



Resolution Foundation

REPORT

Irregular payments

Assessing the breadth and depth of month to month earnings volatility

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Executive Summary

When researchers and policy makers consider the living standards of families, they commonly focus on the average level of earnings or income – and how this average for the population as a whole (and groups within it) changes from year to year. This approach of course makes sense, but misses an important factor in the relationship between work and people’s standard of living: the extent to which individuals’ pay fluctuates over time, and particularly in the short term – from month to month, or even week to week. A consideration of such individual fluctuations is important to our understanding in a range of areas, from the security of employment, to how family finances are managed, to the extent to which the in-work benefit system is fit for purpose.

This ground-breaking piece of research addresses the question of earnings volatility, unearthing some striking findings about the lived experience of work – and the pay we receive for it – in the UK today. Up until now, our understanding of volatility in earnings over time has been limited to changes in pay from year to year. Reviewing and updating this evidence, we find that annual earnings volatility has been broadly flat since the 1990s. But changes in annual earnings from one year to the next can only tell us so much about the experience of fluctuating pay.

This report therefore makes use of anonymised transaction data from over seven million Lloyds Banking Group (LBG) accounts in order to demonstrate the breadth and depth of changes in pay from month to month. This is a unique piece of research both because of its detailed focus on monthly pay changes and because it makes use of bank account transaction data such that we are able to know – rather than estimate using representative surveys – how take-home pay varies from month to month. However, this use of ‘real’ data does have some drawbacks; for example we’re unable to isolate each individual’s pay packets in joint accounts, and so our focus is just on transactions flowing into individual bank accounts.

Monthly volatility is a common feature of work in the UK, and it is bigger than we might have imagined

Those continuously employed in full-time work do clearly have better average labour market outcomes than those working shorter and more variable hours. In this regard, it is right that a growing amount of attention has been paid to those in less secure forms of employment over recent years. However, our research reveals that fluctuations in monthly pay are by no means confined to just this corner of the labour market.

In fact, we find that pay fluctuations are the norm for the majority of employees. **Only 9 per cent of employees who remained with the same employer throughout 2016-17 had no months in which take-home pay changed by a notable amount (greater than five per cent, either up or down).**

Rather, we find that **the typical employee who remained with the same employer throughout 2016-17 (someone we term as having a 'steady job') had five months during the year in which monthly pay changed by more than five per cent.**

Almost 20 per cent of those in the steady job group had notable pay changes that were only in an upwards direction, but **most employees with a steady job (73 per cent) had volatile pay, which we define as having notable changes in pay from month to month that are down to more than just pay rises, promotions or bonuses** (i.e. at least one notable downward change in monthly pay over the course of the year). Many of this group will have multiple changes in varying directions. In fact, **40 per cent of those with a steady job had notable pay changes that weren't exclusively positive in six or more months of the year.**

We find that for these employees remaining with the same employer throughout 2016-17, **the average notable monthly increase in pay was £530 and the average notable monthly decrease in pay was -£290.** These changes are substantial. The average monthly decrease is roughly similar to the average amount UK households spend on groceries each month, which was £250 in 2016-17.

There are, though, many months in the year in which pay changes by a small or non-existent amount. Nonetheless, the average absolute monthly change

in pay across all months, including those with zero or very small pay changes, was £180 (10 per cent) in 2016-17.

Monthly pay changes are more common for those paid the least, and the low-paid are more likely to experience monthly falls in pay than those on higher earnings

There is a U-shape to our results when we look across the earnings distribution as a whole. The frequency and size (in percentage terms at least) of pay changes is highest for low earners, but high earners also experience pay changes more frequently and in larger magnitude than those on middle earnings.

Focusing on the gap between low and middle earners, we find that the difference in frequency of notable pay changes (those larger than five per cent) is most pronounced in the case of downward changes in pay, which occur in an average of 2.3 months a year for those with a steady job earning around £10,000 compared to an average of 1.8 months a year for those earning above £15,000.

We find that **over 80 per cent of lower earners (those with annual take-home pay of around £10,000 a year) with a steady job have volatile pay, compared to two-thirds of those on higher earnings (with take-home pay of around £35,000 a year)**. Looked at a different way, a quarter of those on higher earnings and in a steady job enjoyed only positive notable pay changes during 2016-17, compared to just one-in-ten of those on lower pay.

Given this, it's no surprise that **the direction of pay changes has a large positive skew for those on higher earnings in a steady job: on average their notable positive pay changes are significantly larger than their notable negative ones (a £990 average positive change compared to a £520 average fall)**. In comparison, **the size of notable upwards and downwards changes is much more similar for those on lower earnings in a steady job (£220 compared to £180)**.

This average £180 fall for low earners shouldn't be overlooked; it is not a trivial amount. Just as we might be worried about some families' ability to replace a household appliance unexpectedly (e.g. replacing a washing machine, which would cost around £180 at a minimum) so should we be

concerned about how they might be able to get by with an unexpected drop in pay of this amount.

Taking account of all monthly pay changes – up and down and including those smaller than five per cent – over the year we find **that the absolute average monthly pay change for those with a steady job is highest for those on the very lowest earnings (in excess of 15 per cent), and lowest for those with annual take-home pay close to the median amount of £17,500 (at 8 per cent)**. Those earning close to £45,000 had average monthly pay changes of almost 12 per cent.

Despite being closer in magnitude, monthly pay changes look to represent more of a detriment to lower earners than higher earners. This is in part because the mix of pay changes experienced by the low paid is clearly less welcome than that experienced by higher earners: volatile pay is more common for the lowest earners, and their pay changes are more likely to be relatively large and negative.

But it's also right to focus on the lowest earners because pay fluctuations are likely to be more difficult to manage when earnings are low, with 40 per cent of those on low-to-middle incomes being unable to save £10 or more a month. A sudden downward change isn't easy to absorb when savings are this minimal.

This sentiment came through in our qualitative research with those who experience high levels of pay volatility. **In our focus groups, low earners with volatile pay spoke of how the challenges of living with low pay are exacerbated by pay volatility, leading to increased anxiety and stress as well as more debt, and fewer opportunities to save for the future.** The uncertainty associated with downward pay changes outside of individuals' control (e.g. not being given shifts or having to work fewer hours) was the aspect of living with volatile pay that individuals were keenest to avoid. Higher earning participants told of how their experience of volatile pay was more positive – in these instances monthly pay changes were often both expected and upwards.

The evidence also suggests that low-paid men have higher monthly pay changes than women

On average, men and women had similar levels of monthly pay changes. However, **low-paid men have demonstrably higher average absolute monthly pay changes than low-paid women.** This finding is confirmed by analysis of annual changes in pay from the Labour Force Survey (LFS) and the UK Households Longitudinal Study (UKHLS).

In the monthly data, **average absolute pay changes are over one-third higher for men than women among those with annual take-home pay between £5,000 and £10,000 a year,** this gap is smaller at higher pay bands and has all but disappeared by £15,000.

There's no one factor that explains this difference in its entirety but our analysis suggests that the different sectors that low-paid men and women work in has some effect. For example, half of all women with annual gross earnings between £5,000 and £15,000 (and who had been with the same employer throughout 2016-17) work in the public sector, compared to just 20 per cent of men paid within the same range. This is important as our analysis of annual pay changes for those earning between £5,000 and £15,000 reveals that on average they are lower in the public sector than in the private sector.

It's clear that there is still a long way to go before low-paid work is more evenly shared between the genders, for example 2.9 million women are in low pay compared to 1.9 million men. But these findings bring home the importance of focusing not only on the extent of low pay among different groups, but also on the differing experience of low pay between these groups.

Young people have higher monthly pay changes than their older counterparts

Among those who remained with the same employer all year, average absolute pay changes are highest for those aged 18 (at 15 per cent) and lowest for those aged 53 (at 9 per cent). In part, this is because young people are more likely to enjoy large pay rises as they progress rapidly at the early stages of their careers. 18 year olds who remained with the same employer all year have an average of four months a year in which pay increases by more than five per cent, compared to closer to two months a year of positive increases for those in their late 50s.

But young people are also more likely to experience downward pay changes – and by implication have a higher incidence of volatile pay than older employees (where volatile pay is defined, as above, as having at least one month in the year in which pay changes by more than a notable amount, and where pay changes aren't exclusively upwards in direction). **Over 80 per cent of those aged 22 and under had volatile pay in 2016-17, compared to under 70 per cent of those aged 40 and over.**

In large part, these differences across the age range are a product of differing earnings levels. For example, 18-24 year olds comprise around one-in-five employees with annual take-home pay between £5,000 and £15,000 – and only six per cent of those with annual take-home pay of around £25,000. Though age does matter – younger employees have larger pay changes than older employees at each point in the earnings distribution.

The prevalence of short-term pay falls is an argument for a more responsive system of in-work support

Our findings highlight the importance of a safety net that is responsive to fluctuations in earnings. A 21st century social security system should be able to respond to monthly changes in pay, in particular a responsive system should mitigate the impact of short-term falls in pay with timely and proportionate increases in benefit awards.

This happens with Universal Credit (UC); the system is designed to be responsive to changes in pay on a monthly basis. The taper rate, currently set at 0.63, means that every £1 change in earnings leads to a 37p change in income. This acts as a moderating force, for example if someone's take-home pay falls by £100 from one month to the next then their personal income (pay plus UC) will only fall by £37.

The mechanics of the taper rate coupled with the use of monthly assessment periods, after which UC is paid in line with the amount of pay just received, do hold out the prospect of a system that is better able to mitigate the impact of short-term downwards changes in pay. Further still, UC's responsiveness removes the more significant annual changes in benefit award – coupled with over-payments (and subsequent clawing back of such payments) – that came to characterise the tax credit system.

But there is a clear trade-off between cushioning the impact of pay falls and incentivising pay increases

There is a trade-off, however, between having a benefit system that significantly moderates changes in pay and one that provides strong work incentives. Although lower than the highest taper rates in the tax credit system (in which benefits were sometimes withdrawn at rates close to 100 per cent), the 0.63 taper is still relatively high. This is good for cushioning the impact of pay falls, but it does mean that questions still remain around UC's ability to incentivise pay rises and progression in work.

In particular, there is a broader policy question around the way in which the responsive smoothing mechanism of UC coupled with monthly assessment periods could start to put people off taking short-term relatively small boosts to pay (like overtime in the run up to Christmas). This is because UC claimants will instantly see a fall in their UC just after making the effort to boost their pay.

In comparison, in the tax credit system any associated fall in awards doesn't take place until the end of the tax year, and might not even take place if the total pay change over the year is lower than the earnings disregard.

UC's design clearly has benefits, not least the simplicity of a steady taper rate and its ability to cushion pay falls. But it's not at all clear that the system's design is well suited to encouraging individuals to take up additional hours of work in the short-term, something which it would be undoubtedly good to encourage. It's for this reason that we believe that **the Department for Work and Pensions (DWP) needs to closely monitor the impact of UC with regards to its effect on claimants' propensity to take short-term boosts in pay.** DWP should consider options for reform if the evidence is clear that UC's responsiveness is having the unintended consequence of encouraging individuals to hold back from taking on additional hours.

The design of assessment periods undermines some of the advantages of Universal Credit's responsiveness to fluctuations

Beyond the trade-off between incentivising pay increases and cushioning pay falls, there are also specific issues relating to the design of UC's assessment periods (the monthly window over which the system collects pay data in order to determine UC awards) that act to somewhat undermine the advantages of a more responsive system.

The first design issue is that UC assessment periods are monthly, whereas many UC claimants are paid more frequently than twelve times a year. This introduces volatility in personal incomes even in circumstances in which pay remains unchanged between each pay packet. **Just over 40 per cent of the UC claimants in our sample were paid more frequently than monthly (weekly, fortnightly or four-weekly).** Although this group will not be representative of the broader range of families that will eventually be on UC, this finding is indicative of the fact that it will always be the case that a substantial minority of those on UC will be paid more often than monthly.

Any person with such a pay pattern will experience months in which they are paid more often than normal. For example, individuals paid on a fortnightly basis will have two months in the year in which they receive three sets of wages. These months (with higher than normal number of pay packets) can also occur as a result of bank holidays or other factors that cause pay dates to shift around relative to assessment periods. When this takes place the amount of UC awarded will fall accordingly. As such, personal incomes will be lower than claimants are used to, something which may be particularly difficult for those on lower incomes to manage.

In some circumstances – most obviously when someone paid every four weeks receives two payments within a UC assessment period – the amount of UC awarded might even fall to zero. If this happens individuals will have to reapply for UC. Although this is relatively easy to do, it does add an unnecessary complication to the system and could result in individuals missing out on support if they fail to claim on time.

The second design problem is linked to the way in which assessment periods for UC start and finish on arbitrary dates. They are linked to the

date on which an individual first makes a UC claim rather than the dates on which pay is received. For some individuals this will act to accentuate rather than moderate the impact of fluctuations in pay on household incomes. This is due to the potential for a sizeable lag between pay receipt and UC receipt.

We analyse monthly changes in pay and personal income (pay and UC combined) for those in the LBG sample in receipt of UC during 2017-18, for whom we can be confident that the only reason for a change in their UC is a change in their pay. We find that monthly personal income changes are lower than changes in pay, showing that UC does have a moderating effect on the size of pay changes. But, we also apply a hypothetical scenario to our sample in which the total UC award over the year is spread evenly across all months. Surprisingly, the average monthly change in personal income is lower in this hypothetical system (in which benefits don't respond to changing pay) than in the actual UC system as analysed using LBG data.

This implies that the gains from a more responsive system (in terms of the moderating force that UC has on pay changes) are somewhat undermined by the drawbacks of assessment periods running between dates that are in no way linked to the dates on which pay is received.

The case for changes to Universal Credit to reduce volatility is strong

The practicalities of implementing changes to the UC system as it is being rolled out are clearly significant. But we take the view that that in order for UC to fully translate the gains from a more responsively designed into the lived experience of receiving UC, there are certain reforms that DWP should consider seriously.

First, we call for **the DWP to investigate the impact of more-frequent-than-monthly pay packets on volatility and living standards.** Monthly assessment periods are a core part of UC's design and reducing their length may only act to increase volatility, making planning and budgeting even more challenging for those with volatile pay – it would also be a significant technical challenge. Second, it makes little sense not to align assessment periods with pay periods where possible – reducing the lags between pay receipt and UC award payment. It is for this reason that we propose that the DWP should **grant individuals already in work the flexibility to move their**

assessment period in order that it better reflects the dates on which they are paid.

The ideal time for designing this flexibility into the system has undoubtedly long passed and, given the current pace of roll out, it wouldn't be wise to try and implement such a reform immediately. That said, if roll-out were to be paused the implementation of this change to assessment periods should be considered.

Of course, the implications of our findings extend beyond the design of the in-work benefit system, and we also suggest that employers and government consider how experiences of fluctuating hours and uncertainty around working patterns can be minimised wherever feasible. Most obviously, and as we have already called for, it is clear that those on a zero hours contract but who are in practice working regular hours should have the right to a regular contract. Similarly, we believe there should be a minimum forward notice for changes to shift patterns. More broadly, this novel research – the first to consider month to month pay fluctuations in the UK – must serve as a prompt for policy makers, researchers and businesses to consider short-term pay volatility within debates about the living standards of UK families in the years ahead.

