



BANK OF ENGLAND

# Speech

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## **A tale of two labour markets: the UK and US**

Speech given by

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*It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness, it was the spring of hope, it was the winter of despair, we had everything before us, we had nothing before us, we were all going direct to Heaven, we were all going direct the other way – in short, the period was so far like the present period...*

*-Charles Dickens, A Tale of Two Cities*

The opening of Charles Dickens' *A Tale of Two Cities* could easily be written about the UK labour market today. In many ways it is the "best of times". The unemployment rate is at 5.1% – the lowest rate in over ten years. Over 260,000 net new jobs were created over the three months through November, and there are now over 1.7 million more people employed than before the financial crisis. The employment rate for the working-age population is 74% – the highest since records began in 1971.

But by other measures, the labour market could be described as the "worst of times". Wage growth has slowed recently – with whole economy total pay growth slipping down from 3.3% oya in the three months to May to 2.0% oya over the three months to November. Median incomes have only grown by 1.6% over the last 4 years, so that after adjusting for inflation, median household income in 2014/2015 is still about 2% below its peak in 2009/2010.<sup>1</sup> The many workers who have recently found employment may still feel the "spring of hope", but this could easily slip into a "winter of despair" if their earnings do not grow faster.

This dichotomy in the UK labour market presents a substantial challenge for those of us setting monetary policy. By most quantity measures, the UK labour market appears to be very healthy and near equilibrium. If the challenges companies are already facing to find workers continue and accelerate, this should drive a sharp pickup in wages and in inflation that would suggest we should have already begun tightening monetary policy. By most nominal measures, however, the UK labour market still has some slack and firms are not under so much pressure to find and keep workers that they need to pay more. With slow wage growth, inflation currently at 0.2%, and downward price pressure from cheaper energy and sterling's past appreciation, there appears to be little risk of inflation suddenly spiking to well above our 2% target in a way that would require increasing interest rates soon.

Therefore, correctly interpreting recent developments in the labour market is critically important. A misinterpretation could lead to inappropriate monetary policy and Dickens' "age of foolishness". My goal today is instead to help steer us toward the preferred "age of wisdom" by evaluating the UK's labour market through several different lenses. First, I will compare trends in the UK labour market to those in the US – highlighting how the UK is similar to a country which recently started to tighten monetary policy. Second, I will discuss several key differences between the labour markets in these two countries – mainly in

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<sup>1</sup> These numbers are based on projections from the Annual Survey of Hours and Earnings (ASHE) conducted by the ONS and from the IFS, respectively.

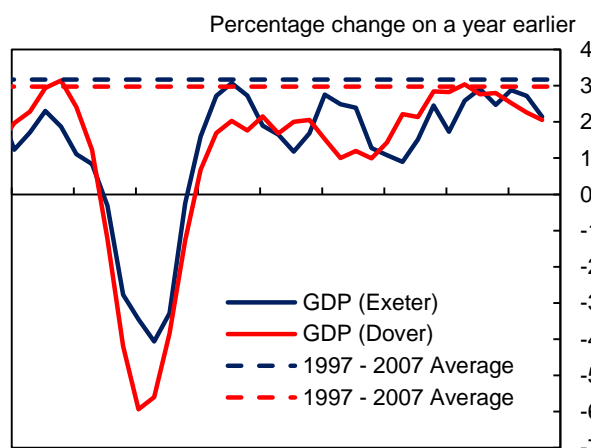
labour market participation, self-employment, migration, and the consistency of the recovery. Third, I will discuss what this analysis of the two countries' labour markets implies for wage growth and labour costs – getting at the heart of how the UK and US labour markets can appear to be at their “best” and “worst” simultaneously. Finally, I will conclude with implications for monetary policy in the United Kingdom.

### 1. The UK and US: Similarities

The similarities between the UK and US labour markets are so striking that at times it can be difficult to tell the data for one country from the other. Just to keep you guessing, I'll temporarily hide the identification of each of the countries and look at a number of key trends since 2007 – in both their labour markets and key aspects of their economies relevant to the labour market. Instead of showing you pictures for the UK and US, I'll take Dickens to heart and rename them after two lovely cities in both countries – Dover and Exeter. And just so you are warned, I'll ask you in a few minutes if you can guess whether Dover represents the UK or US – and likewise for Exeter.

To begin, the key macroeconomic statistics and monetary policy responses of both countries – proxied by Dover and Exeter – have been similar. Figure 1 shows that in both cases, GDP growth plummeted during the crisis in 2008, had some ups and downs in the initial recovery phase from 2010 through 2013, was fairly solid for about a year, and then moderated to about 2% oya growth in Q3 2015. The UK and US have been neck and neck for the honor of being the fastest growing G7 economy in 2014 and 2015 – and probably 2016. Figure 2 shows that both countries lowered their main policy interest rate to about zero as the crisis unfolded, and did not raise rates for over six years. In December 2015, the US “lifted off” – so I have consciously stopped this graph in November of 2014 so as not to give away the country/city identity....

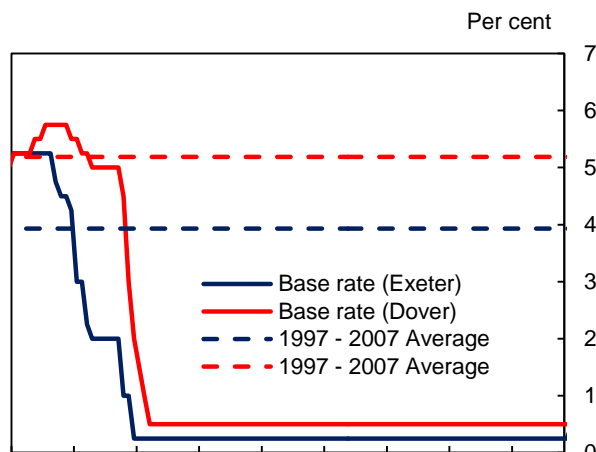
**Figure 1: Output growth**



2007 2008 2009 2010 2011 2012 2013 2014 2015

Sources: BEA, ONS and Thomson Reuters Datastream.

**Figure 2: Policy rates**



2007 2008 2009 2010 2011 2012 2013 2014 2015

Sources: Federal Reserve, Bank of England and Thomson Reuters Datastream.

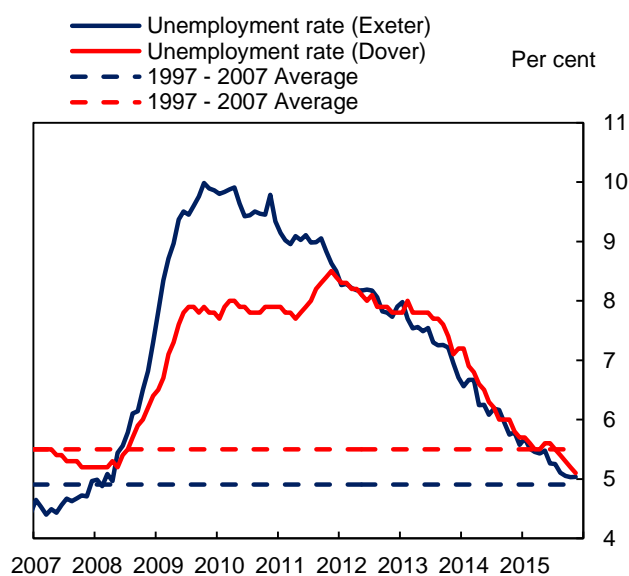
The currencies in both countries have also strengthened sharply since the spring of 2013: the dollar by 25% as of today and sterling by 22% as of its recent peak last summer (although it has since fallen back so that its overall appreciation since the spring of 2013 is now only 13%). These currency appreciations have reduced the price of imported goods in each country and dragged on inflation. This drag, combined with even larger drags from cheaper energy and food, have caused inflation to fall sharply and bounce around zero over much of 2015. Table 1 shows how strikingly similar the most recent measures of headline and core inflation are in both countries – although service inflation is somewhat higher in the UK than the US.<sup>2</sup>

**Table 1: Inflationary pressures in the UK and US**

	UK	US
<b>Inflation</b>		
Headline inflation	0.2	0.4
Core inflation	1.4	1.3
Service inflation	2.8	1.9
Peak ERI appreciation from spring 2013*	22%	25%

\*Note that sterling has depreciated since its peak last summer so that its overall appreciation since the spring of 2013 is currently only 13%.

**Figure 3: Unemployment rate**



Sources: BLS, ONS (LFS) and Thomson Reuters Datastream.

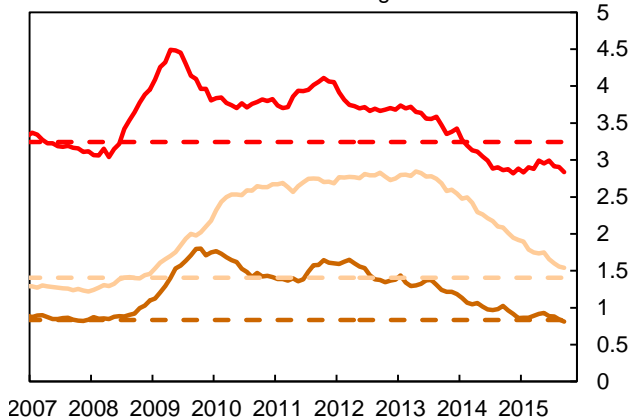
Moving to the labour market, the similarities grow even stronger. Figure 3 shows the impressive decline in the unemployment rate in both countries from post-crisis highs to about 5% in the most recent data. The unemployment rate in both countries is now around or below the corresponding pre-crisis average (in the dashed lines calculated over 1997 through 2007). In both countries, the unemployment rate is estimated to be around the level consistent with “full employment”. Figure 4 provides more detail on which types of unemployed are finding work based on their duration of unemployment. It shows that the decline in the unemployment rate has occurred for all groups. This fall has been particularly sharp for the short-term unemployed, so that this rate is now solidly below pre-crisis averages for both countries. But the unemployment rates for the medium and long-term unemployed have also declined to reach their pre-crisis rates in both countries, except for the unemployment rate for the long-term unemployed in Exeter which may still have some space to fall.<sup>3</sup>

<sup>2</sup> UK headline and core inflation is measured using the CPI, while US inflation is measured with the PCE. I focus on the PCE for the US as the weights for different sectors – most importantly housing – are closer to those for the UK CPI than the US CPI measure. The PCE measure is also more closely followed by the Federal Reserve Board, and therefore most important for monetary policy.

<sup>3</sup> This could also be the case in Dover where the long-term unemployment rate has undergone a structural decline since the 1990s.

