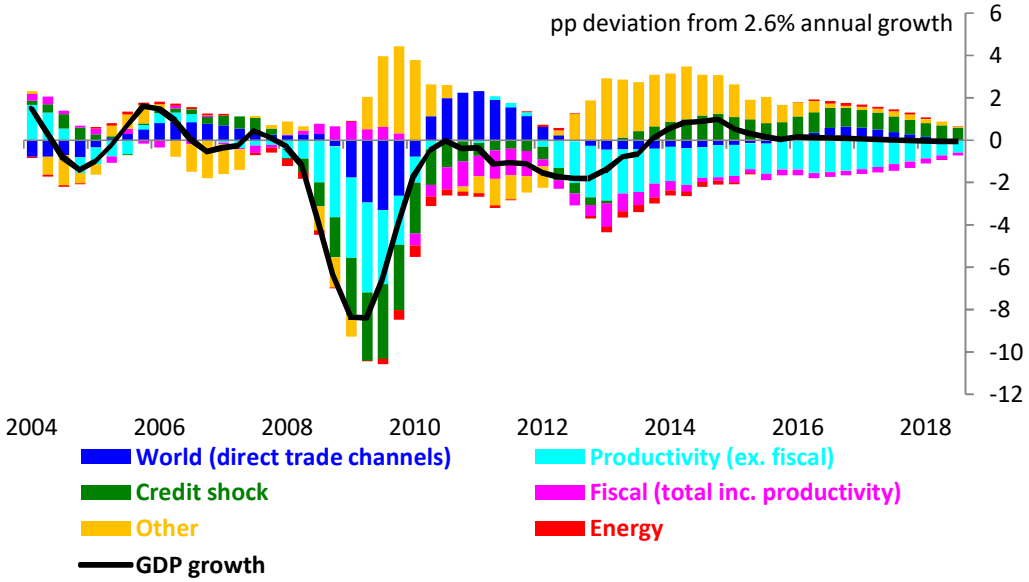
2. Private domestic demand grows robustly, supported by sustained real income growth and a gradual decline in private sector savings

9. Accounting for GDP growth



- Across the forecast, demand is concentrated in domestic private sector components. **Consumption** grows robustly throughout, reflecting robust growth in real income and falling savings rates (**Slide 11**). **Investment's** contribution picks up over the forecast, recovering from its recent softness to reach 9% annual growth by Y3 (**Slide 13**).
- External demand, meanwhile, remains weak. Despite strength in the latest data, we forecast **net trade** to drag on GDP growth over the medium term (**Slide 13**). And **government expenditure** is basically flat, as the fiscal consolidation continues (**Slide 12**).
- These offsetting forces are two sides of the same coin: policy fills the gap left by weak external demand and the fiscal contraction by generating private domestic demand. A key question for the forecast is whether we have correctly judged the extent to which these headwinds will drag on demand **(Slide 10)**.

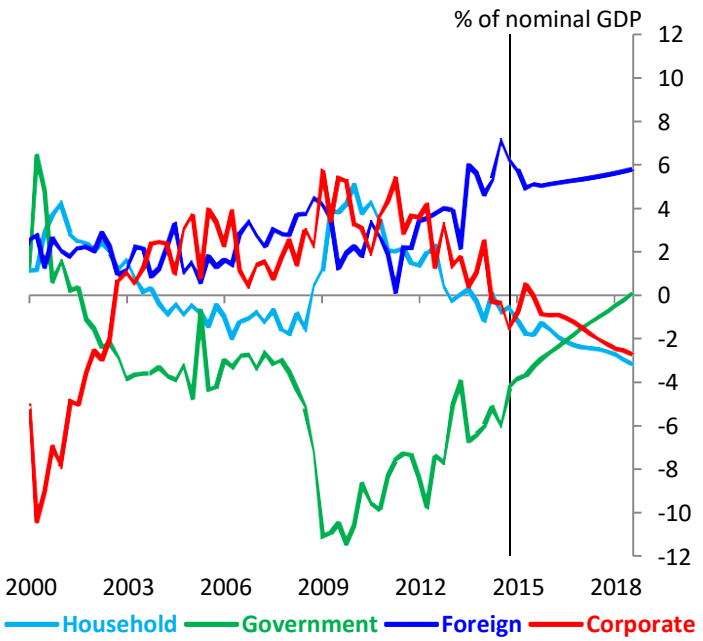
10. Shock-based GDP growth decomposition