Section 1: Introduction

Not many people budget over the year, rather most employees plan their finances from month to month – often in line with their pay dates. Yet, until now, there has been very little in the way of analysis of the extent of individual pay changes between months. The existing literature, which we replicate in the following section, has instead analysed annual pay changes using representative survey data.

This report uses Lloyds Banking Group (LBG) customer account data in order to provide an original analysis of month to month changes in pay, how large they are, and how they vary across the population.

Existing research has focused on annual pay changes, but monthly changes in pay are likely to be more important

To date, the literature on individual changes in pay in the UK has been centred on movements in pay between one year and the next. Academic researchers have made use of the UK Household Longitudinal Study (UKHLS), also known as Understanding Society, and its predecessor study the British Household Panel Study (BHPS). These panel surveys are the primary source for analysis of changes in individual, or household, experiences over time. However, they only capture pay once a year and so are unable to capture any changes in pay between months, or even quarters.^[1]

This existing research helps provide an understanding of the large variation in individual pay changes over each year. But although comparisons of pay from one year to the next are indicative of what may be happening over shorter time periods – there has not (until now) been a substantial evidence base on monthly changes in pay. This report not only provides quantitative research on monthly pay changes using LBG data, we also complement this analysis with findings from annual survey data as well as qualitative research into the experience of living with volatile pay, particularly for those on lower earnings.

Providing this evidence base is an important task, particularly in the context of understanding the stresses and strains placed on those on low earnings. When any pay packet is notably lower than normal the ability of individuals to stretch the amount they just received to the next pay packet, and to pay any bills they might need to, will be affected. While those with higher earnings are more likely to have savings to help overcome these challenges, those on low-to-middle incomes – 40 per cent of whom can't afford to save £10 or more a month – the experience of pay changes over shorter time horizons is a key living standards concern.^[2]

[1] The short-panel design of the Labour Force Survey suffers from the same drawback, because individuals are only asked earnings questions in their first and fifth (last) quarters in the panel.

[2] A Corlett et al., [The Living Standards Audit 2018](#), Resolution Foundation, July 2018

The structure of this report

The following sections of this report will place our novel dataset in the context of existing findings on annual pay volatility using survey data, and then focus primarily on the extent of monthly changes in pay. The report is structured as follows:

- » Section 2: Annual pay changes
- » Section 3: Monthly pay changes
- » Section 4: Pay changes across the earnings distribution
- » Section 5: Monthly pay changes by gender, age and region
- » Section 6: Implications for government and employers
- » Section 7: Conclusion

Section 2: Annual pay changes

Before turning to the findings from our analysis of monthly changes in pay using bank account data, we first place our work – and the novel dataset from which it is sourced – in the context of existing literature.

Previous research into volatility of earnings has been carried out on an annual basis for the years up to 2008, and separately for the years since 2010. Here we extend this work to 2016-17, and look across three different data sources in order to understand what has happened to volatility over the time period as a whole.

Overall, the evidence points to relatively little change in annual earnings volatility over this period. The level of annual pay changes identified in the survey data is similar to that found using the customer account data that forms the backbone of the later sections of this report. This suggests that the monthly changes we explore in subsequent sections are by no means just a recent phenomenon, but have been an under-analysed part of our labour market for many years.

Earnings volatility has been broadly flat, even throughout the crisis years

There are a range of measures of annual volatility used in already published work on this topic, and in this section we focus on the two key measures used by Cappellari and Jenkins in their paper ‘Earnings and labour market volatility in Britain’.^[3] In line with previous research, we use the BHPS and UKHLS for this analysis. Together these do not provide a continuous time series for annual volatility due to the break in the series between the two surveys in 2009. Because of this we also construct the same measures by making use of the five-quarter longitudinal Labour Force Survey (LFS).

The first measure we look at is the standard deviation of the percentage changes in real earnings from year to year for all those in receipt of pay in each year.^[4] This measure provides a sense of the dispersion of the changes from year to year. A higher standard deviation means that the distribution of changes has ‘fatter tails’, implying that there are relatively more people with larger changes in earnings.

We calculate statistics for those employees aged 18 to 59 and not in full-time education with gross pay adjusted using the Consumer Price Index including owner occupiers’ housing costs (CPIH).^[5] The trend in this first measure across the three datasets is shown in Figure 1. The level of dispersion is relatively consistent across the three data sources, at around 30 per cent, and has changed little over the time period as a whole.^[6]

[3] L Cappellari & S Jenkins, *Earnings and labour market volatility in Britain*, ISER, July 2013

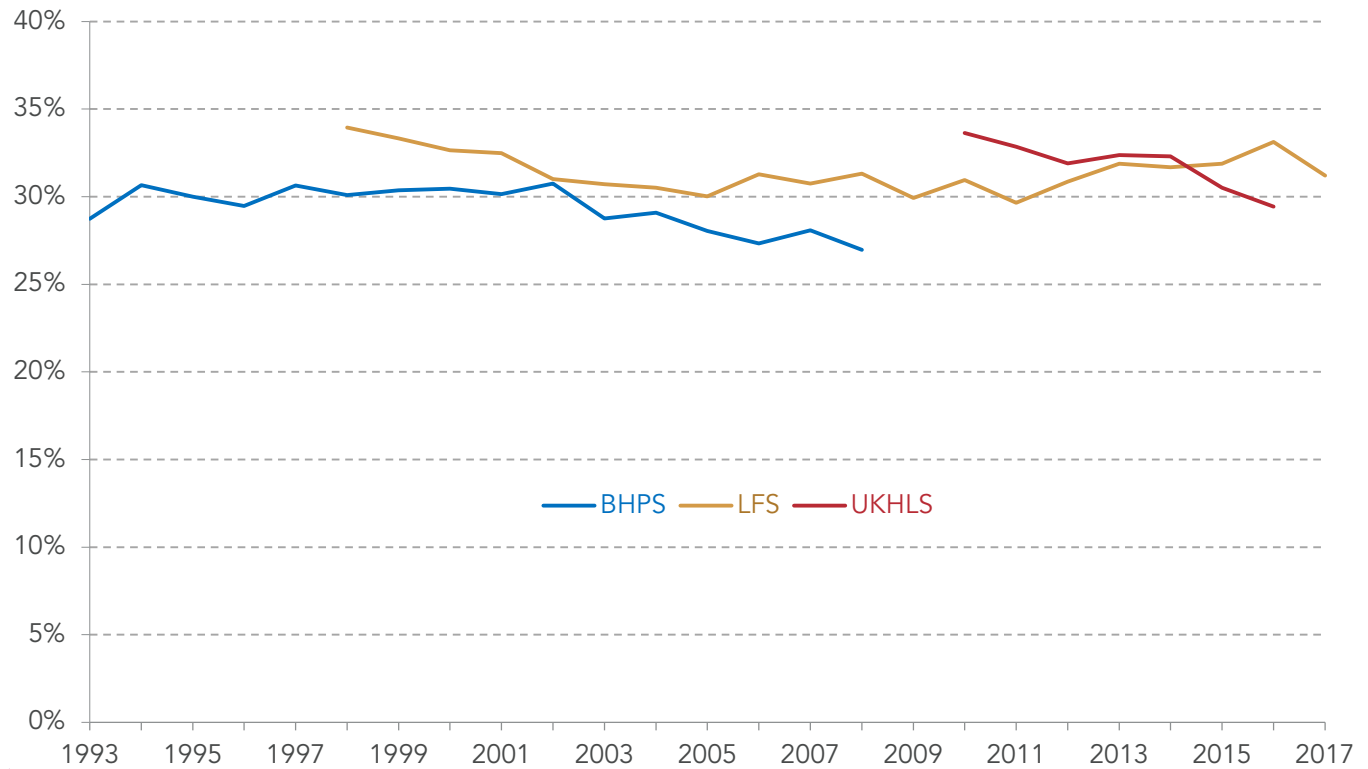
[4] Here, and throughout this report, we use arc percentage changes – see Box 1 in Section 3 for detail. We calculate changes in real pay when calculating volatility on an annual basis, and changes in nominal pay when calculating changes from month to month.

[5] Only in Figure 1 and Figure 2 do we use gross pay, in other charts we use net or take-home pay.

[6] The finding from the UKHLS is consistent with the findings in: S Avram et al., *Household Income Volatility in the UK, 2009-2016*, Preliminary findings prepared for the IARIW conference, 2018

Figure 1: The dispersion of annual pay changes has remained broadly flat since the early 1990s

Standard deviation of arc percentage changes in real (CPIH-adjusted) pay for those in work in consecutive years, various data sources: GB, 1993-2017



constructed pre-2008 using data on the RPI rental series and the RPI Council tax series.

Source: ISER, British Household Panel Survey (1993-2008); ONS, Labour Force Survey (1998-2017); ISER, UK Household Longitudinal Study (2010-16)

The second measure used by Cappellari and Jenkins is the proportion of percentage changes in pay that have an absolute value greater than 20 per cent.^[7] Rather than providing a summary of the whole distribution of changes in pay (as with the first measure), this simply tells us how many people experience very large changes in pay from year to year.

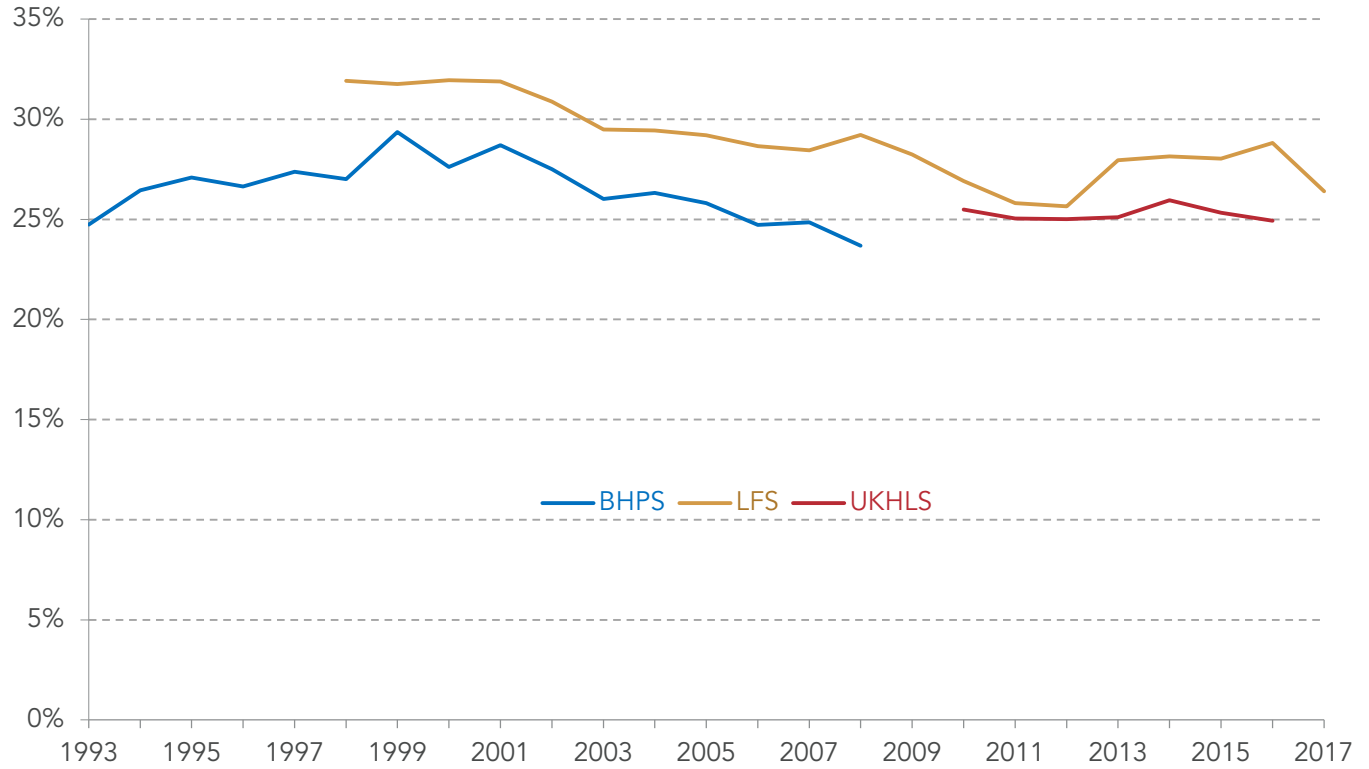
The proportion of employees with large changes in real pay, with an absolute value greater than 20 per cent, rose slightly during the 1990s, declined in the 2000s and has remained broadly flat in the current decade. In the BHPS the share of those with large changes in real pay declined from 30 per cent in 1999 to 23 per cent 2008. The findings from the LFS show a similar fall over a slightly longer time period, with a decline in the proportion of employees with large annual changes in real pay from 32 per cent in 2000 to 26 per cent in 2011. These trends are depicted in Figure 2.

[7] Again, as per the remainder of this report, we use arc percentage changes rather than simple percentage changes here – see Box 1 in Section 3 for detail.