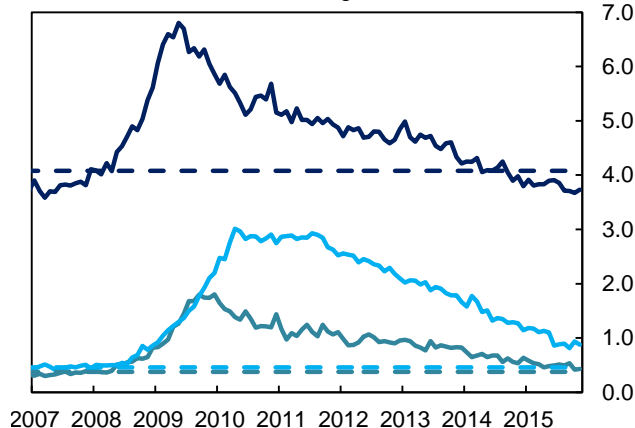
**Figure 4a: Unemployment rate, by duration**

— 0 - 6 months (Dover)  
— 6 - 12 months (Dover)  
— 12 months + (Dover)  
- - - 1997 - 2007 Average  
- - - 1997 - 2007 Average  
- - - 1997 - 2007 Average



**Figure 4b: Unemployment rate, by duration**

— 0 - 6 months (Exeter)  
— 6 - 12 months (Exeter)  
— 12 months + (Exeter)  
- - - 1997 - 2007 Average  
- - - 1997 - 2007 Average  
- - - 1997 - 2007 Average



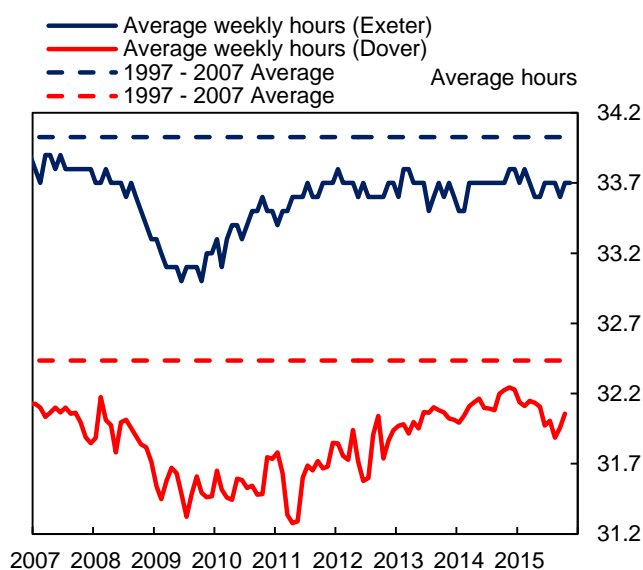
Sources: BLS, ONS (LFS) and Thomson Reuters Datastream.

Not only are the various unemployment rates and trends similar in the two countries, but Figure 5 shows there are also similarities in average hours worked. Hours worked fell during the crisis in both countries, undoubtedly as companies reduced working hours to meet slower demand. Then, average hours in both countries increased after the crisis, as growth and production picked up. This upward trend has since stalled and roughly levelled off to around 2014 averages in both countries (albeit with some ups and downs between). People are working fewer hours on average relative to pre-crisis in both countries (though it is worth mentioning that average hours were on a downward trend before the crisis).

This trend of lower hours worked could indicate some slack in the labour market if people want to return to their longer pre-crisis working hours. But survey evidence and the lack of improvement in these measures over the last two years (while most other aspects of both labour markets have continued to tighten) suggests that much of these lower hours worked reflects a choice by workers and an equilibrium level. My colleague on the MPC, Martin Weale gave an excellent speech last week which carefully analysed these trends in hours worked in the UK. He presented convincing new evidence that the decline in hours worked is due to income effects (as incomes increase, workers chose to work fewer hours) and demographics (as older workers prefer to work fewer hours). His analysis suggests that the current level of average hours worked is around its equilibrium level for the UK at current wage rates.<sup>4</sup>

<sup>4</sup> See Weale (2016). Benito and Saleheen (2013) find that individuals change their hours in response to financial shocks, suggesting that workers likely increased their hours in the aftermath of the financial crisis, but are now normalizing their work patterns.

**Figure 5: Average hours**



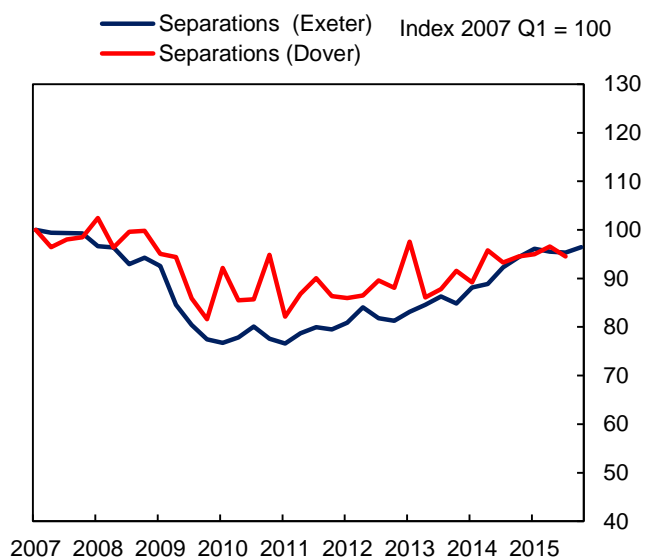
Sources: BLS, ONS (LFS) and Thomson Reuters Datastream.

Even if unemployment rates and hours worked are around the levels believed to be “equilibrium”, (i.e., levels that are sustainable without wages picking up faster than consistent with the inflation target), it is important to realise that the equilibrium is very difficult to estimate in real time. The structure of the economy and labour force has changed so sharply over the past decade, that it is impossible to know exactly where “equilibrium” is and what is sustainable. Fortunately, many economists – including those at the Bank of England – still exert an impressive amount of effort and the highest quality analysis to try and pinpoint exactly where this equilibrium point is. But we all appreciate that there are wide uncertainty bands around these estimates.

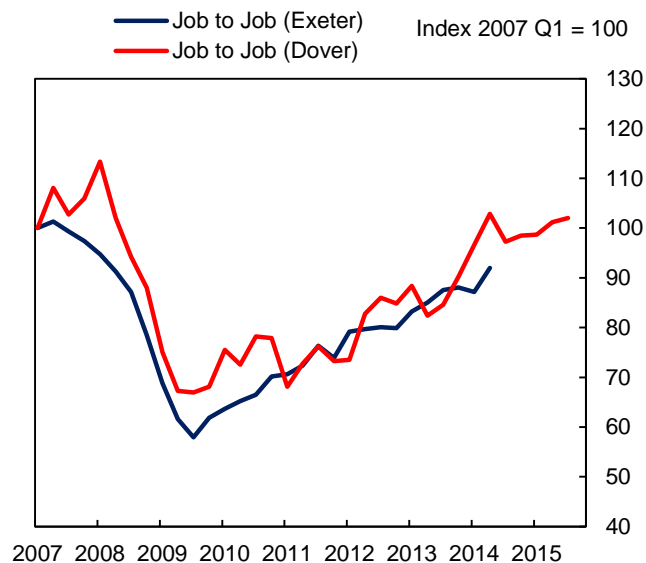
Therefore, for additional insight on how close the labour market is to equilibrium, I find it useful to closely follow measures of labour market “churn” – basically how easy it is for workers to find jobs and for companies to find workers, as well as if workers are confident enough to quit and switch jobs. Figures 6 through 9 show four of these measures for the US and UK – I mean Dover and Exeter: separations (when an employee leaves a job for any reason), job-to-job flows (when an employee moves from one job to another), quits (when an employee quits a job), and vacancies (jobs a company is trying to fill). Each indicator is graphed as an index set at 100 in the year 2007 in order to adjust for the different size of the two economies.<sup>5</sup> The similar performance of each of these different measures of labour market churn is quite striking. Each churn measure has improved starkly from its recent crisis lows, with separations and job-to-job flows currently around 2007 levels in both countries, quits slightly below (especially for Dover) and vacancies well above for both countries.

<sup>5</sup> A related exercise, controlling for employment growth shows similar results.

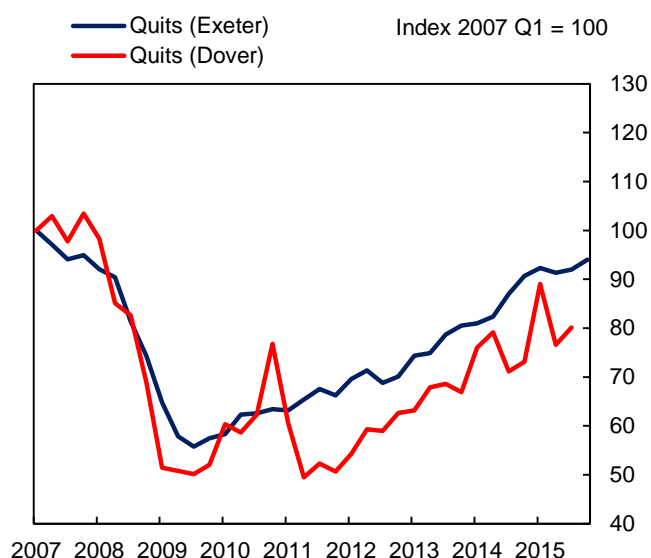
**Figure 6: Separations**



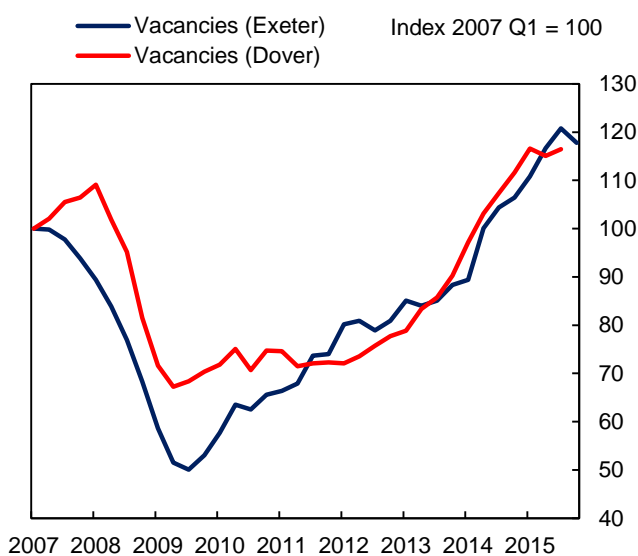
**Figure 7: Job to Job flows**



**Figure 8: Quits**



**Figure 9: Vacancies**

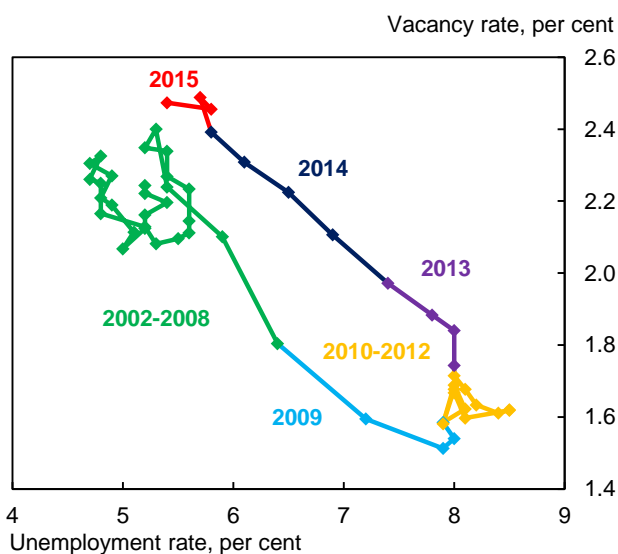


Sources: BLS, US Census Bureau, ONS and Thomson Reuters Datastream.