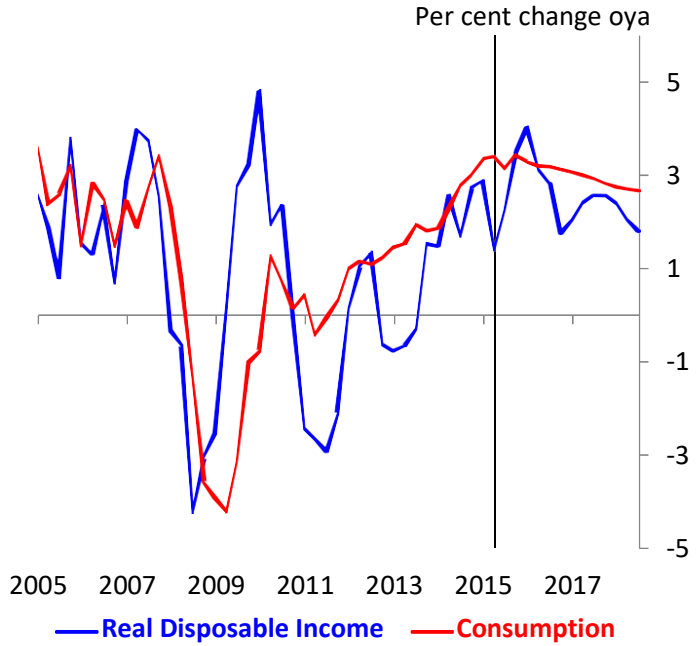
- **GDP growth** is close to its historic average over the forecast. It is being supported by the unwind of past **credit shocks**, with the CSA reasonably flat over the forecast. Some unwind of the persistent drag from the **world trade** also pushes up on growth relative to trend over Year 2 **(Slide 6)**. **Fiscal policy** continues to drag on growth rates, as the boost to growth from the unwind of earlier rounds of fiscal consolidation is more than offset by the contraction that is yet to come **(Slide 12)**. Weak **productivity growth** continues to drag on growth relative to trend over the forecast **(Slide 14)**.
- The unwind of some of these shocks over the forecast is consistent with a gradually rising path of Bank Rate **(Slide 1)**. But headwinds from the world and the fiscal contraction continue to weigh on the output gap over the forecast, requiring policy to remain accommodative throughout.