Figure 2: The share of employees with large annual changes in pay declined during the 2000s

Share of employees with absolute annual change in real (CPIH-adjusted) pay greater than 20 per cent, various data sources: GB, 1993-2017

Notes: Years are the later year in each pair of years, for example results for 2017 show the changes between 2016 and 2017. CPIH time series created from published data (2005 onwards) and constructed pre-2005 using data on the RPI rental series and the RPI Council Tax series



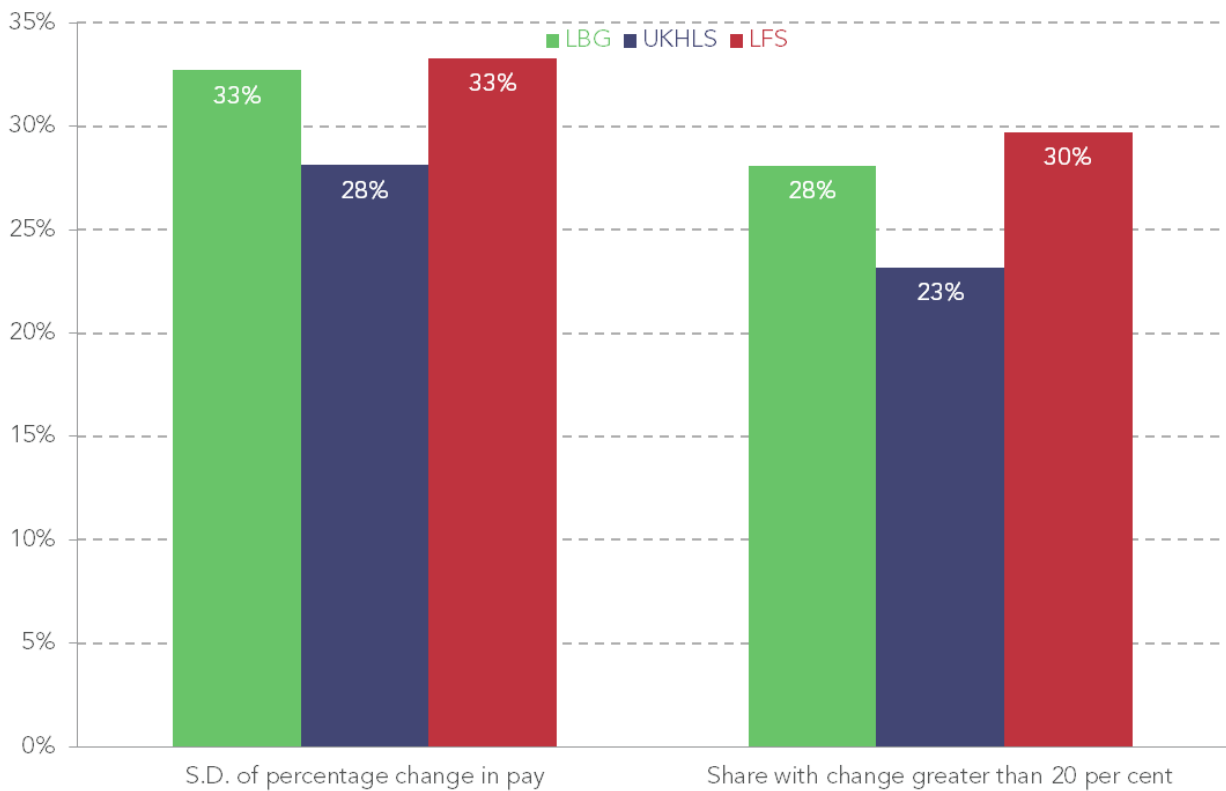
[8] One example of such analysis based on US bank account data is: D Farrell & F Greig, [Paychecks, Paydays, and the Online Platform Economy: Big Data on Income Volatility](#), JPMorgan Chase Institute, February 2016

For the most part, analyses of UK labour market trends are carried out using survey data which can suffer from inaccurate reporting or non-responses to individual questions – issues that bank account transaction data cannot (by its very nature) fall foul of. However, transaction data isn't without its own problems, for example if customers have multiple accounts, and pay or bonuses aren't all paid into the same account, we may miss volatility that would have been identified by the survey data.

Given the various ways in which the datasets differ, it is reassuring that the level of annual volatility recorded from analysis of customer account data is of a similar level to that recorded by surveys. In Figure 3 we compare the level of annual volatility in 2015-16 from the LBG customer account data with the level recorded in the UKHLS and LFS.^[9] The figures below are slightly different from those presented in the above charts because we look here at net pay and include Northern Ireland in our analysis, in line with the LBG data sample.^[10] We are unable to compare over a longer time horizon due to the LBG data sample only having been constructed for years since 2013.

Figure 3: Measures of annual pay change are consistent across surveys and customer account data

Annual measures of volatility consistent with existing literature, various sources: 2015-16



Notes: Pay is inflation adjusted using the CPIH. LBG data is take-home pay. UKHLS and LFS data is net pay.
Source: Lloyds Banking Group; ONS, Labour Force Survey; ISER, UK Household Longitudinal Study

[9] We look at 2015-16 in this figure in order to be able to draw comparisons that include the less timely UKHLS.

[10] The data in earlier figures doesn't include Northern Ireland to avoid a break in the series when it is introduced to the UKHLS in 2001.

Overall, it's fair to say that variations in pay from year to year are substantial. Take the second measure above: depending on the data source we find that between 23 per cent and 28 per cent of employees experience changes in real pay from one year to the next that are greater (in absolute terms) than 20 per cent.

Behind the headline trends in average earnings, which – for example – increased at a rate of two per cent between 2015 and 2016, this analysis shows that there lies a substantial amount of volatility at the individual level. The question the remainder of this report explores is to what extent, and for whom, is this annual volatility reflected in pay changes from month to month?

Section 3: Monthly pay changes

The experience of monthly changes in take-home pay is widespread. On average, employees had four months during 2016-17 in which net monthly pay changed by more than five per cent.

Notable upwards changes in monthly pay are more common than notable downwards changes. But even so volatile pay – where an individual has pay changes owing to more than just bonuses or pay rises – is a feature of working life for three-quarters of those who remain with the same employer over the course of a year. Strikingly, four-in-ten of this “steady job” group had volatile pay in six or more months of the year in 2016-17.

Looking at all pay changes (including those that are smaller than five per cent) across all employees, we find that the average absolute monthly pay change is 15 per cent (£220). The average size of notable (larger than five per cent) downward changes in pay is -26 per cent (-£320), and notable upward changes in monthly pay average 27 per cent (£550). Narrowing our focus to those who remained with the same employer over the course of 2016-17, the average absolute monthly pay change is still substantial, standing at 10 per cent (£180).

Changes in net pay from month to month are more common than may be assumed

Changes in earnings from one year to the next can only tell us so much about the lived experience of work in the UK today. A consideration of shorter-term fluctuations is important for our understanding in a range of areas, from the security of employment to how family finances are managed. As such, here we make use of transaction data from over seven million LBG accounts that received at least one pay packet during 2016-17, in order to demonstrate the incidence and extent of *nominal* changes in take-home pay from month to month.^[11]

We look here at the actual take-home pay received into individually held back accounts.^[12] This is different from most other analysis of earnings, which tend to focus on gross pay. Take-home pay is lower than gross pay, largely because of tax but also because of other deductions – for example employee pension contributions, student loan repayment and payroll giving. Before looking in detail at the size of pay changes, it's worth getting a sense of how often they occur. Rather than include every change right down to just a 1p difference in take-home pay between one month and the next, we focus here on the number of months in which changes in pay larger than plus or minus five per cent take place. We call these notable pay changes.

[11] See Box 1 for details on our focus on nominal rather than real pay changes in this and subsequent sections.

[12] Joint accounts are excluded from this analysis, it is simply not possible to allocate the pay received into joint accounts to each individual holder.

Differences in job patterns over the course of the year are an important driver of the frequency of notable pay changes. Those who switch jobs, for example, are more likely to have a notable change in pay than those who stay in the same job all year. For this reason, we split the sample of employees from the Lloyds customer account data into three groups, in order to see how labour market transitions affect the frequency of pay changes.^[13] These groups are defined as follows:

- » **Steady job:** Those employees who were in work all year with the same employer.^[14] These employees might have changed job roles within the same organisation during the year, but we know that they didn't switch employer. 61 per cent of employees who received any pay during 2016-17 are in this group.
- » **Steady employment:** Employees who received pay into their bank account in 11 or 12 months of the year but who were not with the same employer all year. As well as those who changed employers, this group unavoidably includes a small minority of employees who entered or left employment at the very start or end of the financial year. They account for 14 per cent of all employees who received at least one pay packet in 2016-17.
- » **Sporadic employment:** Employees who received pay into their bank account for 10 or fewer months of the year. This will include those who cycle in and out of work as well as most job entrants (such as young people starting their first job after education or returning to work after a career break or period of sickness or parental leave) and leavers (including retirees). This final group accounts for the remaining 25 per cent of the employees who received any wages into their bank account in 2016-17.

In Figure 4 we look in detail at the average number of months during 2016-17 in which different pay changes occurred, overall and within each of these groups.

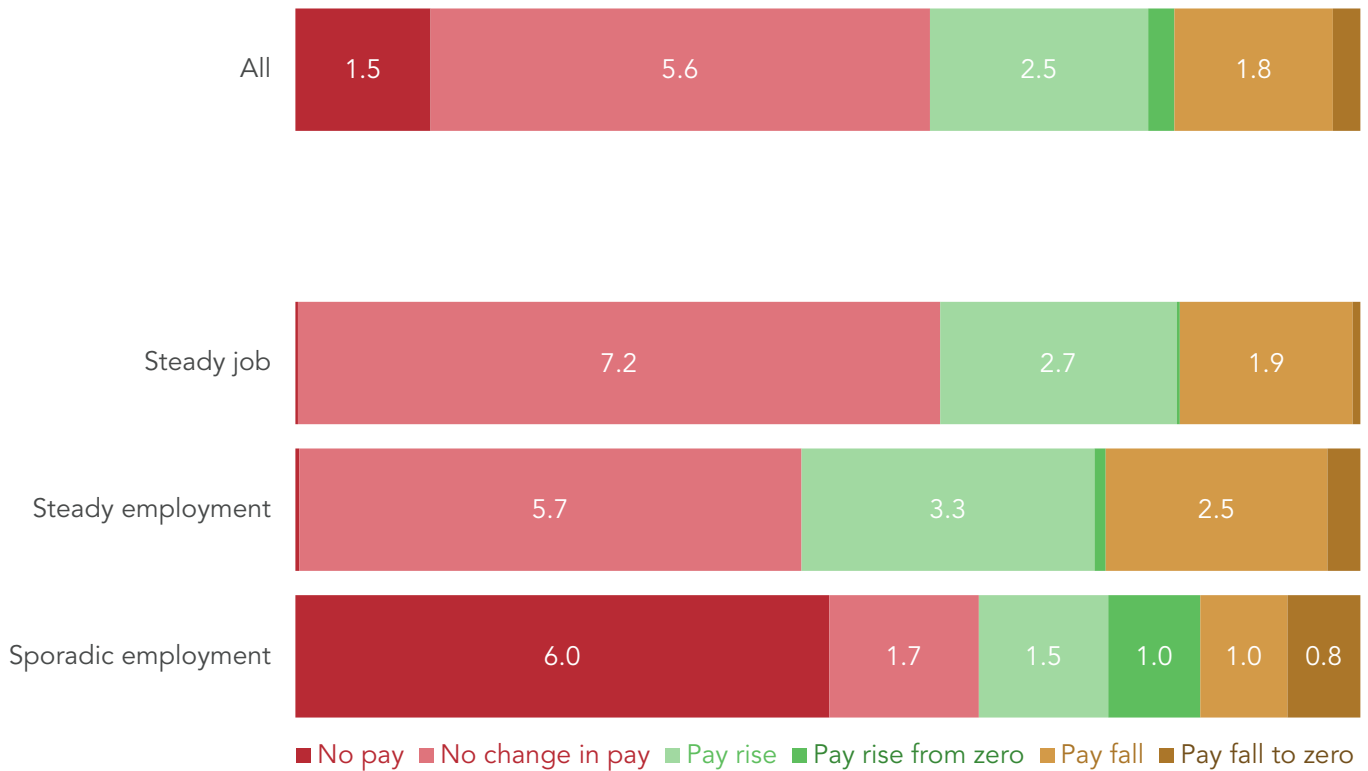
On average, across the seven million customer accounts in our sample, employees had 4.3 months in 2016-17 in which notable pay changes took place; with 2.5 months in which pay increased by a notable amount and 1.8 months in which pay fell by a notable amount.

[13] We identify employees in the customer account data as those people in receipt of at least one pay packet during the 2016-17 financial year.

[14] Employees working on flexible contracts or only during term times but remaining with the same employer all year will still likely still be found in this group, as we allow for gaps between pay dates of up to 125 days.

Figure 4: Labour market transitions have a significant effect on the frequency of pay changes

Average number of months with different monthly pay change patterns, by type of employee: 2016-17



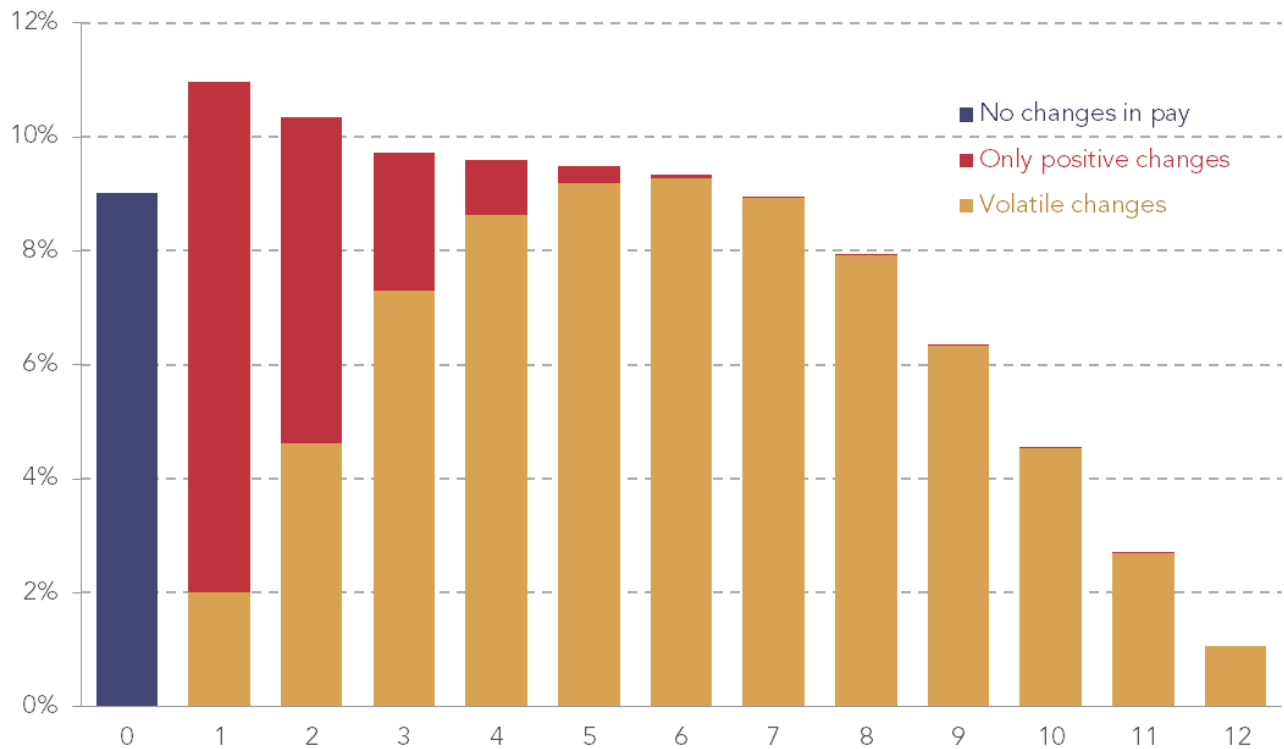
Notes: Changes are defined as taking place whenever the arc percentage change in pay from one month to the next has an absolute value greater than five per cent.
 Source: Lloyds Banking Group

Employment entry and exit made up a relatively small proportion of the overall number of changes, but a relatively high share of the “sporadic employment” group. This group had as many months of moves in and out of work during the year (1.8 months) as it spent in work with no change in pay (1.7 months).^[15] Focusing just on the large “steady job” group, whose pay changes reflect successive interactions with a single employer rather than those resulting from getting a new job or cycling in or out of work, a more detailed look uncovers a wide variation in individual experience. Examining the distribution of the frequency of pay changes, we find for example that although those in the steady job group have an average of 4.7 months a year in which notable pay changes occur, 9 per cent of this group have no months of notable pay changes. This is shown in Figure 5.