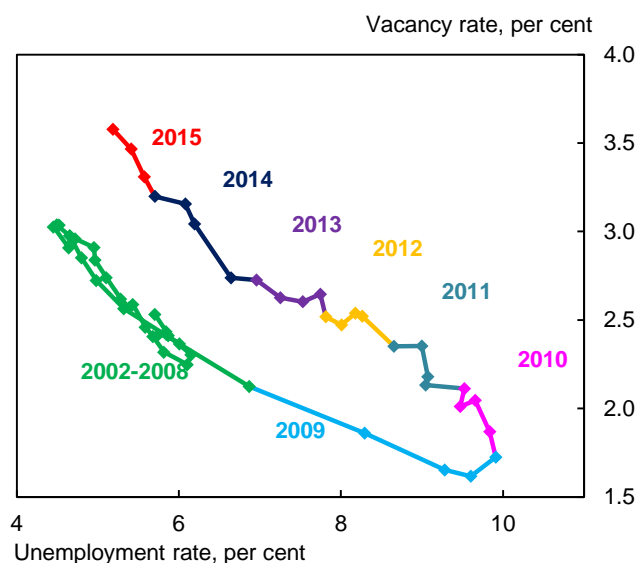
Another way of measuring labour market churn, which simultaneously captures tightness from the viewpoint of both workers and employers, is the Beveridge curve. It shows the relation between the vacancy rate and the unemployment rate. It is called a “curve” because an economy traditionally moves up and to the left during recoveries, as the unemployment rate falls and the vacancy rate increases. Then movement stalls at a peak as the labour market becomes very tight and it is harder for companies to find workers, before moving down and to the right as the economy slows, the unemployment rate increases, and the vacancy rate falls. Figure 10 shows very similar patterns for both countries as they have followed the traditional movement around the “curve” over the past fourteen years. Both countries also show the typical upward shift of the curve that often occurs after a sharp recession. This upward shift could indicate that the “matching” of

unemployed workers to company vacancies is more difficult, a typical result of a recession when a larger share of the unemployed have been out of work for a longer period and therefore have more difficulty finding employment.<sup>6</sup> This increase in skill mismatch could also reflect a longer term structural mismatch between the types of jobs created and skills of the workforce, or a more temporary mismatch with the existing skills of new entrants into the labour force (such as through younger entrants or migration). There is also preliminary evidence that Dover is near this “stall” point, indicating the recovery in the labour market is largely complete.

**Figure 10a: Beveridge curve, Dover**



**Figure 10b: Beveridge curve, Exeter**



Sources: BLS, ONS and Thomson Reuters Datastream.

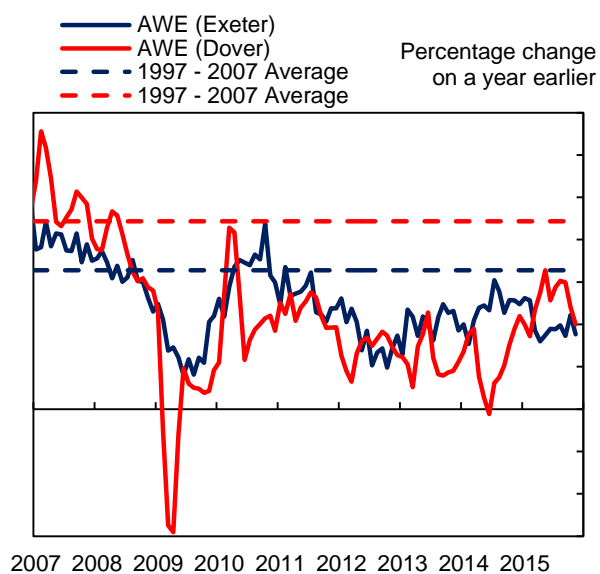
I could continue to show you graphs such as this where it is hard to differentiate between these two cities – or countries – for the rest of my time here today. But I’m fairly sure that you have absorbed the key point: the evolution of the US and UK labour markets has been strikingly similar by most key measures. There is one other set of similar indicators, however, that I would be remiss if I did not show you. They are at the heart of the current puzzle in these labour markets: slow wage growth. When labour markets appear to be as tight and close to equilibrium levels (to the best that we can measure them) as we have just seen in these two countries, we generally see a sharp pickup in wages. Yet, as shown in Figure 11a, any upward momentum in wage growth has stalled at around 2% in each country as of Q3 based on the most popular and timely wage measure – for average weekly earnings. Granted, this measure has been more volatile and has recently been higher in Dover than in Exeter. But what is particularly striking is that wage growth remains over a percentage point below pre-crisis averages in both countries.

<sup>6</sup> Diamond and Sahin (2014) discuss these shifts in the Beveridge curve. Hobijn and Sahin (2012) argue that skill mismatch was one of the factors playing a role in the shift of the Beveridge curve in the US and UK. Patterson et al. (2013) also find that matching difficulties rose sharply during the recession in the UK. However, there is also evidence that the fall in matching efficiency may not be entirely attributable to the crisis, see e.g. Hall and Schulhofer-Wohl (2015) or Speigner (2015).



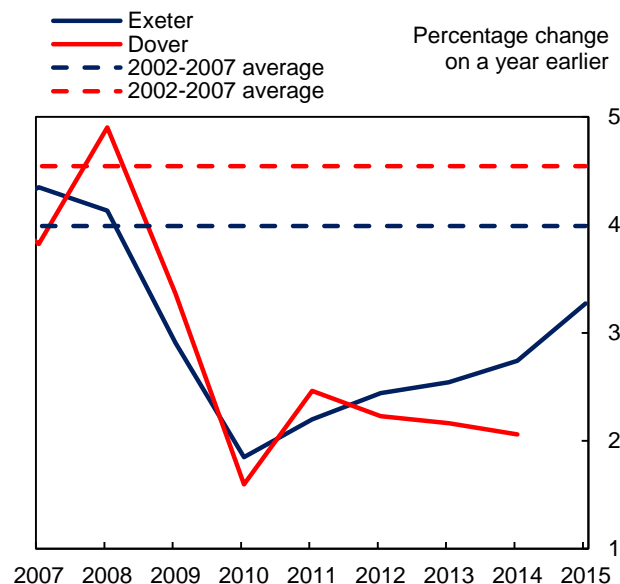
By now you may be thinking that you've figured out which of these lines is the US and which is the UK. Dover (red) must be the US because wage growth must have been stronger there to justify their earlier rate hike? Or were you thinking that Dover must be the UK because wages in the UK began to accelerate last year? Before you become too confident in either guess, it is important to remember that there are many different ways to measure wages – and they do not always send the same message. For example, Figure 11b shows wage growth in the two countries using measures which go some way toward controlling for changes in the composition of the workforce.<sup>7</sup> Now wage growth in Exeter recently appears stronger (and increased more last year) than in Dover. The key message from the last graph about both countries still remains – wage growth is over a percentage point below the pre-crisis averages that were previously consistent with inflation around 2%. But which country is represented by which city is not quite so clear....

**Figure 11a: Average weekly earnings**



Sources: BLS, ONS and Thomson Reuters Datastream.

**Figure 11b: Median growth rate of earnings**



Sources: Federal Reserve Bank of Atlanta and ONS (Economic Review 2015).

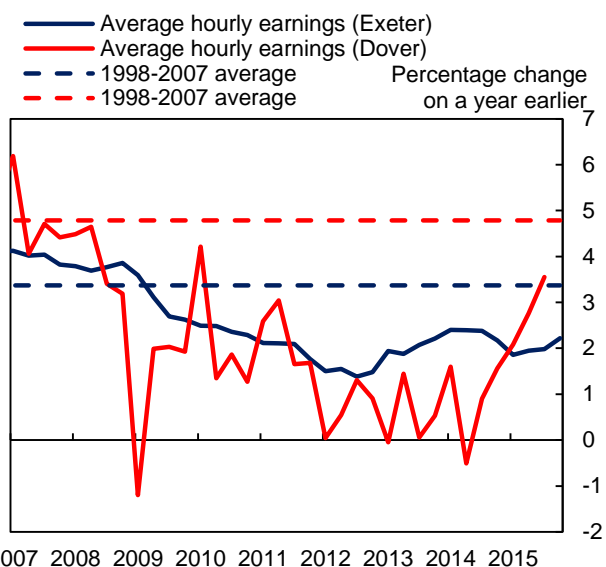
Adding to the confusion, other measure of pay growth have suggested that wage growth may not be quite as dismal, and some measures could even be described as robust in both countries and above pre-crisis averages. For example, Figure 11c shows average hourly earnings, which accounts for the changes in average hours worked in both countries (as shown in Figure 5). Figure 11d shows average growth in real wages, which accounts for low headline inflation. As of Q3, average hourly earnings growth had picked up sharply in Dover, and real wage growth had increased in both countries to above pre-crisis averages.<sup>8</sup> From the perspective of workers, real wage growth is the best measure of the improvement in their living standards as it best captures how much more they can purchase each month after adjusting for any changes in prices.

<sup>7</sup> The line for the US measures wage growth based on data compiled by the Federal Reserve Bank of Atlanta and the line for the UK is based on data from the ONS Economic Review (2015).

<sup>8</sup> Each of these figures is based on quarterly data and therefore does not include data for Q4 2015. The discussion in Section 3 will incorporate more timely wage data calculated using the most recent monthly information from November when possible.

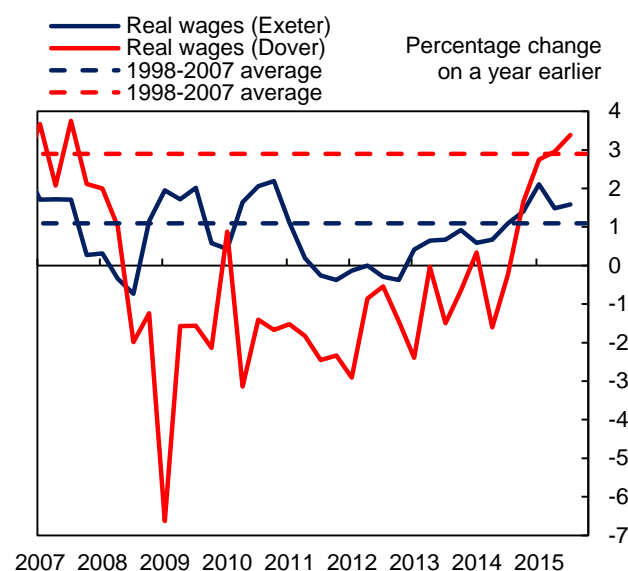
It is unclear, however, whether the pick-up in real wage growth will prove persistent. Is this simply an artifact of low inflation combined with moderate pay growth, temporarily boosting real wages? Or will companies respond to any pickup in inflation with higher nominal pay growth and therefore maintain this robust growth in real wages?