11. Financial balances and consumption

Financial balances

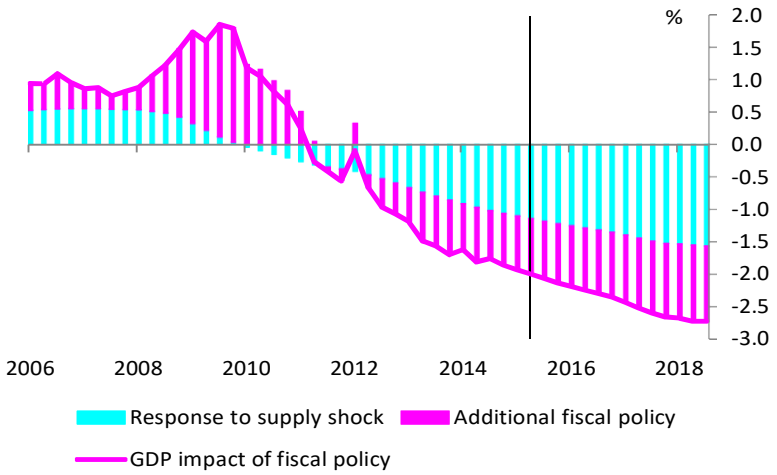


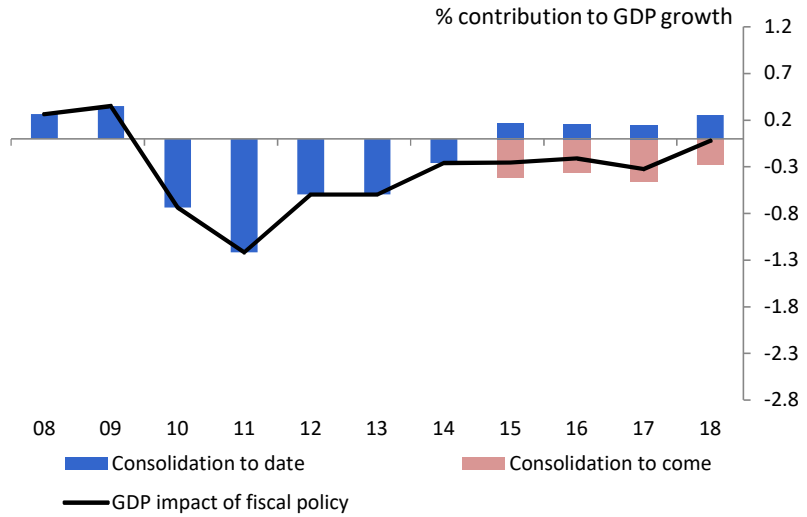
Consumption and real disposable income



- The forecast is underpinned by strength in private domestic demand offsetting weakness in the external environment and the drag from the fiscal consolidation. That is reflected in **financial balances (LHS):** as the **current account** position widens a little over the forecast and the **Government** balance closes, the **household** and **corporate** deficits widen.
- At the beginning of forecast **real household income** (**RHS**) grows robustly before slowing a little. **Consumption** growth also slows over the forecast, but by less than income growth and hence the savings rate and **household balance** are downward sloping. The savings rate is now much more downwards sloping than in May. That is a consequence of taking on a new method of forecasting non-labour income with limited implications for the GDP and inflation profiles.

12. The fiscal consolidation

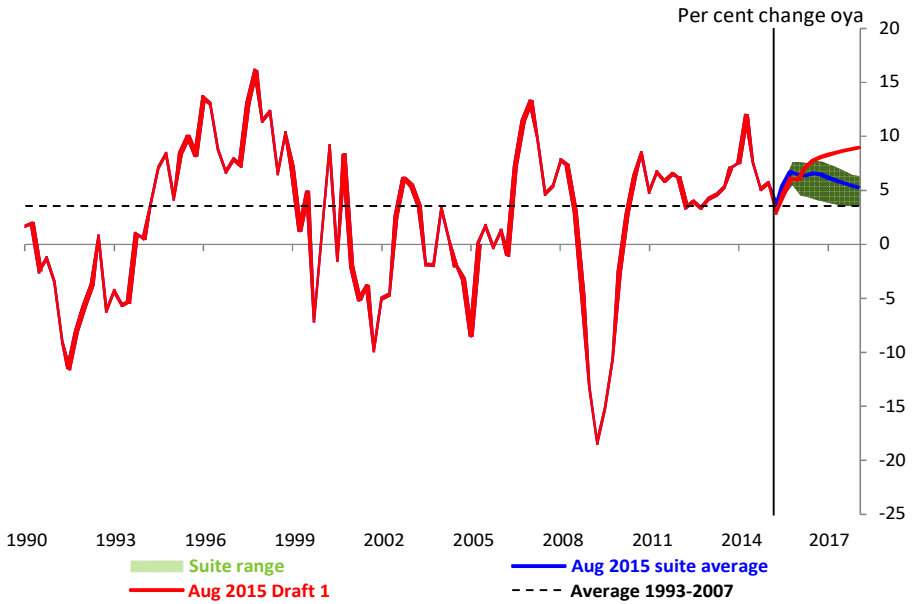




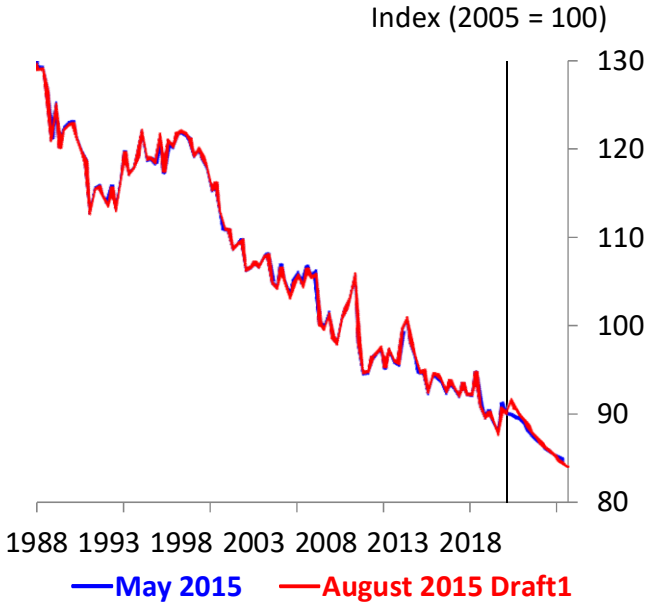
- The government first announced its plans for fiscal consolidation in the 2010 Budget, and reiterated its commitment to further cuts over (and beyond) the forecast horizon in the July 2015 Budget. We estimate that fiscal policy is currently dragging on the level of GDP by 2%. That drag is forecast to widen to just under 3% by the end of the forecast horizon (**LHS**).
- We think that part of the fiscal consolidation was (and will be) a necessary adjustment of the government to the large supply shock that hit the UK. The LHS chart shows our estimate of the split of the drag on GDP from fiscal policy between the **adjustment to the supply shock** and **additional consolidation measures.** The split between the two elements is estimated using the simple fiscal rule in COMPASS.
- In our forecast treatment, we assume that the impact of fiscal shocks will ultimately unwind. This begins to happen to the effects of fiscal measures implemented over the last few years, so we expect there to be a boost to GDP growth over the forecast horizon from the unwind of the effect of **past consolidation measures** (**RHS**). But based on the government's fiscal plans, we still estimate that the drag on GDP growth from **new consolidation measures** will dominate the that unwind, such that the net effect on GDP growth is negative.