[15] There are also a small number of individuals in the “steady job” group who have a small number of months of employment entry and exit. This is because we allow for those paid by the same employer over the year to have a gap of up to 125 days between payment in order that employees (such as school catering staff) who have occasional large gaps between pay packets are classed as having a steady job where they are with the same employer at the start and end of the year.

Figure 5: The majority of those with a steady job experience volatility in their monthly pay

Proportion of employees remaining in work with the same employer, by number of months with notable pay changes and type of pay change: 2016-17



Source: Lloyds Banking Group

These individuals with “volatile changes” are all those who experienced at least one change in pay during 2016-17 and for whom at least one of these changes was negative. Of course, in some cases a negative change in pay may represent a welcome step in people’s lives, for example when employees move to permanently lower working hours in order to take on caring responsibilities or take advantage of more leisure time.

However, those with only one downwards change (and no upwards changes) make up a very small minority (three per cent) of the volatile pay group. Our conclusion is that notable changes in pay beyond only pay rises and bonuses are a fact of life not just for those moving between employers or in and out of work in a year, but for the majority of those staying with the same employer throughout. As such, pay volatility appears to be a common feature of employment in the UK.

Across the whole sample, the average absolute pay change from month to month is 15 per cent

Now we have a sense of the frequency of pay changes, we turn to developing an understanding of their magnitude. As with annual volatility, and in line with the existing literature, we calculate changes in pay from month to month using arc percentage changes. We also make adjustments to the pay received into each bank account to iron out any volatility arising from the impact of non-monthly pay periods.

Detail on our methodology can be found in Box 1.

i Calculating pay change

We start by calculating an adjusted version of monthly pay that accounts for the fact that not all employees are paid monthly – and that those paid weekly, fortnightly or four-weekly will experience pay period effects. Their pay will be higher in some months than in others simply because they were paid more times in that month than usual. For example, someone paid fortnightly will have two months a year in which they are paid three times, rather than two.

Because it is entirely expected and perfectly regular, we exclude this sort of pay change from our analysis using the following calculation:

*Adjusted monthly pay = (total pay received in a month / number of payments received) * average number of payments expected per month*

After correcting for calendar effects we use arc percentage changes rather than simple percentage changes as the base calculation for any statistics we report. The formula for an arc percentage change has the average of the current and baseline pay as its denominator rather than just the baseline pay:

Arc percentage change = (current pay – baseline) / (0.5(current pay + baseline))*

This method of calculating changes means that the direction of any change has no impact on its magnitude. For example, a pay change from £1,000 to £1,500 would normally be expressed as a 50 per cent increase whereas a pay fall from £1,500 to £1,000 would equate to 33 per cent fall in pay. Using an arc percentage change, both of these changes equal 40 per cent.

For the annual measures discussed in Section 1 we simply use pay in the current year and the previous year to calculate pay changes. For monthly changes we use a mixture of the previous month and the median of the

previous three months as our baseline, in order to avoid counting bonuses or other one-off changes in monthly pay twice.

In cases where a “step-change” in pay occurs (where the increase or decrease isn’t just a one-off spike) we use the previous month’s pay as our baseline. But when a spike in pay (such as a bonus) occurs, this simple method leads to double counting of volatility. For example, take an individual with monthly pay of £1,000 in January, £1,000 in February, £1,500 in March and £1,000 in April. Using the previous month as the baseline means that in March the pay change would be 40 per cent, and in April it would be minus 40 per cent. Given our focus on pay volatility, we’ve taken the view that someone with this pay pattern should be characterised as having just one month of upwards pay change.

For this reason, we use the median pay in the preceding three months as our baseline when spikes in pay occur. This would mean that the pay change in April in the above example is calculated as zero; the £1,000 in April would be compared against the median pay in January, February and March – which is also £1,000.

For analysis of annual pay changes we adjust for inflation using CPIH. But for monthly pay changes we have chosen to keep pay figures in nominal terms. When taking a longer-term view of individuals’ pay patterns, changes in prices are material to our understanding of the magnitude of change and how this relate to living standards (annual price growth exceeded five per cent in 2008 and 2011, for example). However, our view is that monthly changes in inflation will just be too small to have a bearing on the lived experience of pay change over such a short time period. In addition, it is likely that families think of changes in budgets from month to month in cash rather than price-adjusted terms.

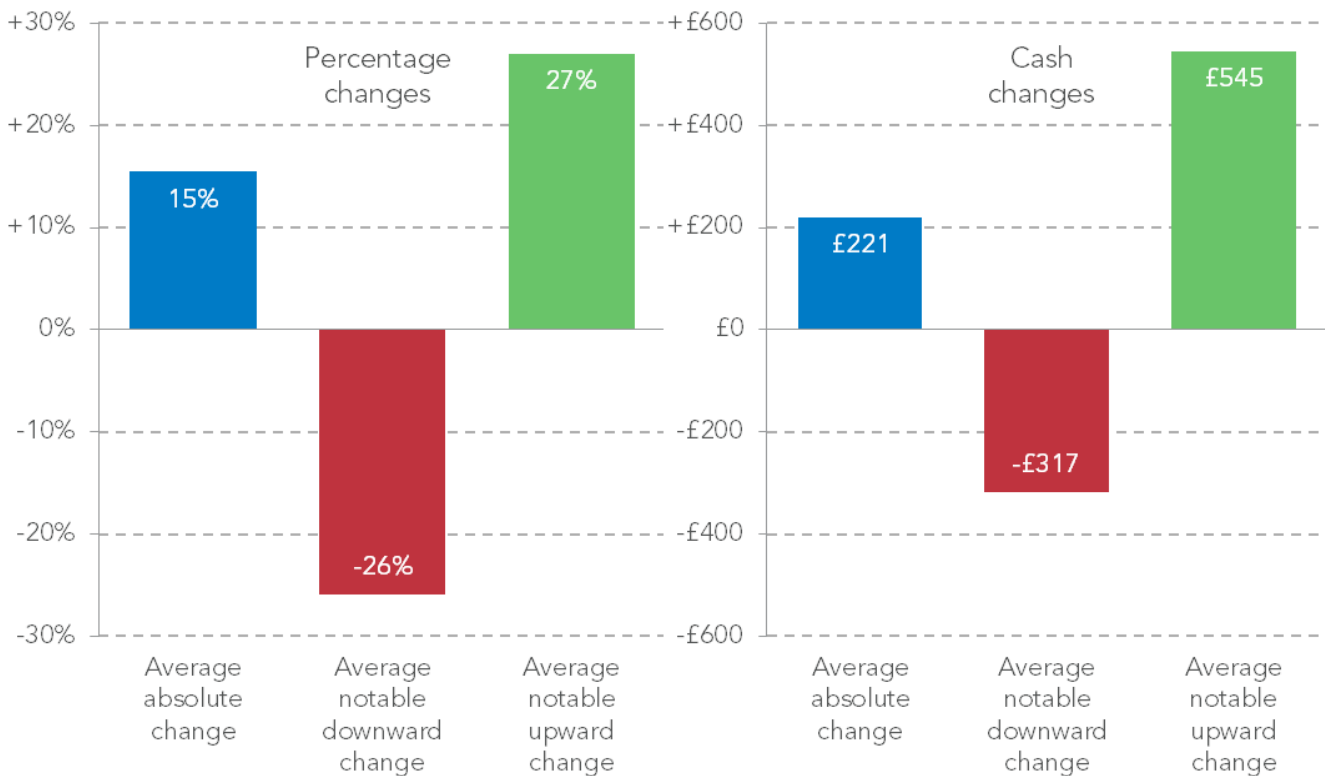
We average pay changes from month to month for each person over the year and then reach a population-wide statistic by taking the mean of these individual annual averages.^[16]

[16] We have calculated these statistics for the past four financial years and there is little difference from one year to the next. For this reason, we limit our analysis in the bulk of this report to the 2016-17 financial year.

As Figure 6 shows, across all employees the average absolute pay change in 2016-17 (including those months in which pay changed very little, or not at all) was 15 per cent, or £221. Notable downward changes (those greater than five per cent) averaged -26 per cent, and notable upwards changes averaged 27 per cent. In cash terms, the average downward change was considerably smaller than the average upwards change (-£317 vs. £545). This is because upwards changes are more common among those on higher earnings – a finding we return to in Section 3.

Figure 6: Average monthly pay changes are higher than might be expected

Average absolute monthly pay change, all employees, percentage and cash changes: 2016-17



Source: Lloyds Banking Group

The average absolute change is considerably smaller in magnitude than upwards or downwards changes because it includes the impact of changes smaller than five per cent – on average (as shown in Figure 4) employees have 5.6 months in the year of small, or non-existent, pay changes.

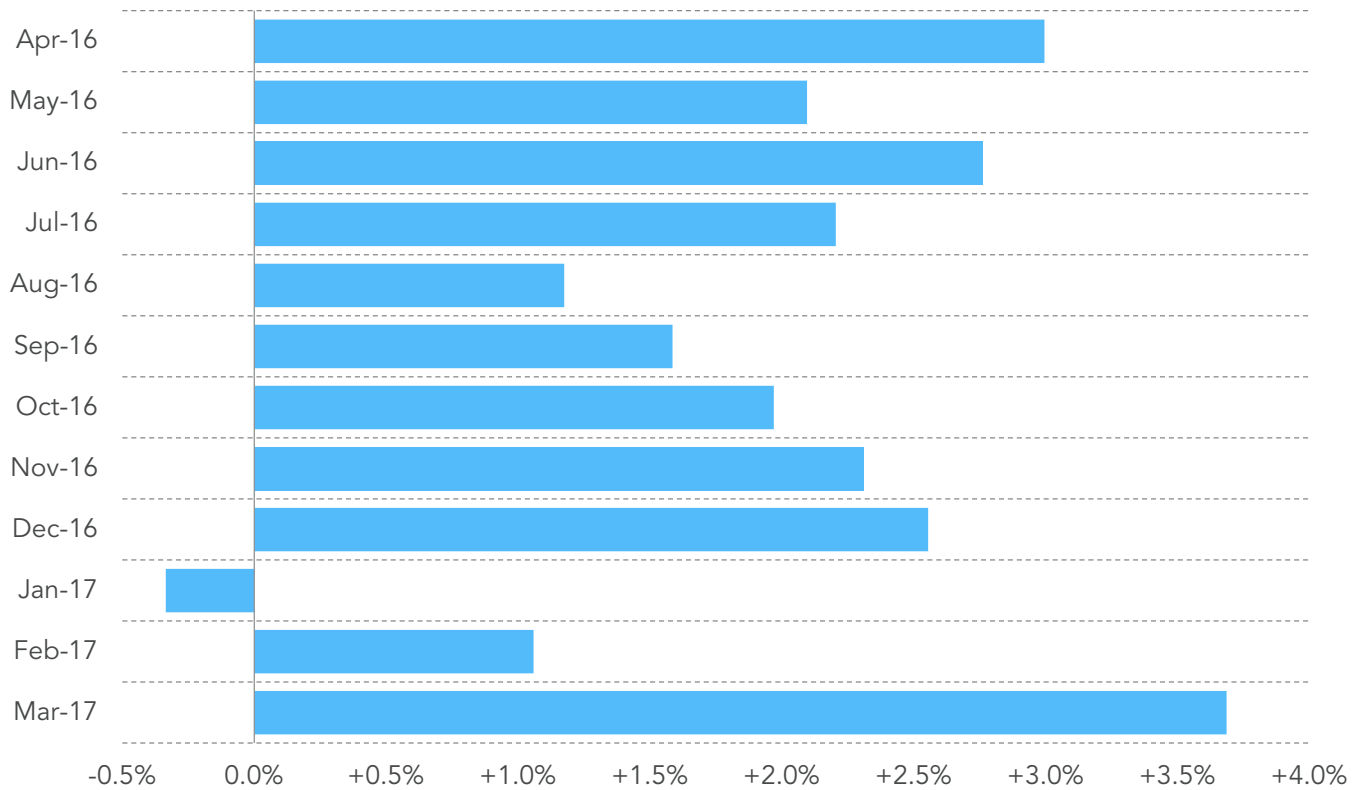
Some changes in pay can be explained by seasonal differences

Summarising monthly pay changes across 2016-17 as a whole masks differential patterns over the course of the year. Figure 7 details these differences (in this instance focusing on actual rather than absolute changes), showing that on average monthly pay falls slightly in January and increases by large amounts in April and March.

Figure 7: The seasonal pattern to monthly pay changes is significant

Average monthly pay change, all employees: 2016-17

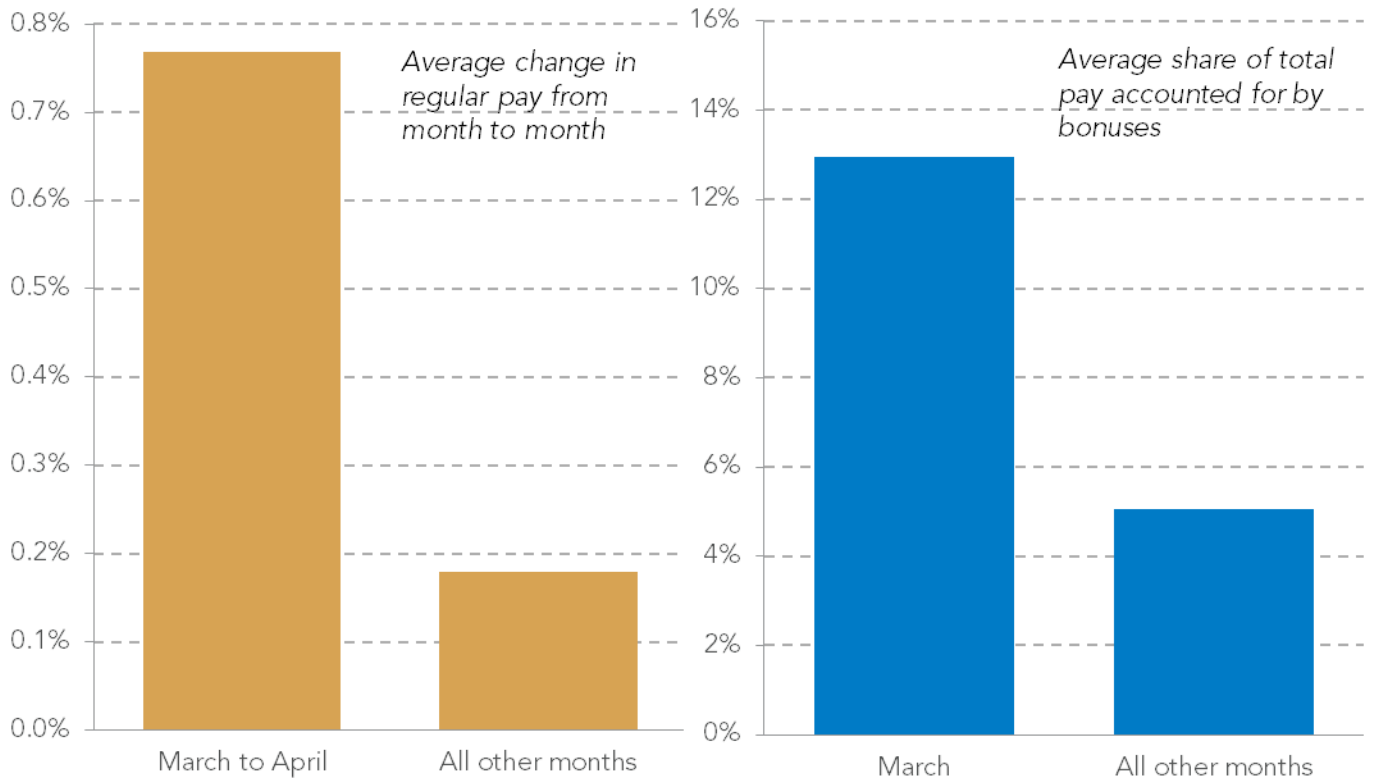
Source: Lloyds Banking Group



A picture of large positive average nominal pay changes in March and April is corroborated by findings from analysis of Average Weekly Earnings data. Since the turn of the century the average nominal change in regular pay between March and April has been four times larger (at 0.8 per cent) than the average monthly pay change recorded between all other months (0.2 per cent), as set out in Figure 8. March stands out too – as being a month in which bonuses have taken up an average of 12 per cent of total pay, more than twice as much as in all other months. These seasonal patterns offer an important reminder that many types of pay changes are welcome. For example, getting a bonus is clearly a positive step for most employees, as are promotions resulting in upwards step-changes in pay.