**Figure 11c: Average hourly earnings**



Sources: BLS, ONS and Thomson Reuters Datastream.

**Figure 11d: Real wage growth**



Sources: BLS, ONS and Thomson Reuters Datastream.

Let me summarise what we have learned from all of these indicators. There are striking similarities in macroeconomic and labour market developments in the UK and US. Both countries have experienced sharp recoveries in GDP to solid – albeit not spectacular – growth rates since 2013. Both have kept policy rates near zero since the crisis – with only one 25bps increase by the US last month. Both have headline inflation just above zero today, due in part to sharp falls in energy prices, plus additional drags from food prices and currency appreciation. Both have core inflation rates of 1.3% or 1.4%. Both have continued to experience rapid job creation, sharp falls in unemployment to around 5%, and steady improvements in labour market churn – all to around the point where wages tend to increase sharply. Yet headline wage growth remains slow in each country and not consistent with the other measures indicating a tight labour market.

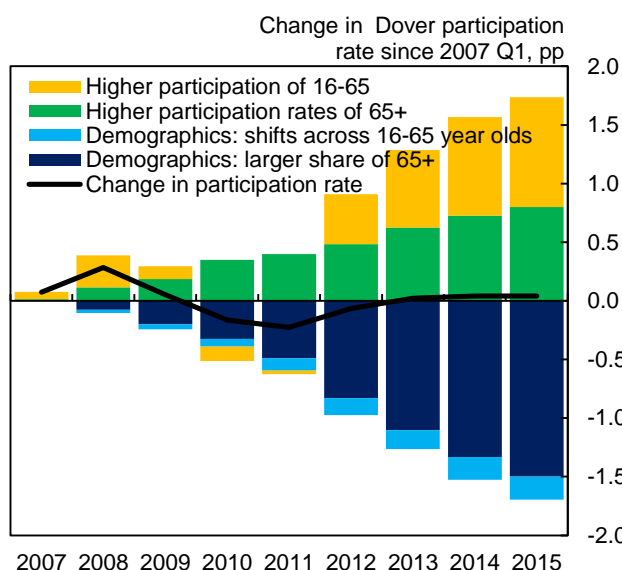
Wage growth by other measures, however, such as adjusted for composition effects, hourly effects, and inflation, has been stronger and somewhat more consistent (albeit to varying degrees), with the other indicators suggesting that both labour markets are near or at equilibrium.

## 2. The UK and US: Differences

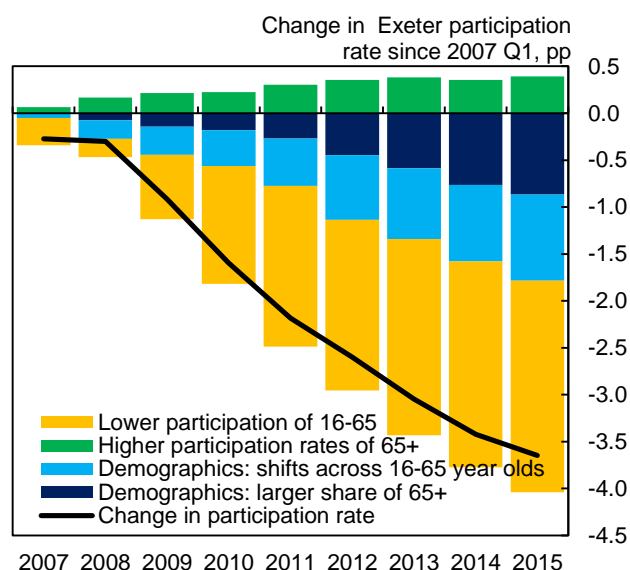
Is anyone ready to guess which city is which country? Is Dover the UK or US? For those of you who follow the twists and turns of this labour market data, a few charts should have provided some hints. I'll now highlight four major differences between the UK and US labour markets: in participation, self-employment, migration, and the continuity in the labour market recovery. This should take you out of your Dickens-like misery, as by each of these measures it is easy to identify the UK.

First – and most striking – are the different labour force participation trends in the two countries. Labour force participation is defined as the share of the working age population that is either in work or looking for work. The black line in Figure 12a shows that in Dover, labour force participation has basically been steady over the last eight years around its current participation rate of 63.5%. In contrast, Figure 12b shows that in Exeter, labour force participation has continually declined over the last eight years by almost 3.5pp to reach a low of 62.6% today. As you've probably guessed, this means that Dover is the UK and Exeter is the US.

**Figure 12a: Change in participation rate, by demography, Dover**



**Figure 12b: Change in participation rate, by demography, Exeter**



Sources: BLS, ONS, Thomson Reuters Datastream and Bank of England calculations.

What has driven this sharp divergence in labour market participation in two countries whose labour markets appeared so similar by most other measures? Both countries are aging at roughly similar rates – a trend which tends to naturally decrease participation rates over time. This automatic decline in participation rates that would be expected to occur just due to demographic trends – and assuming no other changes in participation rates by age group – is captured in the two blue bars in Figures 12a and 12b. This shows that this natural demographic effect would have been expected to decrease UK participation by around 1.5pp

from 2007 through 2015, a little less than the 1.8pp drag in the US.<sup>9</sup> Partially counteracting this, participation for older workers has increased in both countries. Bank of England analysis suggests that this reflects some combination of factors that are both structural (e.g., improved longevity, changes to the state pension age and out-of-work benefits) and cyclical (e.g., delayed retirement to bolster pension incomes).<sup>10</sup> This increased participation of older workers is shown in green on the graph – and has been larger in the UK than the US (although participation rates for older cohorts started at lower levels in the UK).

Even more important in explaining the differences between countries, however, is the yellow bar – the infamous “other”. What could explain this “other”? One factor, which has undoubtedly played some role, is different changes in government benefit policy in the two countries. Both countries increased fiscal stimulus during the crisis, but through different programs and approaches. A detailed explanation of these changes – and how they could have interacted with the labour market and participation – would require a speech unto itself (and probably more than one). For those of you interested in details, Mulligan (2015) provides an excellent and thorough analysis of the changes in UK and US benefit policies since 2007. It shows that the UK programs were designed in a way that were more stringent but reduced marginal tax rates on both personal income and consumption, possibly increasing incentives to work for some people. UK programs also reduced the costs to companies for employees, thereby providing an incentive to keep workers. In contrast, the changes to US benefit policy over this period slightly increased the cost to employers for workers, and substantially reduced the incentives to work – such as by easing the eligibility for benefits and increasing the implicit tax rate for moving from unemployment to work. Although it is difficult to calculate the exact effect of any of these different policies on labour force participation, especially given other policy and economic changes at this time, it is likely that they – and especially their combined effect – may have increased the incentive to work and corresponding employment rate in the UK relative to in the US.

Related to these divergent trends in labour force participation is another striking difference between the UK and US labour markets – the increased share of the UK workforce that is self-employed.<sup>11</sup> Many of us have an image of the US as the land of the serial entrepreneur – often a group of young men (unfortunately not nearly as often women) with a dream who start a company in a garage. Companies such as Apple, Microsoft, Amazon and Harley Davidson come to mind. Try googling “companies started in a garage” – and you’ll be surprised not only by how many websites you find answering this question, but that most of them are US companies. Figure 13 suggests, however, that UK workers are actually more likely to be self-employed, and this proportion has increased noticeably since the crisis to almost 15% today. In contrast, the share of self-employed in the US has not only remained well below UK levels, but fallen a bit since 2007 to 6.3% today. Granted, many of the people counted as self-employed may not be trying to start the next Google or Apple – and are probably not working in a garage. Data for the UK suggests that many of

<sup>9</sup> The predominance of the darker blue bars for the UK occurs because the UK is experiencing its demographic drag a little later than the US, so that the main factor reducing participation occurs through a larger share of older workers.

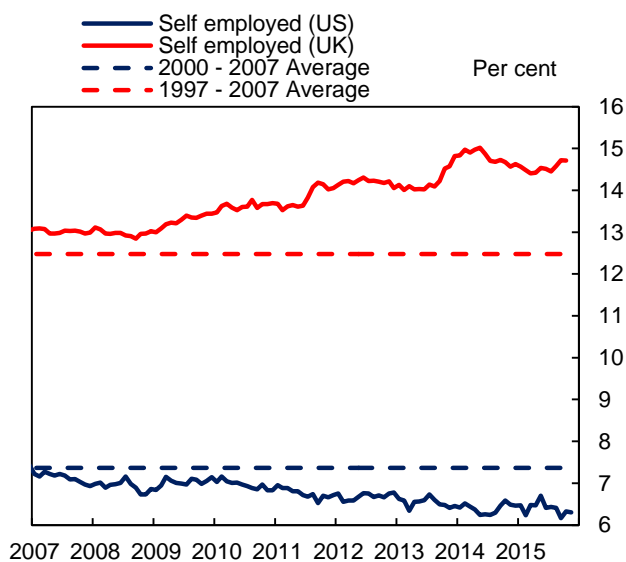
<sup>10</sup> See ‘Explaining recent trends in participation’ in the November 2014 Inflation Report.

<sup>11</sup> There has also been an increase in part-time workers in both the UK and US, and a continuation of a longer-term trend of having a higher share of part-time work in the UK than the US. The relative differential between the two countries has not changed substantially, however, so I do not discuss this as a recent difference in the evolution of the two countries’ labour markets.

these self-employed are people running small businesses in the construction sector or contracting out their expertise on a project-by-project basis – such as for drafting, consulting or other professional and technical fields. Nonetheless, this is a noteworthy difference between the US and UK labour markets.