13. Investment and exports

Business investment growth



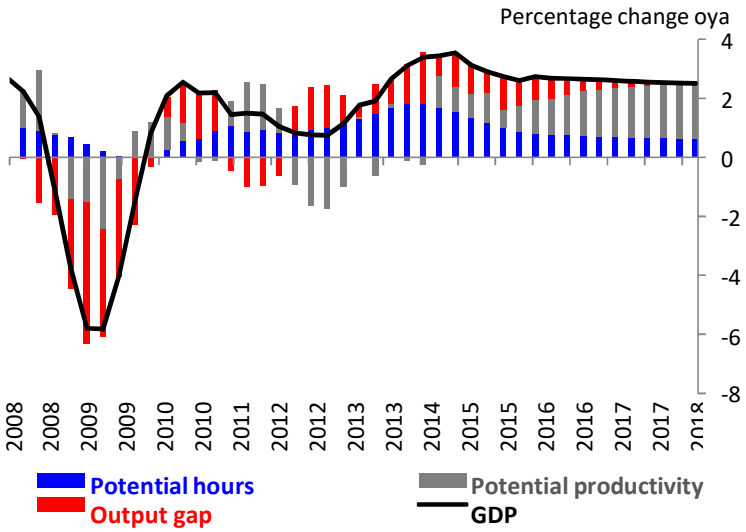
The export share

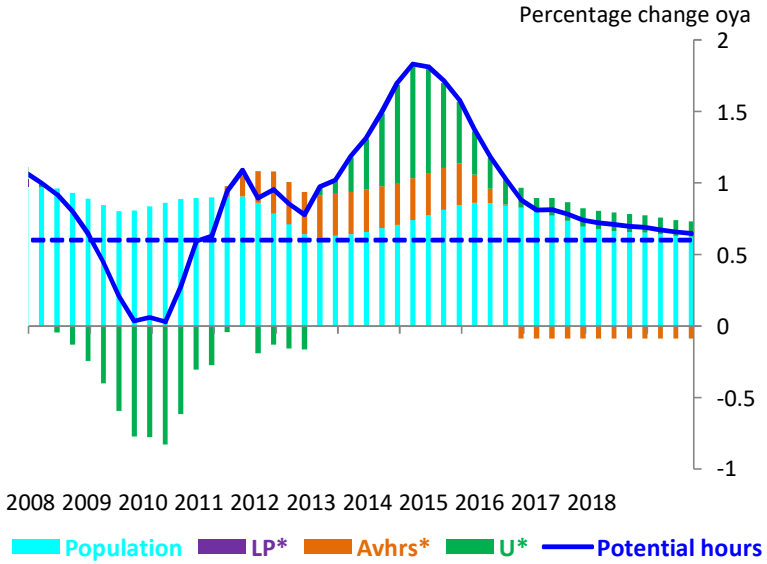


- **Business investment growth** (**LHS**) recovers from its recent softer rates, reaching robust annual growth of 8-9% in the second half of the forecast. It is above the **swathe of conditional forecasts** from our empirical models, suggesting the risks lie a little to the downside. But these investment growth rates are not unprecedented, and the profile over the forecast is broadly in line with past recovery episodes.
- The UK's **export share** **(RHS)** is a little more downward sloping than in May, mainly reflecting the further appreciation of sterling since then. The profile for the export share is largely a continuation of the downward trend over the past 20+ years.