Figure 8: Bonuses and pay rises are larger in certain months of the year

Average change in regular pay from month to month and average share of total pay accounted for by bonuses: 2001-17



Source: Average Weekly Earnings, ONS

Although moves in and out of work are an important driver of pay changes, significant pay changes remain even for those who've held the same job all year

Job moves are an important determinant of how large average pay changes are. They are also something our labour market could do with more of: we know, for example, that the rate of job moving is still below its pre-crisis peak even as the average pay rise for someone voluntarily moving jobs now stands at 10 per cent.^[17]

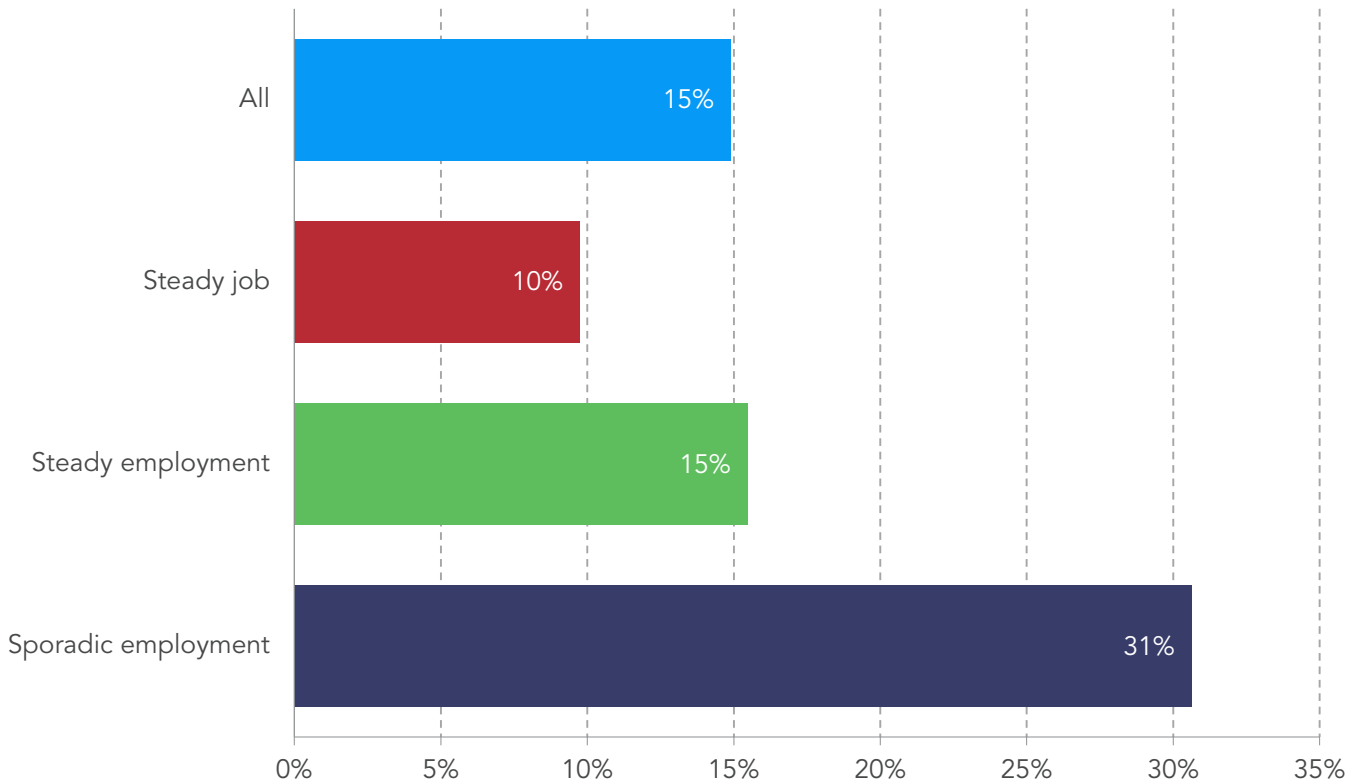
We can see the impact that moving jobs has on pay changes by comparing two similar groups – the “steady job” and “steady employment” groups. The former were with the same employer throughout 2016-17 whereas the majority of those in the latter group switched jobs in 2016-17, but remained employed throughout the year.^[18] The difference in the size of the average pay change between these two groups is largely determined by the impact of job moves. As can be seen in Figure 9, those in the second grouping have an average absolute pay change 50 per cent higher (at 15 per cent) than the pay change recorded for those who remained with the same employer all year (10 per cent).

[17] S Clarke, *The RF Earnings Outlook Q1 2018*, Resolution Foundation, August 2018

[18] Though, a small minority of this group didn't switch jobs but rather entered employment at the very start of the year, or left it at the very end.

Figure 9: Job moves and employment patterns matter for the size of monthly pay changes

Average absolute monthly pay change, by type of employee: 2016-17



Source: Lloyds Banking Group

Beyond the impact of job moves it is striking that the average pay change is still so high among the steady job group. As we've shown above, three-quarters of those in this grouping have volatile pay; aligned to this, the average absolute monthly change in pay for this group stands at 10 per cent.

This finding is the primary reason for our focus in the remaining sections of this report on the steady job group. Existing literature has already documented the impact of employment entry and exit on labour market outcomes,^[19] and the ways in which moving from one job to another affects pay.^[20] We seek to complement this work with a focus on those who remain with the same employer over the course of a year, a group that has much more monthly variation in their pay than many of us may have first imagined. As such, we have repeated our analysis of the headline measures of pay change but just for those with a steady job in order to see the magnitude of upwards and downwards changes for this group alone, this is shown in Figure 10.

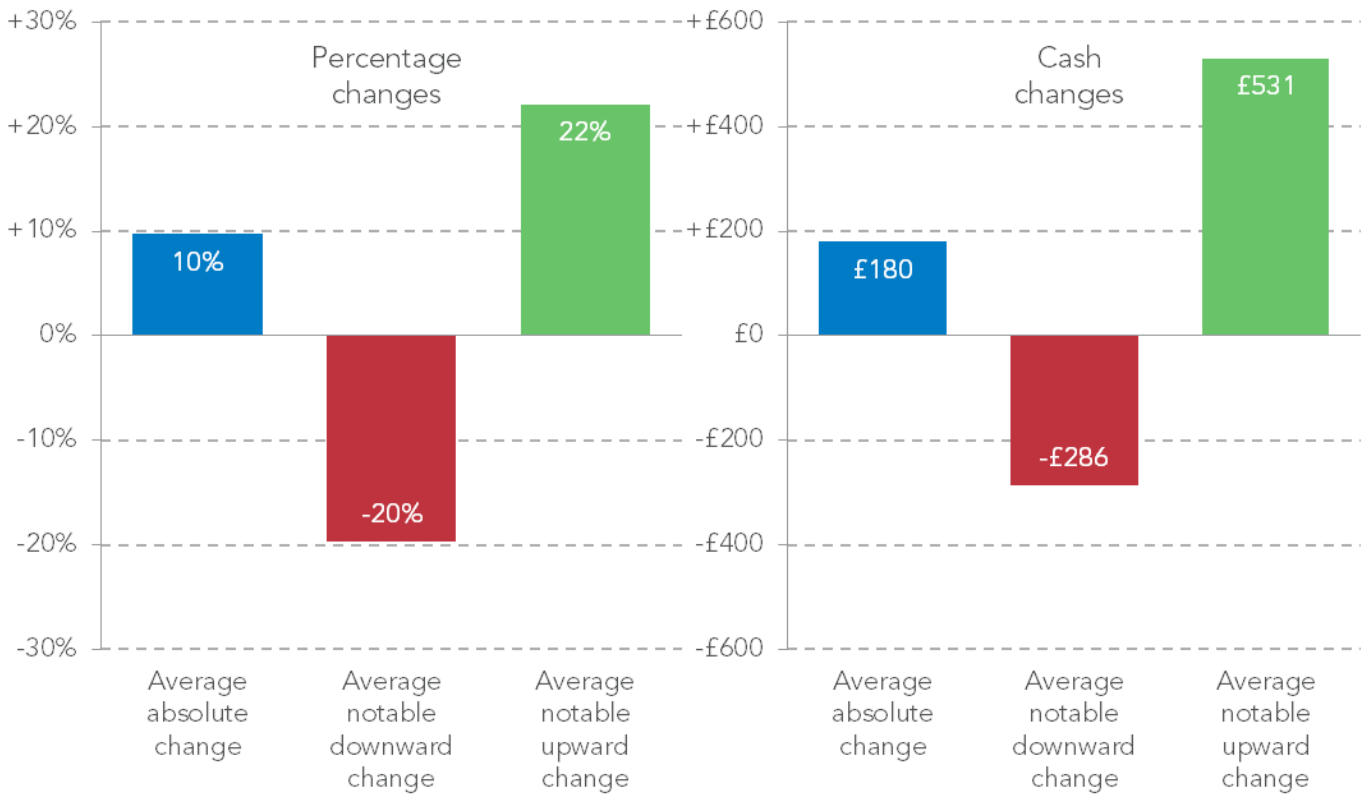
[19] P Gregg & L Gardiner, [A steady job? The UK's record on labour market security and stability since the millennium](#), Resolution Foundation, July 2015

[20] L Gardiner & P Gregg, [Study, Work, Progress, Repeat? How and why pay and progression outcomes have differed across cohorts](#), Resolution Foundation, February 2017

Figure 10: Average monthly pay changes are higher than might be expected, even for those with a steady job

Average absolute monthly pay change, employees with a steady job, percentage and cash changes: 2016-17

Source: Lloyds Banking Group



The average changes in pay are smaller for this steady job group than the overall averages presented in Figure 6, but are still relatively high. Notable upward changes (which take place in an average of 2.7 months a year) average 22 per cent and notable downward changes (which occur in an average of 1.9 months a year) average -20 per cent. This isn't a small amount, it equates to £286 (as the right hand panel in Figure 10 shows) – an amount roughly similar to the average amount UK households spend on groceries each month, which was £250 in 2016-17.^[21] Overall, when including the months in which pay changes by less than five per cent or not at all, the 10 per cent average pay change from month to month for those at the same employer all year equates to £180.

The following sections of this report seek to understand how this variation in pay differs across the steady job group, starting with a focus on differences across the earnings distribution.

[21] ONS, [Family Spending in the UK: financial year ending 2017](#), January 2018



Section 4: Pay changes across the earnings distribution

Notable (larger than five per cent) monthly pay changes are more common for those on lower earnings than for middle or higher earners. This is particularly the case for notable downward changes in pay, which occur in an average of 2.3 months a year for those earning around £10,000 who remained with the same employer throughout 2016-17, compared to an average of 1.8 months a year for those earning above £15,000.

Focusing on those remaining with the same employer throughout 2016-17, we find that four-in-five lower earners (those with take-home pay of around £10,000) have volatile pay, compared to around two-in-three of those on higher earnings (with take-home pay around £35,000). Looked at a different way, a quarter of those on higher earnings and in a steady job enjoyed only positive notable pay changes during 2016-17, compared to just one-in-ten of those on lower pay.

Given this, it's no surprise that the direction of pay changes has a positive skew for those on higher earnings: their positive pay changes are, on average, larger than their negative ones. In comparison, the size of upwards and downwards changes is similar for those on lower earnings.

Taking account of all monthly pay changes – up and down – over the year we find that the absolute average monthly pay change for those with a steady job is highest for those on the very lowest earnings (in excess of 15 per cent), and lowest for those with annual take-home pay close to the median amount of £17,500 (at 8 per cent).

Pay changes are more frequent – and more likely to be negative – for lower-paid employees

Over and above the frequency and extent of fluctuations in pay, pay *levels* are clearly centrally important to the living standards of working families. In particular, it seems reasonable to suggest that frequent pay changes – or pay volatility – is most concerning from a living standards perspective when combined with low-or-modest levels of earnings. As such, in this section we explore patterns of pay changes across the earnings distribution.

Ideally we would be able to segment employees by their hourly pay levels, in order that differences in hours worked did not determine our understanding of the variation in pay changes across the pay distribution. However, this is not possible in the LBG customer account data, and as such we focus on the total take-home pay received over the course of 2016-17.

It's worth noting that take-home pay is lower than gross pay, the measure of pay most commonly used in analysis of pay levels. Due to the progressive nature of taxation on earnings this gap is relatively small for those on lower earnings. For example, someone with take-home pay of £12,500 will have gross earnings of around £14,000 or similarly someone on median earnings in our sample, £17,500, will have take-home pay of £21,000. In contrast, an individual with take-home pay of £40,000 a year will have gross pay near to £56,000.