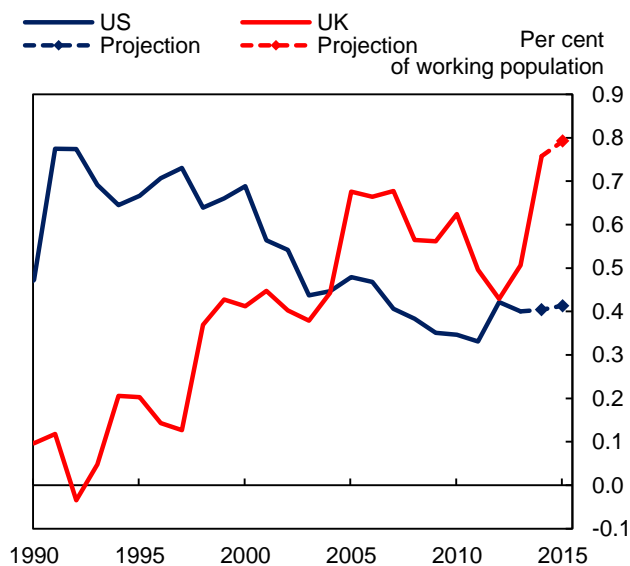
A third difference in these labour markets is the role of migration. Figure 14 shows net migration as a share of the working population based on data from the OECD (with ONS projections). This migration share was substantially higher for the US than the UK through the 1990s and early 2000s, and higher for the UK since about 2005. The differential between migration shares in the two countries has ebbed and flowed over time, with almost identical shares as recently as 2013. In 2015 net migration as a share of the working-age population is expected to be about 0.4pp higher in the UK than the US.

**Figure 13: Self employment**



Sources: BLS, ONS (LFS) and Thomson Reuters Datastream.

**Figure 14: Net migration**

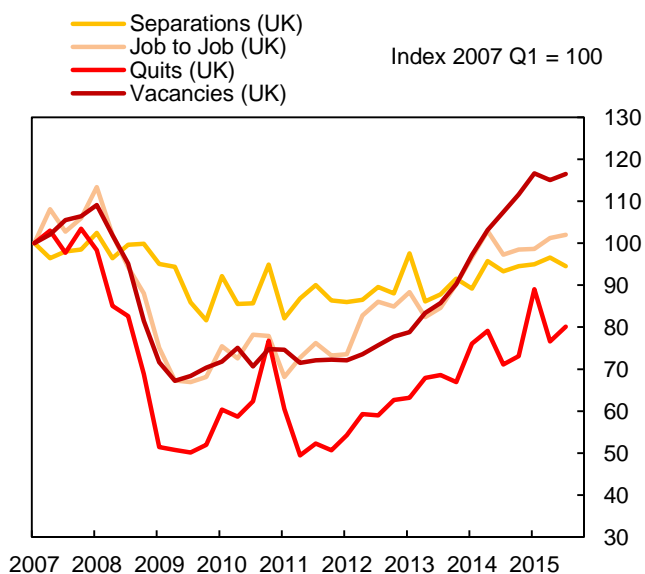


Sources: OECD, BEA, ONS and Bank of England calculations.

A final difference between the two countries is more speculative – but worth considering. By some measures, the US recovery has been more steady and consistent, while the UK recovery began in fits and starts and took longer to gain momentum and become sustained. For example, return to Figure 8 showing the number of quits – a measure of workers’ confidence that they will be able to find another job. In the US (Exeter), this measure started to turn around as early as mid-2009, and has steadily improved since then. In contrast, the number of quits in the UK (Dover) showed signs of starting to turn around at the same time, but then fell back sharply at the start of 2011, and stayed at depressed levels for several months before restarting its gradual improvement. Similarly, Figure 10 with the Beveridge curves shows the US moving steadily through the curve in the traditional progression from recession to recovery, while the UK movement stalled from 2010 through 2012.

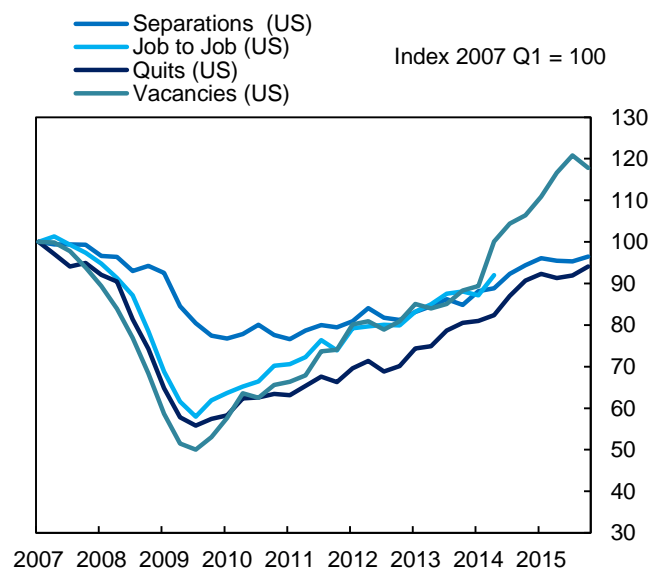
Plotting the four measures of labour market churn together on one chart makes the consistency of the recovery in the US labour market clearer, especially when compared to the stops and starts in the UK. For example, Figure 15 shows a clear turning point in the US indicators in 2009 before fairly steady upward momentum in each measure. Drawing a trend line doesn't require any fancy econometrics. In contrast, the UK indicators show more starts and stalls before embarking on a path of continued improvement. There is still clear improvement since 2014 in all indicators – but the positive momentum has only been established for a shorter period and the recovery appears to have stalled around 2010 to 2012. This shorter period of sustained momentum could mean less confidence in the UK recovery until it has been in place for longer.<sup>12</sup>

**Figure 15a: Labour market churn, UK**



Sources: ONS and Thomson Reuters Datastream.

**Figure 15b: Labour market churn, US**



Sources: BLS, US Census Bureau and Thomson Reuters Datastream.

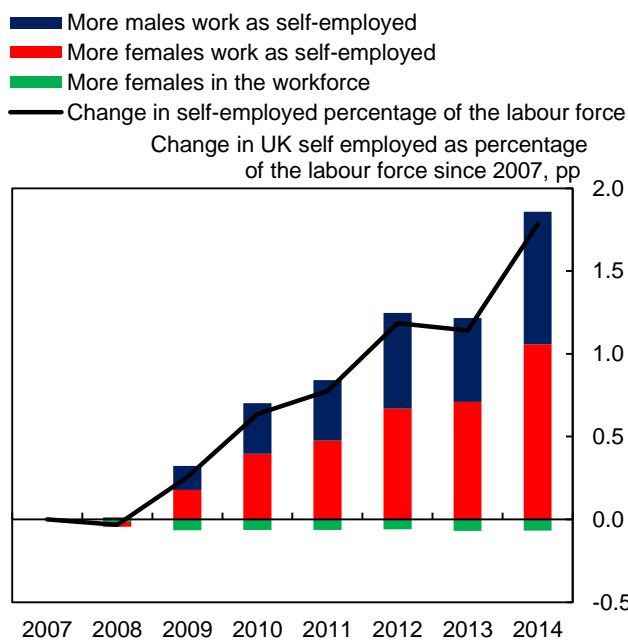
These four differences in the UK and US labour markets are not independent and may have some important interrelationships. For example, one common thread may be the impact of the recent challenges in the euro area and this region's closer links with the UK than the US. The fits and starts of the UK labour market recovery – especially around 2010 to 2012 – may be related to uncertainty about the euro area over this period. Moreover, the academic literature suggests that weaker economic growth and job creation is one important factor “pushing” migrants to other countries; this suggests that the weaker recovery in the euro area after 2010 may have contributed to increased migration into the UK.

The differences between UK and US labour force participation rates and self-employment rates could be linked. UK participation rates may have been bolstered relative to those in the US by the increased tendency to work as self-employed in the UK. Some workers may want to work, but not full time, possibly because they are around retirement age or have family-care responsibilities. This is supported by the evidence in

<sup>12</sup> Some of this difference between countries could be due to the natural volatility of each series used. But, even after accounting for this possibility, the UK recovery still appears less metronomic.

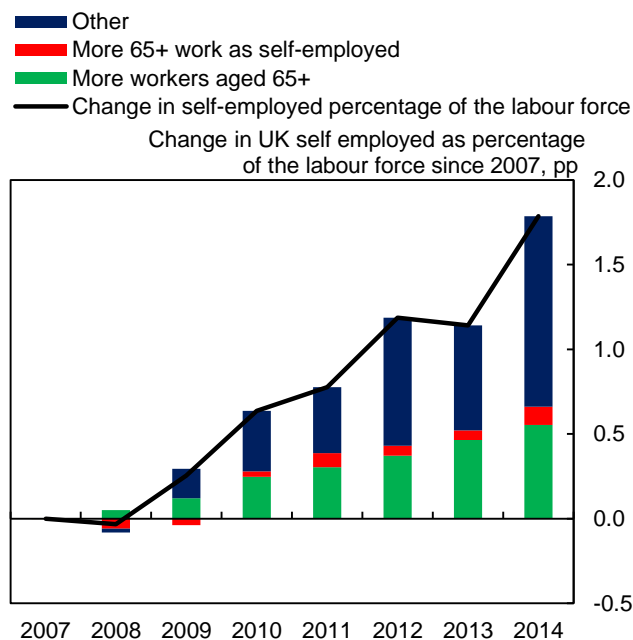
Figures 16a and 16b which breaks out the increase in the self-employment share of the UK population driven by males/females and older workers. It shows that a greater tendency for females to become self-employed has driven over half of the increase in self-employment in the UK. Workers over 65 have also driven a significant share of this increase.<sup>13</sup> These groups of workers may have been less likely to participate in the labour force if they did not have the flexibility of self-employment.

**Figure 16a: Change in self-employment rate, by gender**



Sources: ONS, Thomson Reuters Datastream and Bank of England calculations.

**Figure 16b: Change in self-employment rate, by age**



Sources: ONS, Thomson Reuters Datastream and Bank of England calculations.

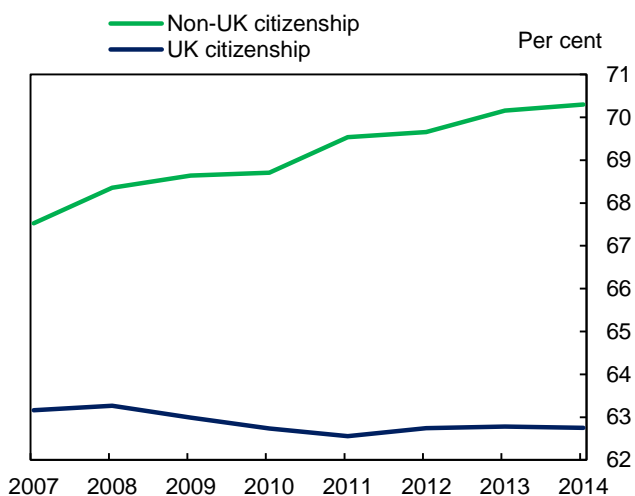
A final linkage between these differences between the UK and US labour markets is the role of migration and the different characteristics of migrants relative to citizens.<sup>14</sup> Figures 17a and 17b show the participation rates of citizens and non-citizens in the UK and US.<sup>15</sup> In both countries, citizens have lower participation rates than migrants. In the US, both groups show a similar, steady decline in participation rates since 2007, as documented in Figure 12b for the full population. In contrast, in the UK the participation rate of UK-citizens has been fairly steady, but that for migrants has increased quite sharply (from less than 68% in 2007 to above 70% in 2014).