3. Wage growth continues to rise, underpinned by an absorption of slack and strengthening in productivity growth

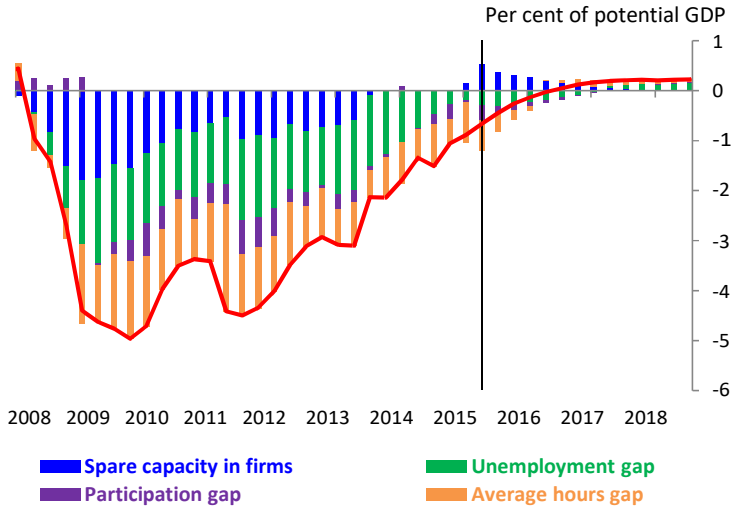
14. Accounting for potential GDP

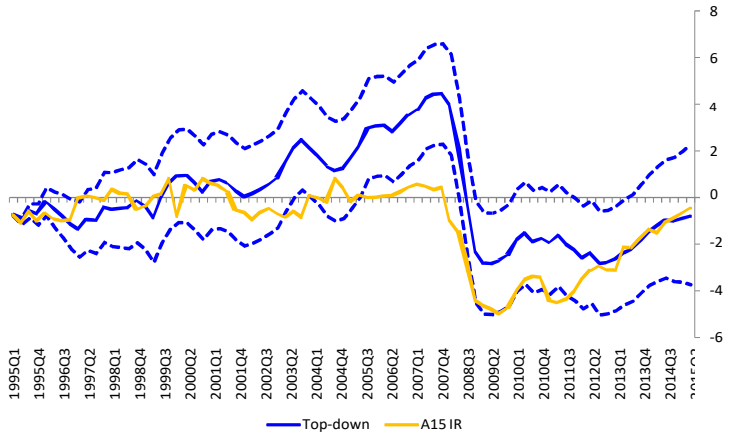




- In the recent past we think GDP growth has been outstripping growth in potential supply, and we've seen a sharp closing of the **output gap** (**Slide 15**). Within potential supply, we've seen above trend growth in **potential hours** **(LHS)**, whereas **potential productivity growth** has continued to be unusually weak, although this picture is a little less stark than in previous rounds given the upside news productivity. Over the forecast the **output gap** is closed by 2016 and only turns slightly positive beyond that, and growth is mainly accounted for by potential GDP growth, in particular by a recovery in **potential productivity** growth towards its historic average rates.
- The recent strength in **potential hours** has reflected two things (**RHS**). First, in line with the rapid decline in actual unemployment, our estimate of medium-term equilibrium unemployment (**U***) has fallen back. And we think various structural and cyclical factors have boosted labour supply, reflected in above-average contributions from **population** and **desired average hours** as well as a flat **participation rate**, which occurs despite the demographic drag
- Over the forecast the rate at which U* falls declines, as unemployment approaches our estimate of the natural rate, the somewhat higher contribution of migration to **population growth** eases and our estimate of desired average hours declines slightly. So **potential hours** growth falls back towards its historic average rate.