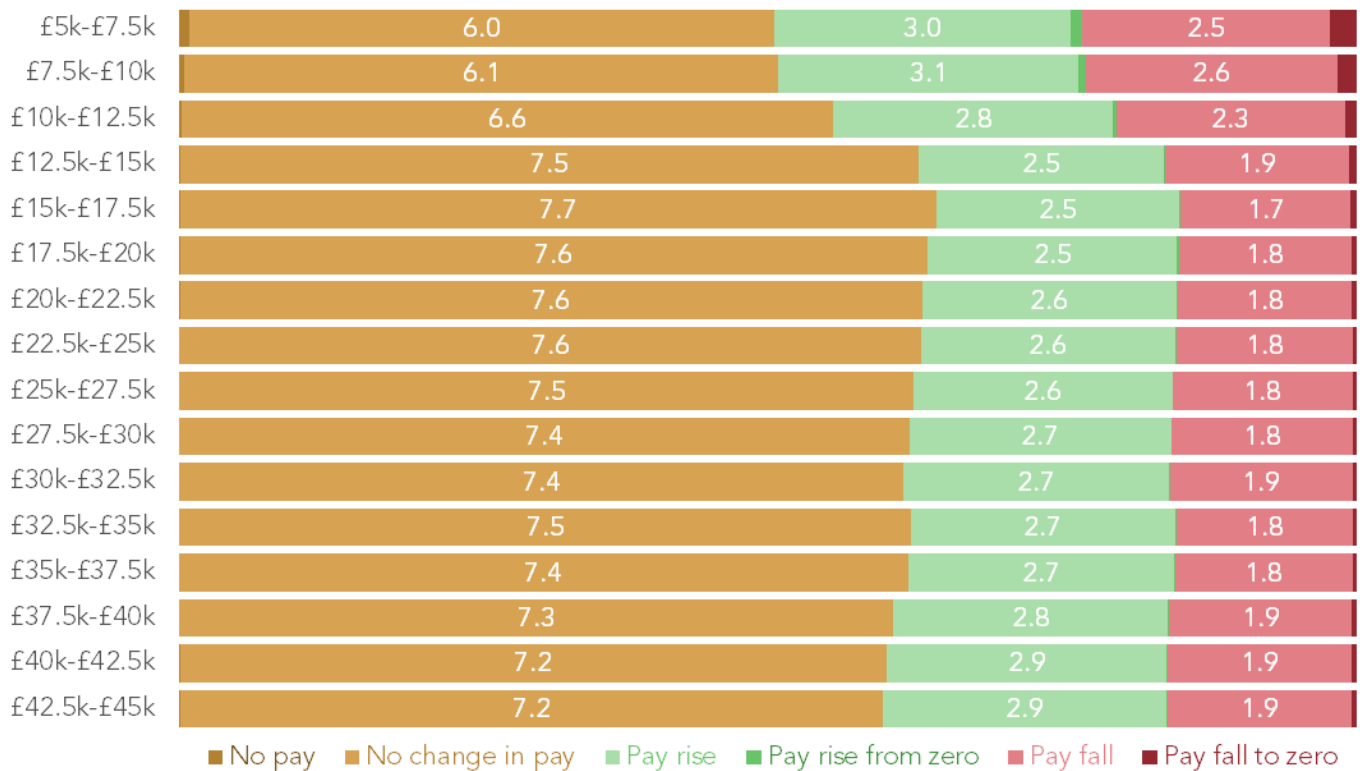
We restrict our focus here, and throughout the remainder of this paper, to those in our steady job category – who remained with the same employer throughout 2016-17. A small number of

this group have months with no pay, and pay falls to zero (or rises from zero). This is because we allow for a gap of up to 125 days between pay packets from the same employer before classing individuals as having left employment. In doing so we allow those with large gaps between pay packets but who do not change jobs to remain classed as having a steady job - for example any school catering staff that do not receive pay in the summer holidays.

Figure 11 shows the different types of monthly pay change across the pay distribution for this steady job group. The lowest paid had more months during 2016-17 in which notable changes in pay occurred than those on middle or higher earnings.

Figure 11: The frequency of different monthly pay changes varies across the earnings distribution

Average number of months with different monthly pay change patterns for employees remaining in work with the same employer, by annual take-home pay: 2016-17



Notes: Changes are defined as taking place whenever the arc percentage change in pay from one month to the next has an absolute value greater than five per cent
Source: Lloyds Banking Group

The difference in frequency of pay changes across the earnings distribution is most pronounced in the case of downward changes. Those earning between £7,500 and £10,000 a year had downward pay changes greater than five per cent in an average of 2.6 months a year, compared to an average of 1.8 months a year for those earning above £15,000.

Focusing on those who've been with the same employer all year, the lowest earners are more likely to have volatile pay changes than higher earners

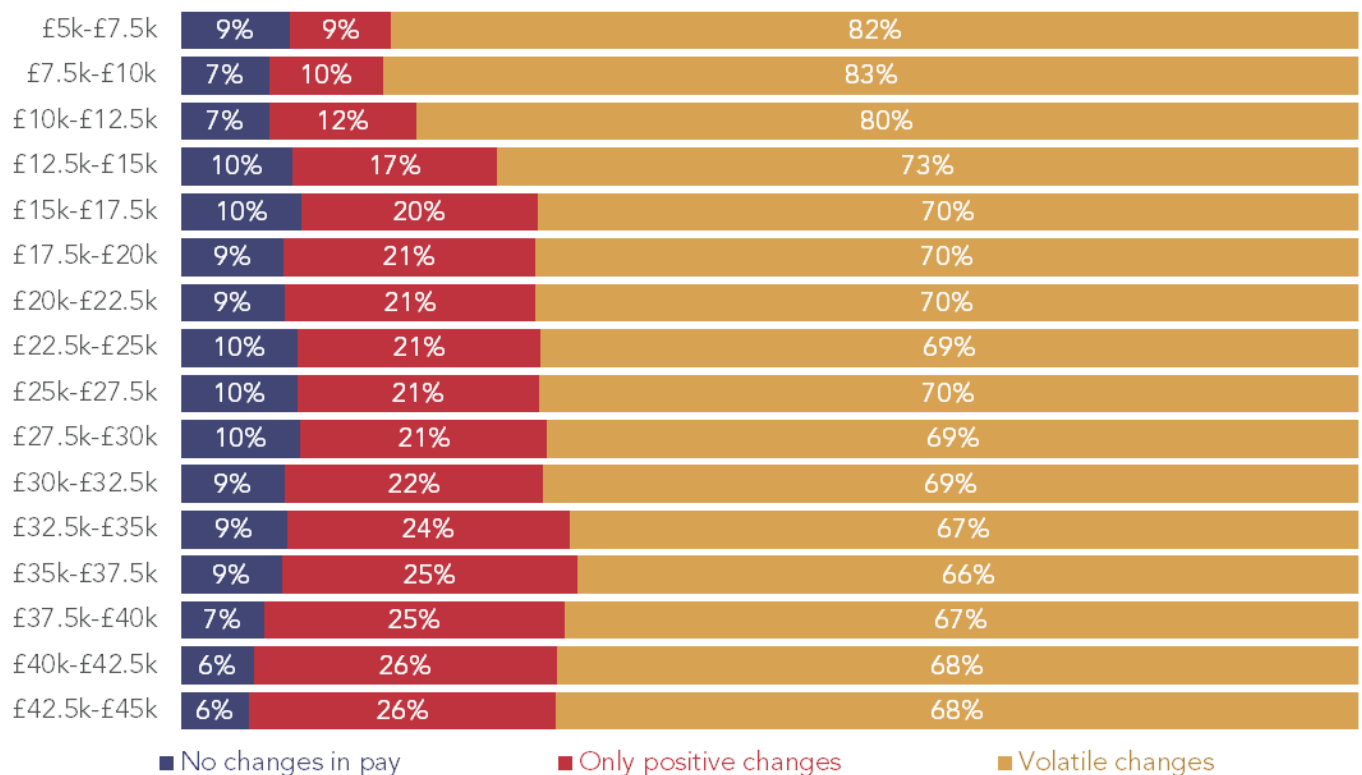
The finding that lower earners had relatively more downward pay changes than those on higher pay suggests that they also experienced more volatility, meaning that their pay changes were not just a result of pay rises or bonuses. We can investigate this further by focusing in on the steady job group, all of whom worked for the same employer throughout 2016-17.

As in Section 2, we split this group into three. First, those who had no month-to-month pay changes greater in magnitude (in either direction) than five per cent. Second, those for whom pay changes were only positive over the year. Third, those with pay volatility – for whom pay both increased and decreased by more than five per cent over the course of 2016-17.^[1]

This segmentation reveals that volatile pay is more common for those with steady jobs on low earnings than those with a steady job on high earnings. As Figure 12 shows, more than four-in-five of those with take-home pay of around £10,000 experience volatile pay changes, compared to close to two-in-three of those with net annual pay in the region of £35,000.

Figure 12: Lower paid employees are more likely to have volatile pay than others

Proportion of employees remaining in work with the same employer, by net annual pay and type of pay change: 2016-17



Source: Lloyds Banking Group

[1] This group also includes those with just one monthly pay fall greater than five per cent.

Figure 12 also shows that over a quarter of those in the steady job group on high earnings had only positive month to month pay changes throughout the year, compared to closer to one-in-ten of those on low earnings. Again, this difference is partly endogenous to the way in which we've defined our earnings bands, in so far as large pay rises or promotions drive up total pay over the year. This caveat aside, it is clear that volatility is more common among lower-earning individuals remaining with the same employer over a year, and that unambiguously beneficial pay increases are less common.

This differing experience of pay changes came through clearly in our qualitative research (more detail on which can be found in the Annex). We found that those on higher earnings were broadly positive about pay changes from month to month, for example those who worked on commission tended only to experience one-off positive pay changes:

I know a month in lieu – my commission comes the following month so if I know I am getting a bigger commission I have already planned the restaurant I am going to go to and celebrate. I have already spent it before I have got it.

Carrie, high-earner

However, lower-paid employees with variable hours and shift patterns had the opposite experience. Pay changes for lower earners were much more often described as a downwards deviation from their expectation. Crucially, pay changes like this were also closely associated with uncertainty-related anxieties:

I don't like zero-hours contracts. Because you don't know whether you're going to be making the same income every month or even weekly to be honest. I get called in when they need me....That's the only problem I have, is worrying about when I am going to work....Just sitting by my phone waiting for them to call.

Hamida, low-earner

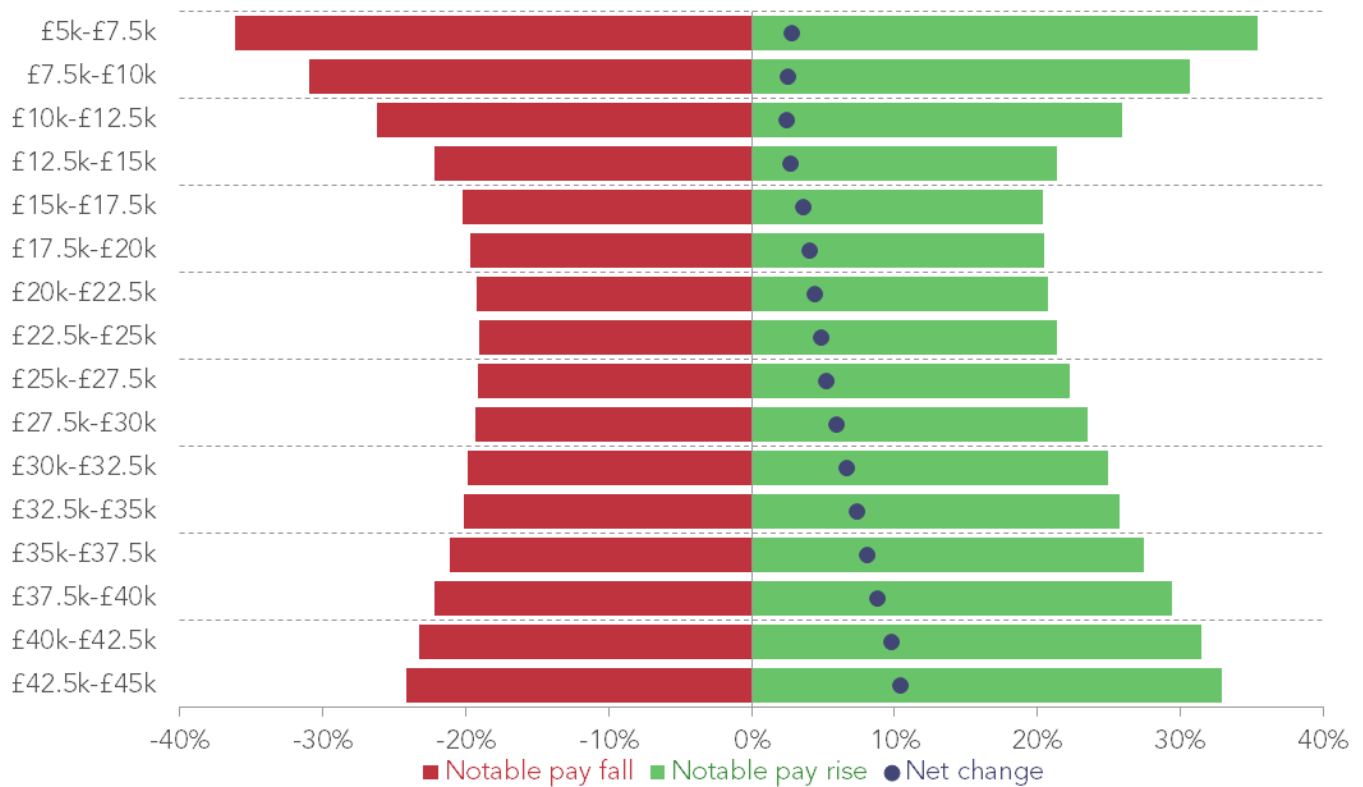
The direction of pay changes has a positive skew for higher earners, more so for those with lower pay

We have now demonstrated both that lower earners have a higher number pay changes throughout the year than those on higher pay, and that (for the steady job group at least) these are more likely to be the result of volatility than unambiguously benign pay increases. We now turn to the size of pay changes and how this varies across the annual net pay distribution.

As set out in the previous section, average notable increases in pay from month to month are larger than notable declines in pay. However, this pattern was not uniform across the distribution of earnings for those remaining with the same employer throughout 2016-17. As earnings increase the size of notable positive changes also increases, but at a much faster rate than does the size of notable negative changes. This means that there is a significant positive skew to pay changes for higher earners, which is much diminished for those on lower earnings. This is shown in Figure 13.

Figure 13: The direction of notable pay changes has a positive skew for higher earners

Average percentage change in earnings from month to month for employees remaining in work with the same employer, by annual net pay: 2016-17



Source: Lloyds Banking Group

Focusing, for example, on the £35,000 to £37,500 pay band we see that the average upwards change in take-home pay from month to month is £990 (21 per cent) whereas the average downwards change is £520 (27 per cent). In contrast, the average upwards change for those in the £10,000 to £12,500 pay band is £220 (26 per cent) and the average downwards change is £180 (26 per cent).

That the average notable fall in monthly pay for this low-paid group is £180 is not something to be overlooked. This is similar to, for example, the cost of a low-priced but brand-new washing machine.^[2] Just as we might worry about the impact of one off costs arising from having to replace a broken washing machine, so should we be concerned by the fact that the average notable downward change in pay for low earners is of this level.

As discussed in the previous section, it is not the case that we would want to get rid of all notable downwards changes in pay. Some will be a result of welcome steps, such as parents choosing to work fewer hours in the school holidays or to take it easy after a busy period at work. But it seems reasonable to suggest that that negative pay changes commonly represent a less beneficial set of circumstances for those on lower pay than for those earning more.

[2] The cheapest washing machine available in Argos at the time of writing was £189.99, in Currys/PC World the cheapest available was £174.99.