<sup>13</sup> See also 'Self-employment: What can we learn from recent developments?' in Bank of England *Quarterly Bulletin*, 2015Q1.

<sup>14</sup> See Nickell and Saleheen (2015) for information on the characteristics of migrants versus native-born in the UK.

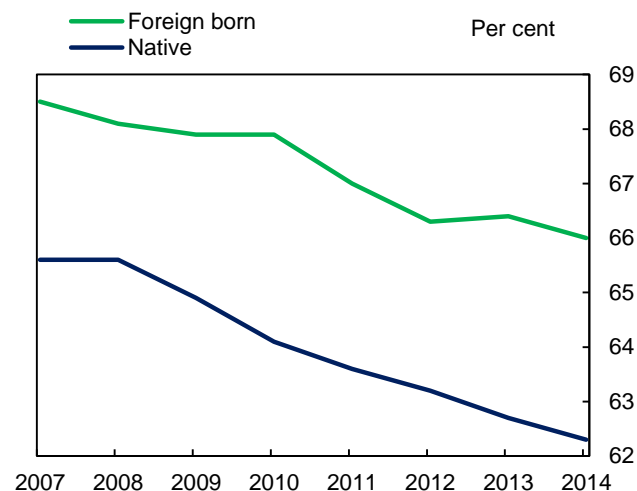
<sup>15</sup> These data refer to UK citizens and non-UK citizens; and to native and foreign-born for the US.

**Figure 17a: UK participation rates, by citizenship**



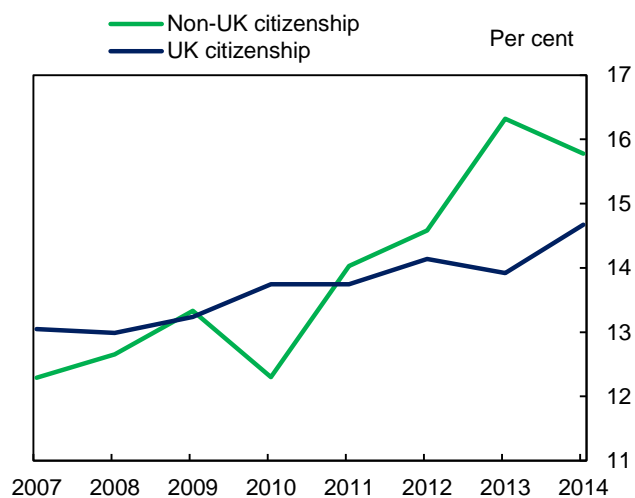
Sources: ONS and Thomson Reuters Datastream.

**Figure 17b: US participation rates, by country of birth**



Source: BLS.

**Figure 17c: UK self-employment rates, by citizenship**



Sources: ONS and Thomson Reuters Datastream.

Figure 17c shows similar trends for the probability of being self-employed in the UK – with a sharper increase in this share for migrants.<sup>16</sup> (Comparable data was not available for the US.) These different trends in labour force participation and self-employment for migrants relative to UK citizens could reflect a number of factors. For example, the higher participation of migrants could reflect the fact that migrants are more likely to be working age<sup>17</sup> or that a large share of migrants into the UK come with a job.<sup>18</sup>

Whatever the reason for these differences, straightforward algebra shows that if the share of migrants relative to the working population increases, the fact that migrants are more likely to participate in the labour force and be self-employed will generate an automatic compositional effect that increases the participation rate and self-employment rate for the population as a whole. Figures 18a and 18b show how these compositional effects linked to migration have affected the participation rates in the UK and US.

<sup>16</sup> However, the share of self-employment of migrants has been relatively volatile over the last 15 years.

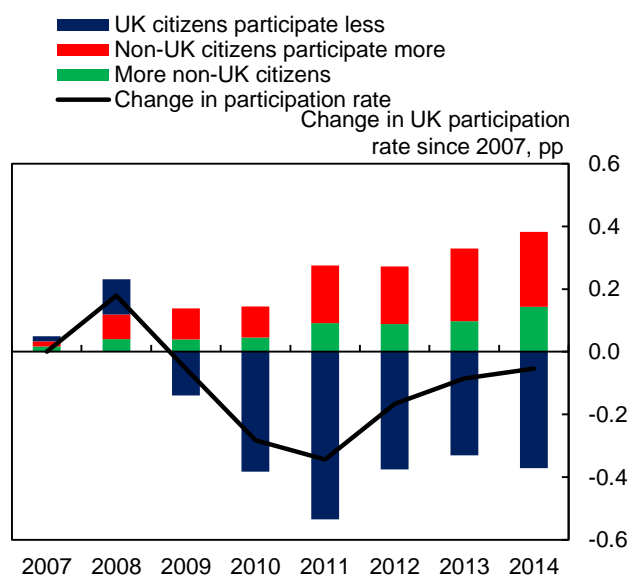
<sup>17</sup> The share of migrants that are aged 25 to 49 years old in the population aged above 16 is 67%, as compared to only 39% for UK citizens. Source: LFS.

<sup>18</sup> The International Passenger Survey suggests that more than 60% of migrants arrive to the UK with a definite job.



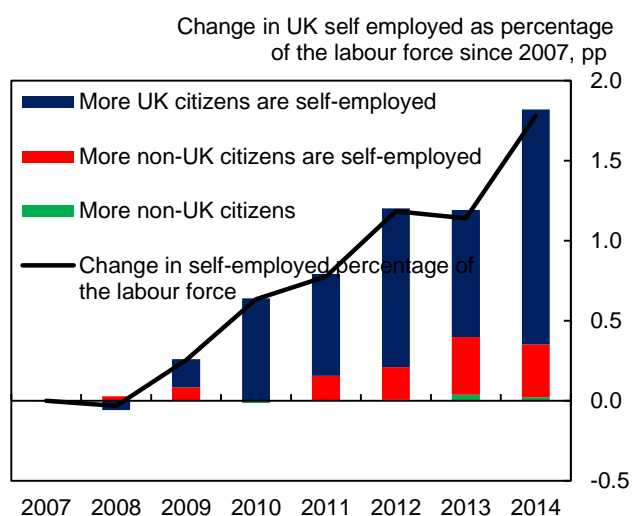
The effects have been minimal in the US, but in the UK the increase in migrants (that are more likely to participate in the workforce, in green) combined with the increased participation rates of migrants over time (in red) has provided a boost to the UK participation rate. In fact, this boost almost entirely balances the decrease in participation by UK citizens (largely from aging). While immigration was a key factor in supporting the much stronger participation rate in the UK labour market, the larger drag from natives' lower participation in the US is also important in explaining the differences across the two countries.

**Figure 18a: UK change in participation rate, by citizenship**



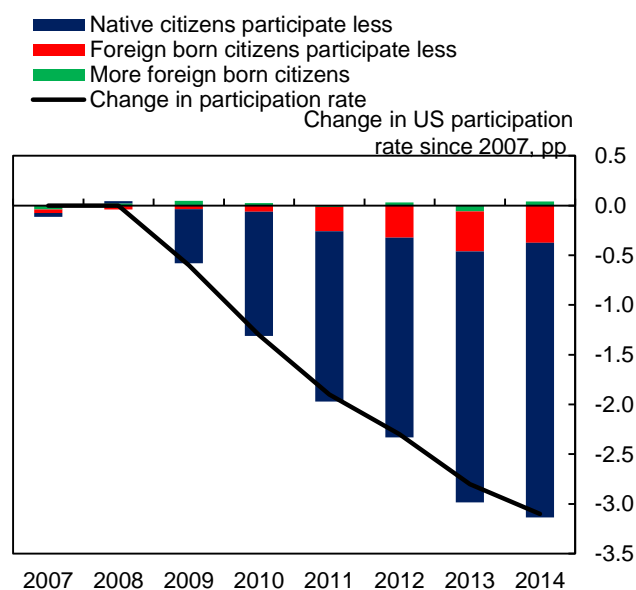
Sources: ONS, Thomson Reuters Datastream and Bank of England calculations.

**Figure 19: UK change in self-employment, by citizenship**



Sources: ONS, Thomson Reuters Datastream and BoE calculations.

**Figure 18b: US change in participation rate, by country of birth**



Sources: BLS, Thomson Reuters Datastream and Bank of England calculations.

Data is not available to do the same type of comparison for the role of migrants in the different self-employment rates in the two countries, but Figure 19 performs the same calculation to show that the increase in self-employment among migrants has also contributed meaningfully to the increase in self-employment documented in the UK (albeit not by as much as for participation).

Where does this leave us? The US and UK labour markets are strikingly similar by most measures. But these two labour markets also show differences in four key trends and characteristics – some of which are related. The UK has experienced a greater increase in labour force participation, self-employment, and migration, but it has also had a shorter period of sustained improvement in the labour market.

### **3. The UK and US: Implications for Wages and Inflation**

By now, I may have buried you in enough statistics and graphs that you have forgotten why we are going through this exercise. Why are we spending so much time looking at these details of the labour market? The main reason is straightforward: labour market developments are critical to predicting where inflation is going in the medium term, and the primary target of the Monetary Policy Committee is to maintain inflation around our 2% target sustainably. Since any adjustments in monetary policy take one to two years to be fully effective, that means we need to set monetary policy based on where we think inflation will be in the next few years – instead of where inflation is today.

Inflation is extremely hard to predict with accuracy.<sup>19</sup> This is true around the world, and especially in the UK where it can move sharply due to unexpected shocks from abroad. This challenge is palpable today; seven-eighths of the deviation of inflation from the 2.0% target is due to movements in the prices of energy, food and other goods. After looking through these types of external and more temporary shocks, a critically important determinant of the more persistent and predictable component in inflation is developments in the labour market. Therefore, much of the task of predicting inflation boils down to a task of understanding the labour market.

If you followed that logic chain, however, you will have noticed that there is still one piece of this chain that is missing. How does our analysis of the UK and US labour markets relate to future wage growth, labour costs and inflation in these countries?

Let's review what we've learned about the US and UK labour markets to see if we can answer this question. Since I've covered so much material, I'll summarize the results with colour coding in Table 2. For each measure, green indicates that slack still exists; orange indicates that the measure is almost at equilibrium and any remaining slack is on track to disappear soon; and red indicates a labour market that is already around equilibrium or tighter. To assess equilibrium, I'll compare current levels to pre-crisis averages or 2007 – a year when the labour market was probably too "tight". This approach is far from perfect – but given the challenges in calculating equilibrium for any of these measures today, this approach will be biased toward finding any slack that might still exist by using a very tight labour market as the baseline.

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<sup>19</sup> The Bank of England's Independent Evaluation Office's 'Evaluating Forecast Performance' from November 2015 shows the MPC and private forecasters' inflation forecast errors since 1997. A recent article in the *Economist* (January 9, 2016) also shows the challenges in forecasting.