15. Estimates of domestic slack

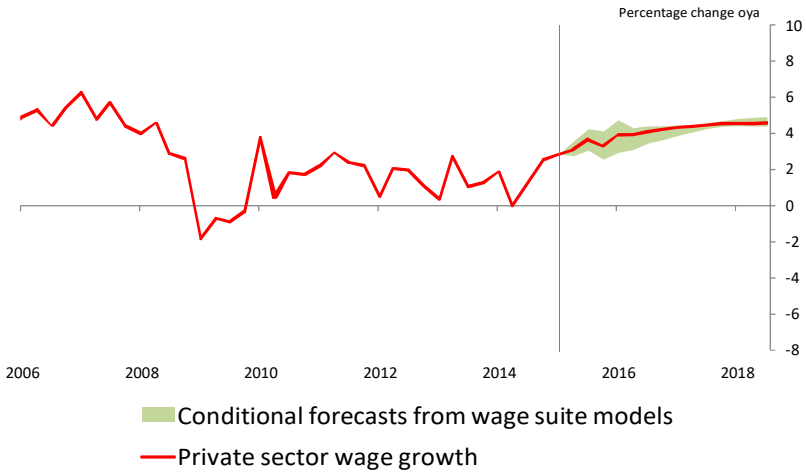




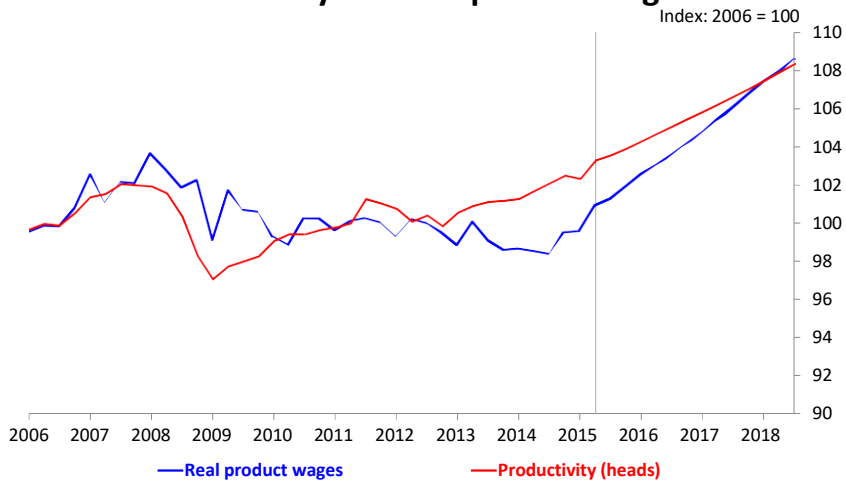
- Our estimate of the **output gap** has closed quickly over the last couple of years, so that it now starts the forecast at just 0.5pp (**LHS**). But the pace at which it contracts slows into the forecast. By 2017 the gap has turned slightly positive and flattens off.
- The behaviour of the **output gap** is mirrored in the behaviour of the **unemployment gap**. Unemployment has fallen remarkably quickly over the past two years: it starts the forecast at 5.6%, only around ½% above our estimate of the natural rate. It falls to 4.8% by the end of the forecast, a touch below our estimate of U*.
- The output gap estimate for Q3 2015 is a little wider than it was in May. This reflects two things: an unexpectedly weak outturn for hours, coupled with upside GDP news, meaning both more slack in the labour market and upside productivity news (which we've partly treated as reflecting above-normal **capacity utilisation** by firms); and recent SEAD work on a top-down measure of the output gap, pointing to a weaker number than the May IR estimate (**RHS**).

16. The outlook for wages

The wage forecast



Productivity and real product wages

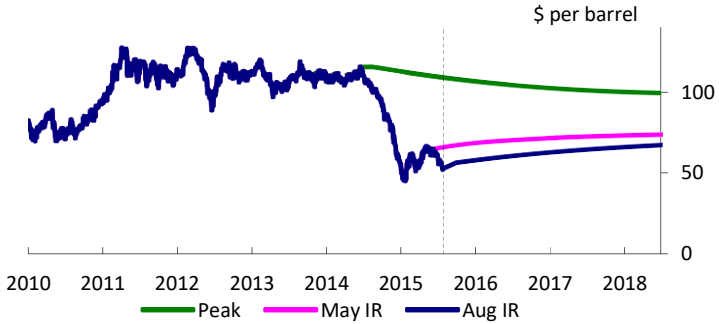


- After a prolonged period of weakness, **pay growth** in the private sector has picked up sharply recently (**LHS**), and is now broadly where we'd expect it to be given its main determinants. Despite this, the upside news in productivity has meant that there was little news for AWE-based unit wage costs.
- However, we have not taken much signal for wage *growth* from the most recent upside surprises. Indeed, over the forecast, wage growth remains in line with what's predicted by our **wage suite models** conditional on a recovery in productivity and a shrinking labour market gap as well as a judgement that real wages are below their equilibrium level (**LHS**). That assumption is a feature of the wage suite models and is also evident in a chart of **real wages** and **productivity** (**RHS**). The level of **real wages** starts the forecast below the level of **productivity**, but gradually catches up over the forecast(**RHS).** Much of the catch up comes through nominal wages (rather than prices) which means that private sector unit labour cost growth is above historic averages for much of the forecast.