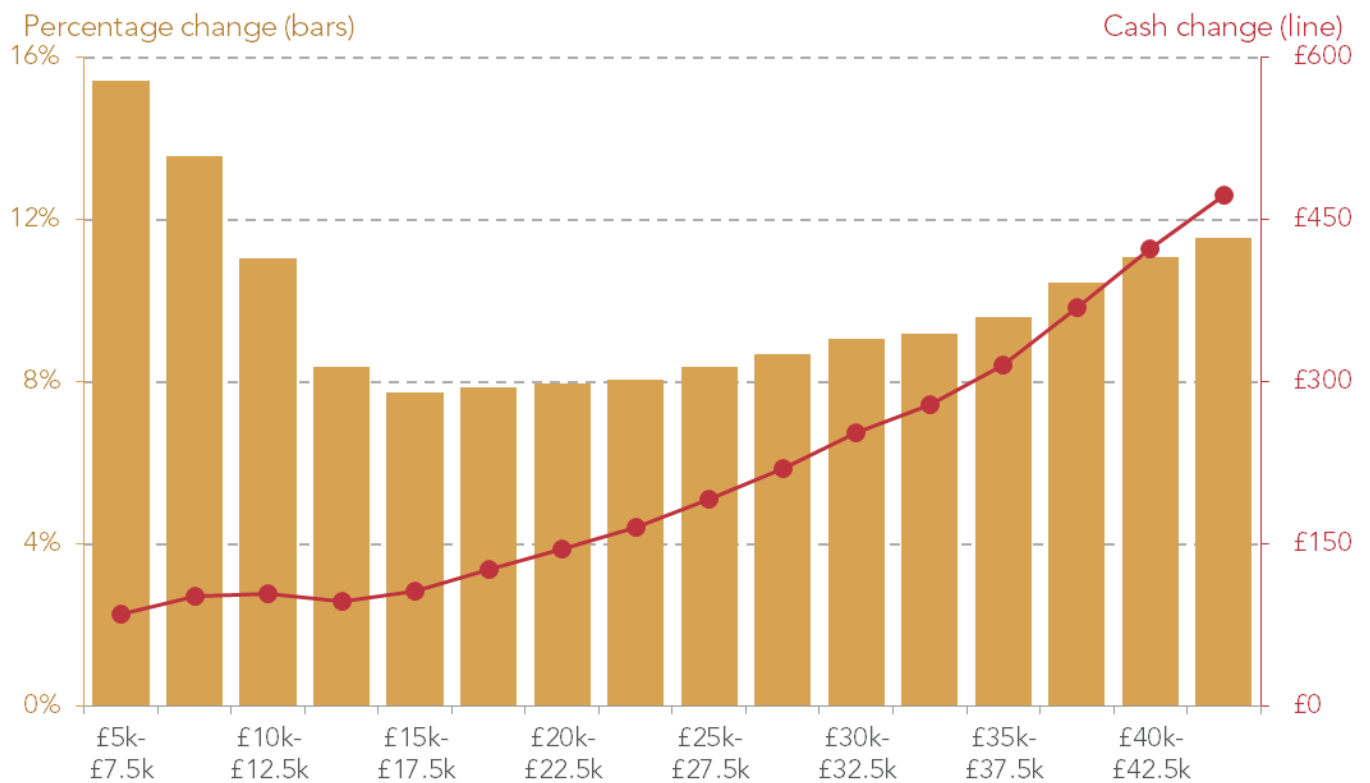
Even among those with a steady job, the lowest earners have the highest average absolute pay change

To summarise the distribution of changes shown above, we now explore average absolute pay changes within each pay band. As set out in Box 1 in the previous section, this measure takes an average across all pay changes including those smaller than five per cent.

We find that those on the lowest and highest pay have monthly pay changes of higher magnitude than those with more typical net annual earnings. For example, as Figure 14 shows, those with annual net pay of between £5,000 and £10,000 have an average absolute pay change of close to 14 per cent, and those earning between £42,500 and £45,000 have an average pay change of 12 per cent. In contrast, those with take-home pay similar to the median pay in the LBG sample – £17,500 – have an average change of less than eight per cent.

Figure 14: Pay changes are highest for those earning the least

Average absolute monthly change in take-home pay for employees remaining in work with the same employer, percentage and cash changes: 2016-17



Source: Lloyds Banking Group

Figure 14 also illustrates that the cash value of pay changes increases steadily with pay. The average absolute cash change in pay is over four times higher (at £470) for those earning just under £45,000 than for those earning around £10,000 (£100). As previous analysis in this section has set out, pay rises and bonuses are a greater determinant of pay changes for those with higher pay, suggesting that we need not be too worried about the high figures reported here for those earning significantly above average.

On the other hand, the fact that pay changes are relatively large for those on the lowest earnings – even among this group that have been with the same employer all year – suggests that variation in hours (and associated pay rates) is more common lower down the earnings distribution.

For example, pay for working overtime hours (which by their very nature are variable) is a greater share of total pay for part-time workers (16 per cent) than it is for full-time workers (11 per cent).^[3] Similarly, we know that those in atypical forms of employment associated with hours volatility – such as working on a zero-hours contract or as an agency worker – have, on average, lower pay than other employees.^[4]

Of course, earnings levels are not the only determinant of experiences of pay volatility the size of pay changes. The following section turns to other important differences across groups, focusing on gender, age, and the area of the country in which employees live.

[3] C D'Arcy, [Time for time-and-a-half: Exploring the evidence and policy options on overtime](#), *Resolution Foundation*, December 2017

[4] L Gardiner, [A-typical year?](#), *Resolution Foundation blog*, 30 December 2016

Section 5: Monthly pay changes by gender, age and region

Overall, gender differences in pay changes are relatively small. However, there is strong evidence that low-paid men have notably higher pay changes than low-paid women – both in monthly and annual data. In part this can be explained by the different sectors in which men and women on low earnings work.

Young people also have higher monthly pay changes than their older counterparts – average absolute changes are highest for those aged 18 and lowest for those aged 53. In part, this is because young people are more likely to enjoy large pay rises as they progress rapidly at the early stages of their careers. But young are also more likely to experience downward pay changes – and by implication have a higher incidence of volatile pay than older employees.

Average absolute monthly pay changes are higher in London than in other regions, but this is driven by a greater incidence of positive changes and the greater share of Londoners who are high paid (as well as a larger share of foreign nationals). Of more concern is Northern Ireland, which has the highest levels of volatile pay for those remaining with the same employer all year, as well as relatively low average pay levels.

Overall, the size of both monthly and annual average pay changes is similar for men and women

To what extent are the patterns of pay changes overall and at different earnings levels – explored in the previous two sections – experienced similarly across the sexes? To answer that question we maintain the focus of previous sections, honing in on those who were with the same employer throughout 2016-17. Among this group, the average absolute monthly pay change was roughly the same for men (10 per cent) and women (9 per cent). Men had higher average earnings than women, so in cash terms the difference was more substantial: with an average absolute monthly pay change of £230 for men compared to £140 for women.

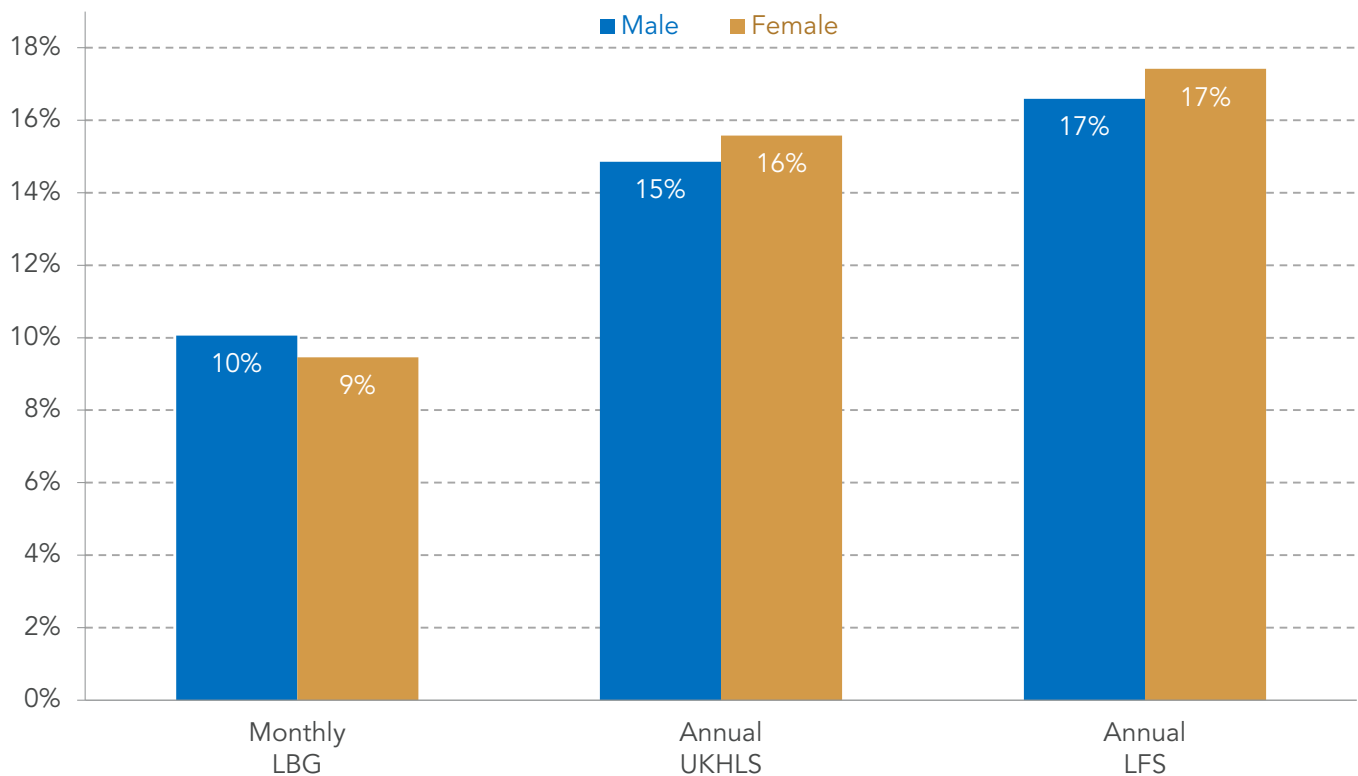
Analysis of gender differences in survey data – necessarily focusing on annual pay changes – paints a similar picture, although in this case men have a slightly *lower* average pay change than women. The results across sources, though consistently making use of take-home pay, are shown in Figure 15.

Monthly pay changes for both men and women are lower than annual ones. This is likely to be a product of the way in which monthly pay changes are averaged across the whole year – including the months in which pay doesn't change at all or only changes by small amounts.

But overall the differences between the size of pay changes for men and women are small; in no survey are they larger than 1 percentage point. This is a margin too slight to allow any firm conclusion that there are large differences between the genders to be drawn. Rather, it seems more sensible to conclude that – on average – pay changes are similar for men and women.

Figure 15: Monthly and annual pay changes are similar, on average, for men and women

Average absolute pay changes for employees remaining in work with the same employer, by gender and data source: 2015-16



Source: Lloyds Banking Group; ONS, Labour Force Survey, ISER, UK Household Longitudinal Study

But the evidence is clear that low-paid men have larger pay changes than low-paid women

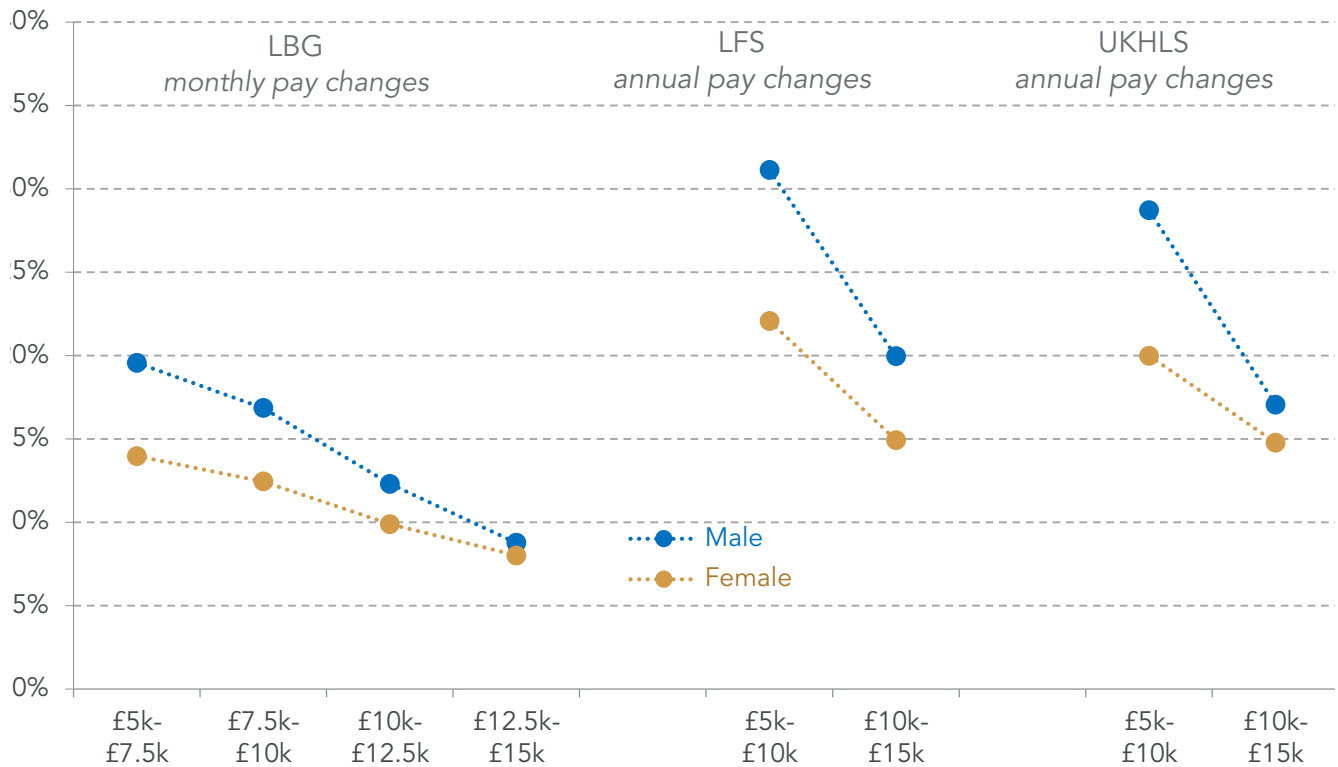
Despite the similar size of pay changes for each gender on average, there are significant differences at the lower end of the pay distribution – both in monthly data and annual data. As Figure 16 shows, men with annual net pay between £5,000 and £15,000 have higher pay changes than women earning the same amount, both on a monthly and an annual basis.

In the monthly data, average absolute pay changes are over one-third higher for men than women among those with annual-take home pay between £5,000 and £10,000 a year, this gap is smaller at higher pay bands and has all but disappeared by £15,000. The shape of this divergence – with a larger gap among those on the very lowest earnings – is also apparent in datasets recording average annual pay changes (in which pay is also measured after tax).

Higher average pay changes among men with lower earnings are not principally a result of low-paid men being more likely to experience a pay change than low-paid women. Low-paid men with the same employer all year have an average of 5.1 months a year in which pay rises or falls by more than five per cent, very similar to the average for women – 4.9 per cent.