The first part of my comments focused on the similarities in the US and UK labour markets. Most of this data suggested that the labour markets in both countries were around equilibrium with little slack. For example, all of the unemployment measures were around or below levels believed to be full employment – except for long-term unemployment which had just reached that level in the UK and still has further to fall in the US. The four different indicators of labour market churn had recovered to around their 2007 levels or were nearing those levels (with vacancies slightly higher and quits somewhat lower, especially in the UK). The Beveridge curve for both countries showed a labour market where companies’ ability to “match” their vacancies to unemployed workers is becoming more difficult. These “quantity” indicators that are similar for both the US and UK suggests minimal slack in either country.

But the second part of my comments focused on four key differences between the US and UK labour markets. Do these differences suggest there is more slack in one country than the other? Here, the different indicators point in different directions. The sharp fall in labour market participation in the US may indicate additional slack in the US labour market if some of the workers that have dropped out of the labour force decide to start working or actively looking for work. Some of these so-called “discouraged workers” have recently entered the labour force, and this trend could continue. It is unlikely that the participation rate in the US will return to pre-crisis levels due to demographic shifts, benefit changes, and a loss of skills by some workers that have been unemployed for an extended period, but there may still be some additional slack in the labour market by this measure.<sup>20</sup> The other differences between the US and UK do not point to any hidden slack in the US labour market.

Moving to the UK, it is less obvious that any of the differences with the US labour market indicate hidden slack. The shorter and less consistent recovery in the UK labour market variables might make UK workers less confident in the recovery and therefore less willing to bargain for higher pay – possibly indicating more slack than in the US. But the other differences are even less straightforward. If the higher share of UK self-employed includes workers who would prefer to work for a company, this could suggest excess slack. But recent data and the continued increase in workers moving to self-employment suggests that many of these workers are choosing this form of employment. If the choice for many of these self-employed was between self-employment or not working, the increase in self-employment translates into increased participation with no first-order effect on labour market slack (as it would have no impact on labour demand otherwise). Similarly, higher migration will increase UK labour supply, but since migrants are more likely to participate in the labour market and work (as shown above), this largely corresponds to increased participation with no first-order effects on labour market slack.<sup>21</sup> Given the uncertainties about how these measures will change in the future, as well as how they impact labour market slack, I will not colour code these blocks in Table 2.

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<sup>20</sup> See Aaronson, Canjer and Fallick (2014), Blanchflower and Levine (2015), Council of Economic Advisers (2015), and Krueger (2015) for a sample of the analysis and debate on how much of this “participation gap” indicates hidden slack in the US.

<sup>21</sup> Dustmann et al (2013) shows that migrants tend to not only increase labour supply, but also demand, moderating any effect on prices. Thanks to Federico Di Pace and Srdan Tatomir at the Bank of England for doing excellent analytic work on this for the UK.

The indicators in Table 2 that are colour-coded send a clear message - the two labour markets are very “hot”; the majority of quantity indicators suggest that the UK and US markets are around equilibrium and very little slack remains. This is the point when wages would normally begin to increase quickly. This is also where things get more complicated.

**Table 2: Tying it All Together: Slack in the UK and US Labour Markets**

	UK	US
<b>Labour Market Quantities: Similarities</b>		
<b>Unemployment</b>		
Overall unemployment rate	Red	Red
Short-term unemployment	Red	Red
Medium-term unemployment	Red	Red
Long-term unemployment	Yellow	Green
Hours worked	Red	Red
<b>Labour market churn</b>		
Separations	Red	Red
Job-to-job flows	Red	Yellow
Quits	Green	Yellow
Vacancies	Red	Red
Beveridge curve	Red	Red
<b>Labour Market Quantities: Differences</b>		
Participation rates	Red	Green
Self-employment	?	?
Migration	?	?
Consistency/length of recovery	Green	Red

Table 3 shows a range of measures of wage inflation in the US and UK. The top two lines show the most commonly cited measures – average weekly earnings for the whole economy and the private sector. These measures of wage growth are still well below historic averages, and well below what would normally occur in labour markets that are otherwise fairly close to equilibrium. This surprisingly low nominal wage growth is not unique to the UK and US and is shared with other developed economies. For example, Figure 20 shows the residuals from estimating a simple wage equation for each of the major developed economies in the G7.<sup>22</sup> The residual from these estimates is currently negative for 6 of the 7 countries, and the average (PPP-weighted) residual of around -0.5% suggests that wage growth in the G7 is 0.5pp lower than would be expected after controlling for the economic environment in each country. This negative residual and corresponding unexplained weakness in wages for most G7 economies has existed for around 2 ½ years.<sup>23</sup>

<sup>22</sup> This model controls for country characteristics, such as the amount of slack in the labour market and productivity growth.

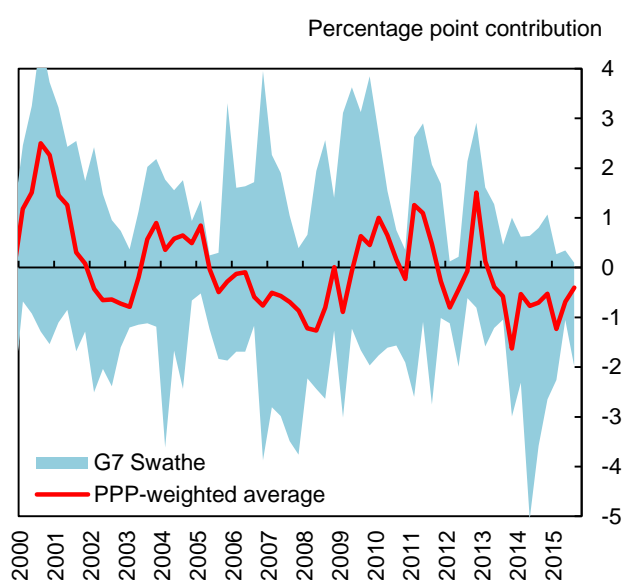
<sup>23</sup> See Gilhooly, Kindberg-Hanlon and Wales (2015).

**Table 3: Different Measures of Wage Inflation in the UK and US**

	UK					US				
	Historic average	Q1 2015	Q2 2015	Q3 2015	Latest	Historic average	Q1 2015	Q2 2015	Q3 2015	Latest
AWE all	4.4	2.3	2.6	3.0	2.0	NA	NA	NA	NA	NA
AWE private sector	4.5	2.9	2.9	3.4	2.2	3.2	2.3	1.7	1.9	1.9
AHE*	4.8	2.1	2.8	3.5	2.6	3.4	1.9	1.9	2.0	2.1
Compensation	4.5	1.4	2.9	2.9	2.9*	3.9	2.5	3.1	3.4	3.4*
Composition adjusted	4.4	3.2	3.0	3.8	3.8*	3.6	2.6	2.0	1.9	1.9*
Median growth rate of earnings	4.5	NA	NA	NA	2.1*	4.0	NA	NA	NA	3.3*
Real wage**	2.9	2.7	3.0	3.4	2.3	1.1	2.1	1.5	1.6	1.6
Real consumption wage	2.9	1.3	2.9	2.9	2.9*	1.8	2.3	2.9	3.1	3.1*
Average	4.1	2.3	2.8	3.3	2.6	3.0	2.3	2.2	2.3	2.5

Sources: BEA, BLS, ONS, Thomson Reuters Datastream and Bank of England calculations. “Latest” refers to the three month average to November. \* indicates latest quarterly or annual data are used. Measures presented are intended to be as comparable as possible across countries. Composition-adjusted refers to the Employment Cost Index in the US. Micro-matched survey refers to the ASHE in the UK and a measure of median wage growth released by the Atlanta Federal Reserve in the US.

**Figure 20: Unexplained component of nominal wage growth in G7 economies**



Sources: OECD, Eurostat, ONS, national sources, Thomson Reuters Datastream and Bank of England calculations. Note: Wage equations estimated over 1995-2015 using lagged variables as follows:  $\Delta W_t = \alpha - \beta(W_{t-1} - deflator - k \cdot prod_{t-1}) - \gamma ugap_t + \delta \Delta prod_t + \xi \Delta W_{t-1} + \varepsilon_t$ .

There are a number of possible reasons why wage growth has been slower than expected given recent developments in labour markets. I’ll focus on the five most relevant for the UK and US. First, the changing composition of the workforce (such as more recent hires being younger, less experienced, or in occupations that pay less) would naturally slow wage growth, as discussed in Broadbent (2015). Bank of England research finds this effect reduced UK wages by 0.8pp in 2015Q3. Second, and related, if there is a fall in average hours worked (which Figure 5 suggests has occurred in the US and the UK relative to historic averages), this would automatically reduce measures of weekly wages (which do not adjust for hours) for those on hourly contracts/paid by the hour.

Third, today's low headline inflation may reduce the pressure on companies to increase wages as workers' real incomes and purchasing power are currently boosted by cheaper energy and food<sup>24</sup>. Fourth, there could be more slack in the labour market than the analysis above suggests (such as due to a lower equilibrium unemployment rate), putting less upward pressure on wages. Finally, changes in economic structure and in the global economy more broadly may have reduced the bargaining power of workers (such as through reduced unionization or greater international competition).

Which of these factors is behind the slow AWE wage growth in the US and UK is critically important to understand how recent trends in the labour market will translate into higher wages and inflation in the future. Some of these hypotheses are difficult to test – but several pieces of evidence suggest that the first three factors have played at least some role. More specifically, other measures of wage growth in Table 3 adjust for these factors: for compositional effects, for hours worked, and for current inflation (real wages). In many of these cases, wage growth has been stronger than implied by the headline figures that do not incorporate any of these factors. For example, composition-adjusted wage growth for the UK was 3.8% in Q3 (the latest available) – which was almost 1pp higher than AWE wage growth at that time. Some of these measures are difficult to calculate and can be volatile<sup>25</sup> – so I do not want to put too much weight on any one measure. And even with these adjustments, the average of these wage measures suggests that wage growth is still below pre-crisis averages in both countries. Wage growth also slowed in the UK at the end of the year by each of the measures for which we have more timely data (although has been more stable in the US). There is still some puzzle as to why wage growth does not have more momentum in both countries with labour markets as tight as shown above. But the comparisons in Table 3 also suggest that some of the headline weakness likely results from factors that are likely to be temporary or have little effect on labour costs.<sup>26</sup>

To figure out exactly what this means for inflation and monetary policy, it is important to look at one more set of indicators. And I promise that this is the last table I'll show you. When evaluating how wages will translate into consistent inflationary pressures, it is important to adjust payments to workers by any changes in worker productivity. If workers are more efficient, they can earn more without increasing cost pressures. Therefore, an important statistic when assessing how labour market developments will be feeding through into inflation is to assess developments in unit wage costs and unit labour costs (which also include other costs such as pensions). Both measures adjust for worker productivity. We don't talk about these measures as often as the statistics come out with more delay than many of the wage indicators, and they are often subject to revision when the highly imperfect productivity data is revised.