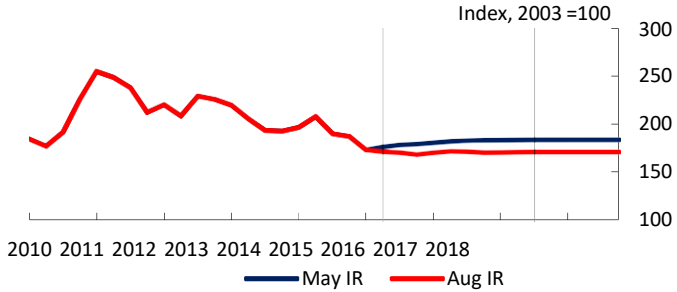
4. The drag on inflation from external factors dissipates, as stronger domestic cost growth returns inflation to the 2% target.

17. Commodities

Oil futures curves

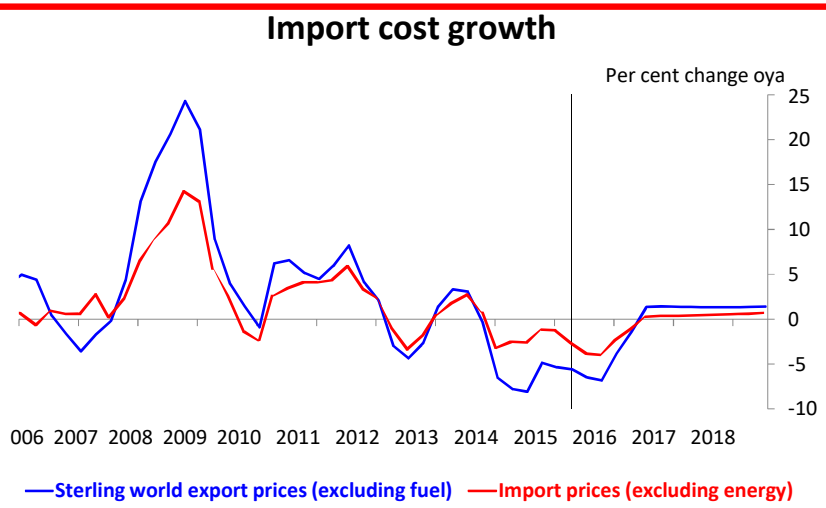


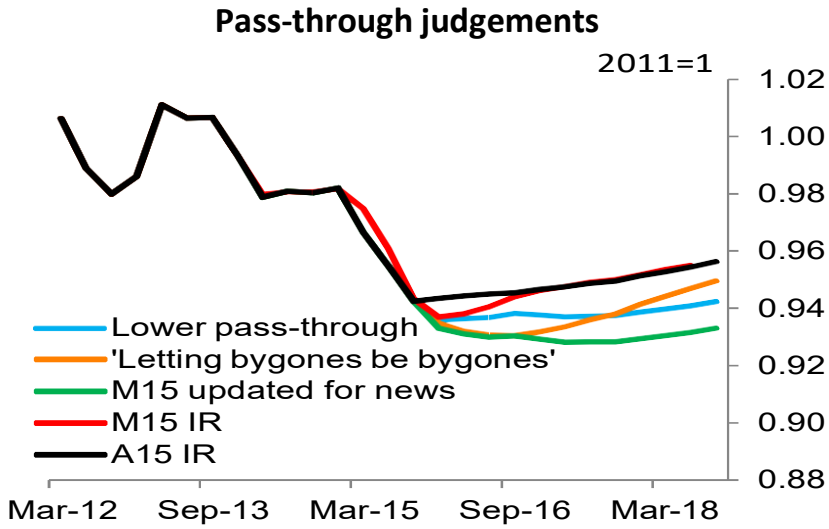
NOCs futures curve



- The spot price of **Brent crude** underpinning the August *IR* was 18% lower than the May IR price, and 55% lower than its **peak** of $115pb in June 2014, to $53pb (**LHS**). Prices across the curve were 11% and around 40% lower than the May IR and June peak, respectively. The recent fall in oil prices appears to primarily reflect supply factors. Iranian oil is expected to come back on to the market by early 2016, following the recent deal reached on 14 July. Furthermore, a stabilisation of the US rig count, a rise in US oil inventories and continued above-target OPEC oil production have contributed to lower oil prices. But the price still remains 16% above its **trough** in January 2015.
- The **futures curve** underpinning the August *IR* suggests a gradual rise in the oil price to around $68pb by the end of the forecast. But there is a lot of uncertainty around the path of future prices. In the near term, further rises in inventories could put downward pressure on prices, whereas further out, there is a great deal of uncertainty around the extent to which lower prices will lead oil supply to fall and boost oil demand.
- Also, **NOCs** prices have fallen and are 6% lower than the May IR across the curve (**RHS**). The primary driver behind the fall in metal and agricultural prices also seems to be supply surprises, which reversed earlier gains in April and May. And a stronger dollar has also been a factor. Risks to Chinese demand could have been behind some of the volatility in metal prices recently.

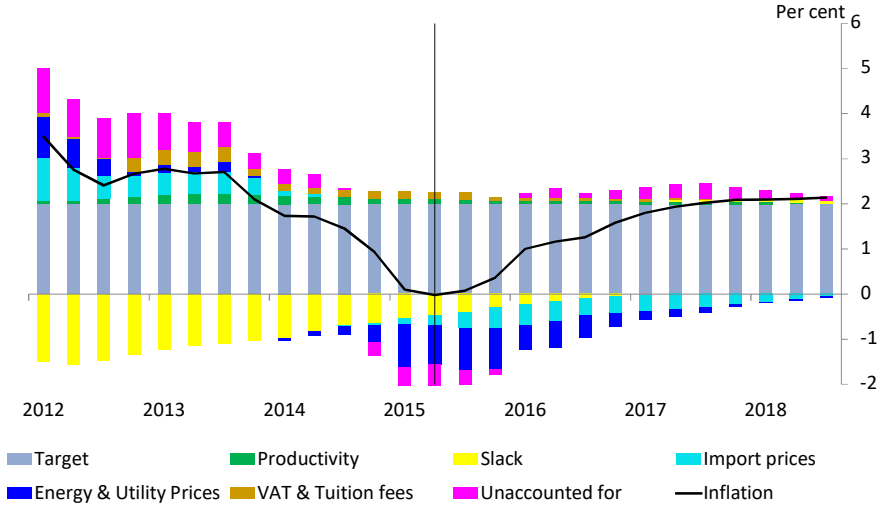
18. The effect of import prices on inflation





- The past appreciation of sterling and, to a lesser extent, the recent weakness in world prices has borne down on **sterling non-fuel world export prices (LHS)**. And although these recover to reach 1¼ % growth by the end of the forecast, **non-fuel import cost growth** is subdued throughout **(RHS)**; and import prices continue to pull down on inflation throughout the forecast (**Slide 19**).
- This round the Committee made two judgements to reduce the extent of exchange-rate pass-through to import prices (**RHS**). These were motivated by the fact that import prices had come in surprisingly strongly since sterling started appreciating in 2013. First, they **dropped the assumption that that import prices will fall further in response to the appreciation of sterling since 2013** – this change raised inflation by 0.1pp in Y2 and Y3. They also assumed that **only 60% of the appreciation since May**, and subsequent changes in sterling, **will be reflected in import prices**, rather than 85% as we had been assuming in the past - this judgement raised inflation by 0.1pp in Y1, Y2 and Y3.

19. Inflation accounting decomposition



- Inflation was 0.0% in 2015Q2, and starts the forecast at 0.1% in 2015Q3. The current weakness of inflation reflects downward pressure from **slack** combined with a drag from **import prices** and **energy prices** (**LHS**). Import prices have been falling since mid-2013 given the Sterling appreciation, but slow pass-through to consumer prices means that their contribution to annual CPI inflation is only now turning negative. Not all of the current weakness in inflation can be accounted for by the usual factors, with idiosyncratic factors, picked up by **residual** (e.g. lower food price inflation), also at play.
- Inflation picks up to 1.0% at the start of 2016 as the effects from past fall in oil prices start to wane. However, energy and import price pass-through, continue to drag reflecting the past and ongoing falls in Sterling world export prices. This drag from energy is greater in the near-term than it was in May, given the fall in oil prices (**slide 17**). Further out, as the output gap closes and turns slightly positive and the drag from import prices finally dissipates, inflation climbs to back to target at the year 2 point and is 2.1% at year 3.