Table 4 shows several different measures of unit wage and unit labour costs for both the US and UK.

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<sup>24</sup> See Forbes (2015) and Carney (2016), which both make this argument and report different estimates showing that lagged inflation can significantly affect domestic costs and wage growth.

<sup>25</sup> For example, hourly wage growth is calculated based on the volatile measure of hours per week, and the composition-adjusted wage measures rely on a model of how different worker characteristics affect wages.

<sup>26</sup> More specifically, composition and hourly effects would largely be balanced by reduced productivity growth. See Broadbent (2015) for more detail.

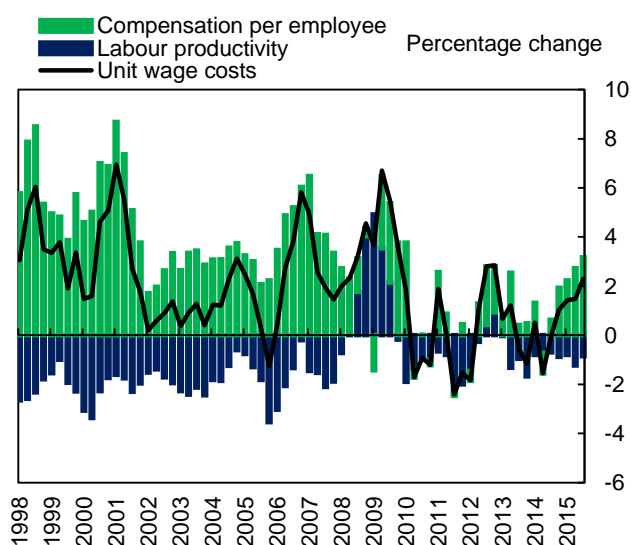
By each of these measures, unit costs have increased from Q1 to Q3 in 2015 (data for Q4 is not yet available). In some cases the increase is quite sharp – with unit labour costs more than doubling (albeit from low levels) for the three different measures for the UK. The reason why these costs have all increased – despite more moderate wage growth – is the productivity slowdown in each country. Figure 21 breaks down unit wage costs into compensation per employee and labour productivity (where a more negative number indicates higher productivity). It shows how productivity growth has been much lower than in the past, thereby boosting unit wage costs in both countries despite only moderate wage growth.

**Table 4: Different Measures of Unit Wage and Labour Costs in the UK and US**

	UK				US			
	Historic average	Q1 2015	Q2 2015	Q3 2015	Historic average	Q1 2015	Q2 2015	Q3 2015
<b>Whole Economy</b>								
ONS ULC (ex. backcast)	3.0	0.7	2.2	1.9	2.2	1.4	1.7	2.4
ONS ULC (inc. backcast)	3.0	0.4	1.8	1.6	NA	NA	NA	NA
UWC (inc. backcast)	2.5	1.4	1.5	2.3	2.1	1.6	2.3	2.8
AWE / productivity	2.5	1.5	1.3	2.1	1.3	1.4	1.1	1.9
<b>Private sector</b>								
ULC (inc. backcast)	2.7	0.0	1.7	1.6	1.6	1.2	2.6	3.0
Average	2.7	0.8	1.7	1.9	1.8	1.4	1.9	2.5

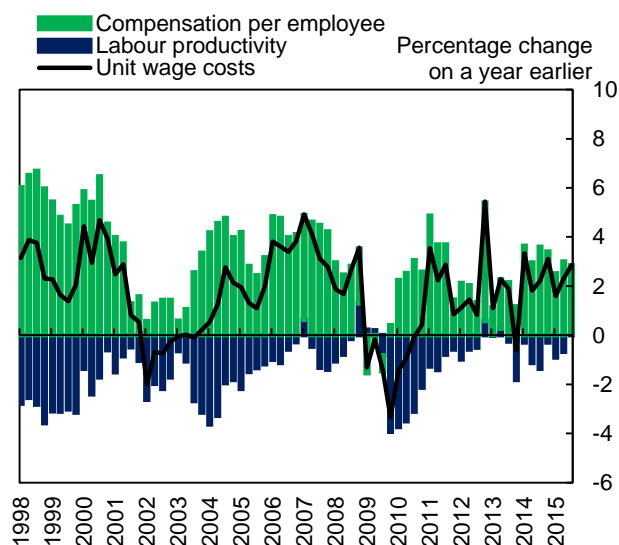
Sources: BEA, BLS, ONS, Thomson Reuters Datastream and Bank of England calculations. None of the US measures use GDP backcasts.

**Figure 21a: Unit wage costs, UK**



Sources: ONS and Bank of England calculations.

**Figure 21b: Unit wage costs, US**



Sources: BEA and Bank of England calculations.

The contrast between the productivity-adjusted measures of labour costs in Table 4, with the unadjusted measures of wage and cost growth in Table 3, highlights several important points. Rather than pick a favorite measure, I'll just focus on the averages for each series. Average wage growth in the UK has been higher than in the US, but has since moderated, while that in the US has been more stable. In contrast, after adjusting for productivity growth, unit labour costs in the US have consistently been higher than in the UK. In fact the average measure of unit labour costs in the US is now above the historic average for this series. But this largely stems from moderate wage growth combined with unusually low productivity growth.

So which measure is the most useful indicator of slack in the economy – and especially for predicting future inflationary pressures? This is where the evidence is even murkier. Although economic models and theory suggest an important link from unemployment/labour market slack → wage growth/unit labour costs → inflation, the links in this chain have grown weaker recently. There is increasing evidence of a “flattening” of the Phillips’ curve relationship between unemployment and wages, basically evidence that levels and changes in unemployment have a weaker effect on wage growth than in the past.<sup>27</sup> There is also some evidence that the relationship between labour costs and price inflation – which was stronger in the 1980’s and 1990’s – has weakened recently. Some analysis suggests that after incorporating the information from labour market quantities, labour costs provide no useful additional information for predicting inflation.<sup>28</sup> Which leads us full-circle back to the first section of this talk – and why it is useful to start any analysis of labour markets by looking at quantity variables such as unemployment and churn (as well as the more volatile wage and cost measures) when attempting to evaluate slack in a labour market and the implications for inflation. This “quantity based” approach of measuring slack and its impact on inflation may also be more relevant during recoveries.<sup>29</sup>

#### **4. Conclusions**

Before I conclude, let me congratulate all of you. You have now been through a lengthy set of economic statistics, tables and figures with excruciating detail on the UK and US labour markets. This session has been closer to a class at MIT than the more lively sessions of Parliament at which you usually spend your days. You may be even more mentally exhausted than if you just read *A Tale of Two Cities*, or even one of Dicken’s longest books – say *David Copperfield* or *Bleak House*.

Nonetheless, this exercise was worthwhile (albeit admitting that I am entirely biased) – and maybe even as rewarding – at least for any economists in the room – as finishing a Dicken’s book? This detailed look at the various characteristics of the UK and US labour markets has highlighted a number of important issues for

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<sup>27</sup> See Blanchard, Cerutti and Summers (2015).

<sup>28</sup> This could result from firms being more willing to adjust margins in order to smooth changes in labour costs. Evidence for the US is provided by Bidder (2015) and supported by internal BoE analysis for the UK.

<sup>29</sup> For example, Michaillat (2012) suggests that indicators of churn and matching frictions have a greater effect on wages during recoveries than during recessions.



monetary policy. Most quantity-based labour market indicators in both the US and UK indicate very little slack remaining in their labour markets – and if anything more slack in the US than the UK. Both economies appear to have very limited ability to continue adding jobs at recent rates without having wages pick up sharply and risk inflation overshooting 2% as the effects of external shocks fade.

But both economies have also been experiencing slower headline wage growth than would be expected given the tightness of their labour markets. The evidence presented here suggests that some of this weakness is due to temporary factors (such as composition effects) and how these headline numbers are calculated (such as not adjusting for hours worked or productivity). Labour costs have been increasing more steadily and are closer to levels consistent with the other signs of little slack in the labour market. But there is still evidence of some unexplained loss of momentum in wage growth (especially in the UK), and labour costs are not yet at the levels consistent with inflation meeting the 2% target sustainably in the UK. On a more positive note, if wages in the UK began to regain the momentum they had early last year, without any corresponding improvement in productivity, they could soon be at levels consistent with meeting the inflation target, especially as the effects of cheaper energy and past currency appreciation fade.

It might be tempting to use the analysis above to suggest that since the US and UK labour markets show very similar and low levels of slack, they should be making the same adjustments to their monetary policy today (without saying which country is making the correct decision). It is true that the summary, colour-coded chart in Table 2 finds similar degrees of slack in these two countries' labour markets. If anything, the quantity measures indicate greater slack in the US labour market, while the labour cost measures suggest less. There are many other important differences in these two economies beyond the scope of this talk, however, which affect how labour market developments in each country will feed through into inflation. For example, the fiscal position in the US should provide a boost to US economic growth and inflation over the next year, while the fiscal position in the UK will provide a headwind. Or another reason why the US may be more likely to tighten monetary policy sooner is that the US Federal Reserve Board does not have the same tools and flexibility to address concerns about overheating in specific sectors of the economy (such as housing) as the Financial Policy Committee does at the Bank of England. On the other hand, although the currencies in both countries have strengthened over the last 3 years, these movements are likely to create a more substantive drag on US than UK inflation going forward, as the dollar has appreciated more sharply and more recently while sterling has recently depreciated.<sup>30</sup> Although developments in the labour market are critical for determining the appropriate stance for monetary policy in the UK and US, other considerations such as these are also important.

So where does this leave us? A close look at the UK and US labour markets suggest that they are stronger and tighter than the most popular headline wage figures suggest. After a severe crisis and prolonged recovery, they have largely returned to normality. A key theme in the *Tale of Two Cities* is resurrection, and

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<sup>30</sup> A given currency movement would normally have a larger impact on the UK economy as it is more open and has a higher degree of exchange rate pass-through.

the labour markets in these two countries have come back to life. The analysis above suggests that momentum in wages and unit labour cost growth should accelerate in both economies.

In the UK, however, wages and labour costs have not yet gained enough momentum to be consistent with inflation reaching our 2% target. Tightening monetary policy today would require faith that our forecasting models will work and the tightness in labour market quantities and measures of labour market churn will soon translate into stronger wages and then higher inflation. But, unfortunately, these models have not been working very well recently. Therefore, although I still have faith, I would like to see a bit more upward movement in these wage and cost measures to build confidence that the normal chain of tight labour markets feeding through into higher wages is still intact. In other words: trust, but verify. The most recent falls in oil prices, by delaying the recovery in inflation, provide the luxury of a bit more time to build this confidence. Once this upward momentum in wages and unit costs builds – as I expect it will – then it will be time for the UK to follow the example of its fellow “city” and begin the slow and gradual process of tightening monetary policy. The relatively smooth experience of “lift-off” in the US suggests that, at least in this *Tale of Two Cities*, there will not be a revolution.

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