Figure 16: Pay changes are higher for low-paid men than low-paid women

Average absolute pay changes for employees remaining in work with the same employer, by annual pay band, gender and data source: 2015-16



Notes: Monthly changes show the average monthly pay change between months in the 2015-16 financial year. Annual changes show average annual pay changes between 2014-15 and 2015-2016 (LFS) and between 2015 and 2016 (BHPS)

Source: Lloyds Banking Group; ONS, Labour Force Survey; ISER, UK Household Longitudinal Study

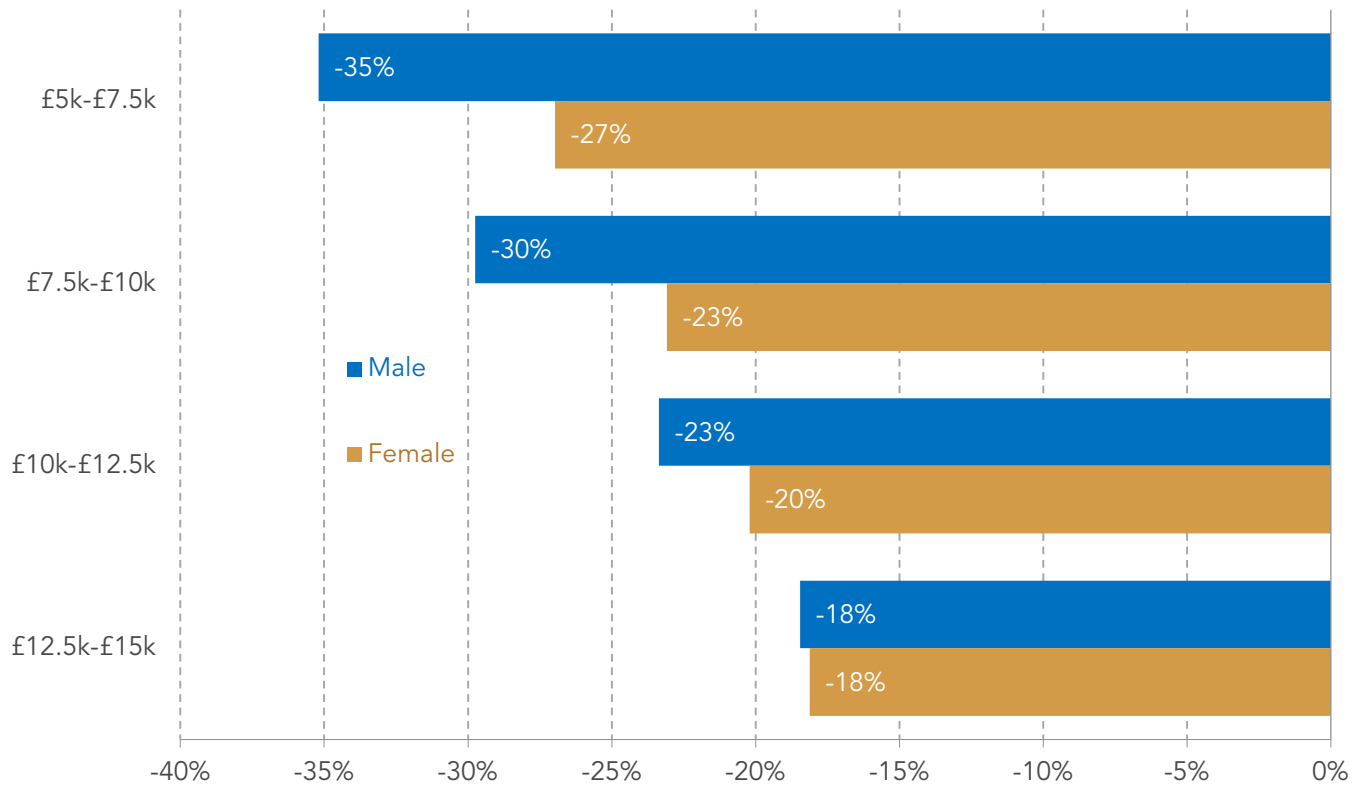
Rather, what stands out is the difference in the size of changes when they do occur, particularly for those men with the very lowest annual earnings. As Figure 17 shows, men with annual net pay between £5,000 and £7,500 a year had downward changes in pay from month to month that averaged -35 per cent, compared to an average downward change for women earning the same amount of -27 per cent.

It's a similar story when we look at upward changes in pay – low-paid men have larger positive monthly pay changes than women, particularly the very lowest paid. In this context, however, it is important to stress that low pay is still much more common among women than men. Almost half of all women remaining with the same employer all year had net annual earnings of less than £15,000 in 2016-17, whereas only a quarter of men in the same position had earnings this low.

This difference in the magnitude of pay changes isn't easily explained by one single factor. Our analysis of the LFS suggests that the different sectors that low-paid men and women work in has some effect. For example, half of all women with annual net pay between £5,000 and £15,000 (and who'd been with the same employer all year in 2016-17) work in the public sector, compared to just 20 per cent of men paid within the same range. Although we can't analyse the size of monthly pay changes by sector in the Lloyds customer account data, our analysis of annual pay changes for those earning between £5,000 and £15,000 in the LFS reveals that average pay changes are lower in the public sector than in the private sector.

Figure 17: Low-paid men have monthly pay changes of greater magnitude than those for low-paid women

Average downward changes in monthly pay for employees remaining in work with the same employer, by gender and annual net pay band: 2016-17



Source: Lloyds Banking Group

The extent of overtime appears to matter too. Men with gross earnings between £5,000 and £15,000 are more likely to work paid overtime than women (19 per cent compared to 16 per cent). Of those that do paid overtime, men do more than women – 6.8 hours per week compared to 5.7 hours. These findings bring home the importance of focusing not only on the extent of low pay among different groups, but also on the experiences of these groups. It’s clear that there is still a long way to go before low paid work is more evenly shared between the genders, for example 2.9 million women are in low pay compared to 1.9 million men.^[5] But, this evidence suggests that men’s experience of low pay – in particular the type of work they do when low paid – means that they are more likely to experience volatile pay, and the anxieties and difficulties that come with volatility. Both men and women expressed anxiety around their volatile pay in our qualitative research and, as set out in more detail in the Annex, Euan’s experience was far from unusual:

[5] C D’Arcy, [Low Pay Britain 2018](#), Resolution Foundation, May 2018

It is just really, really difficult at the moment, more than anything. I mean I've got no choice but to save even if I have a half decent week and it is nothing really amazing I am still finding myself having to really pull back. Because no week is certain at the moment and, you know, some are better than others but it is just more difficult than anything. You really, really have to save.

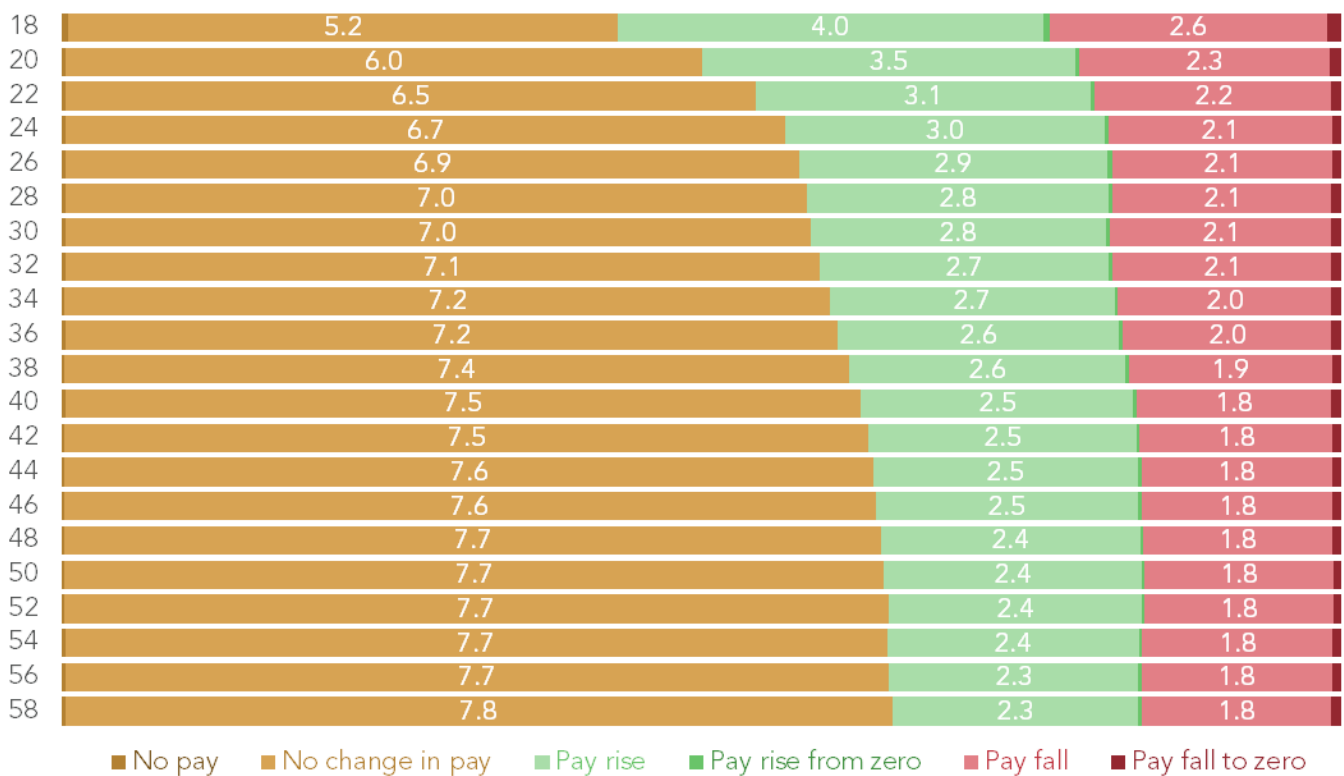
Euan, low earner

Monthly pay increases are more common for younger than older employees, but the young are also more likely to experience volatile pay

Annual pay levels increase sharply in an employee's first few years in the labour market. As previous Resolution Foundation work has shown, young people have a very steep increase in pay during their 20s, after which annual pay increases slow down substantially.^[6] This progression helps explain why monthly pay rises of larger than five per cent are much more common among younger employees than older ones.

Figure 18: Notable pay changes are more common for younger employees, particularly upward changes in pay

Average number of months with different month to month change patterns for employees remaining in work with the same employer: 2016-17



Notes: Changes are defined as taking place whenever the arc percentage change in pay from one month to the next has an absolute value greater than five per cent.
Source: Lloyds Banking Group

[6] L Gardiner & P Gregg, [Study, Work, Progress, Repeat? How and why pay and progression outcomes have differed across cohorts](#), Resolution Foundation, February 2017

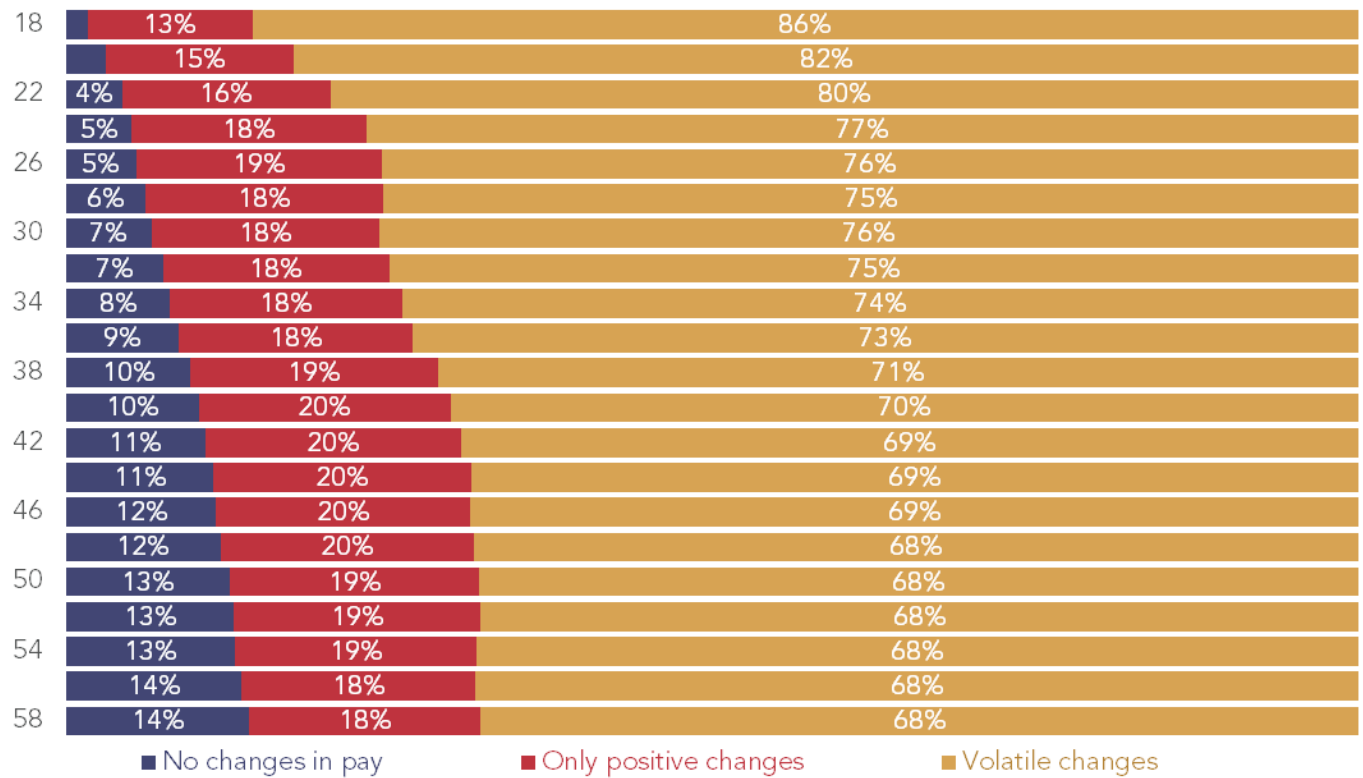
Figure 18 shows the average mix of monthly pay changes over 2016-17 across alternate years in the 18-59 age range for those who remained with the same employer all year. It's clear that positive pay changes were substantially more common for young employees, with an average of 4 months a year with upwards pay changes larger than five per cent recorded for those aged 18, compared to 2.3 months for those aged 58.

Despite the higher prevalence of positive pay changes for young people, it is not the case that there was a high share of young people who *only* experience positive monthly pay changes during 2016-17. Just 13 per cent of 18 year olds who were with the same employer all year had only positive changes, compared to close to 20 per cent of those aged 40-and-above.

This – coupled with the fact that a much lower share of young employees had no notable pay changes over the year – means that younger employees were the most likely to experience volatile pay (to have pay changes other than only pay rises and bonuses), as shown in Figure 19. Over 80 per cent of those aged 22-and-under had volatile pay in 2016-17, compared to under 70 per cent of those aged 40-and-over.

Figure 19: Younger employees are more likely to have volatile pay than older ones

Proportion of employees remaining in work with the same employer, by age and type of pay change: 2016-17

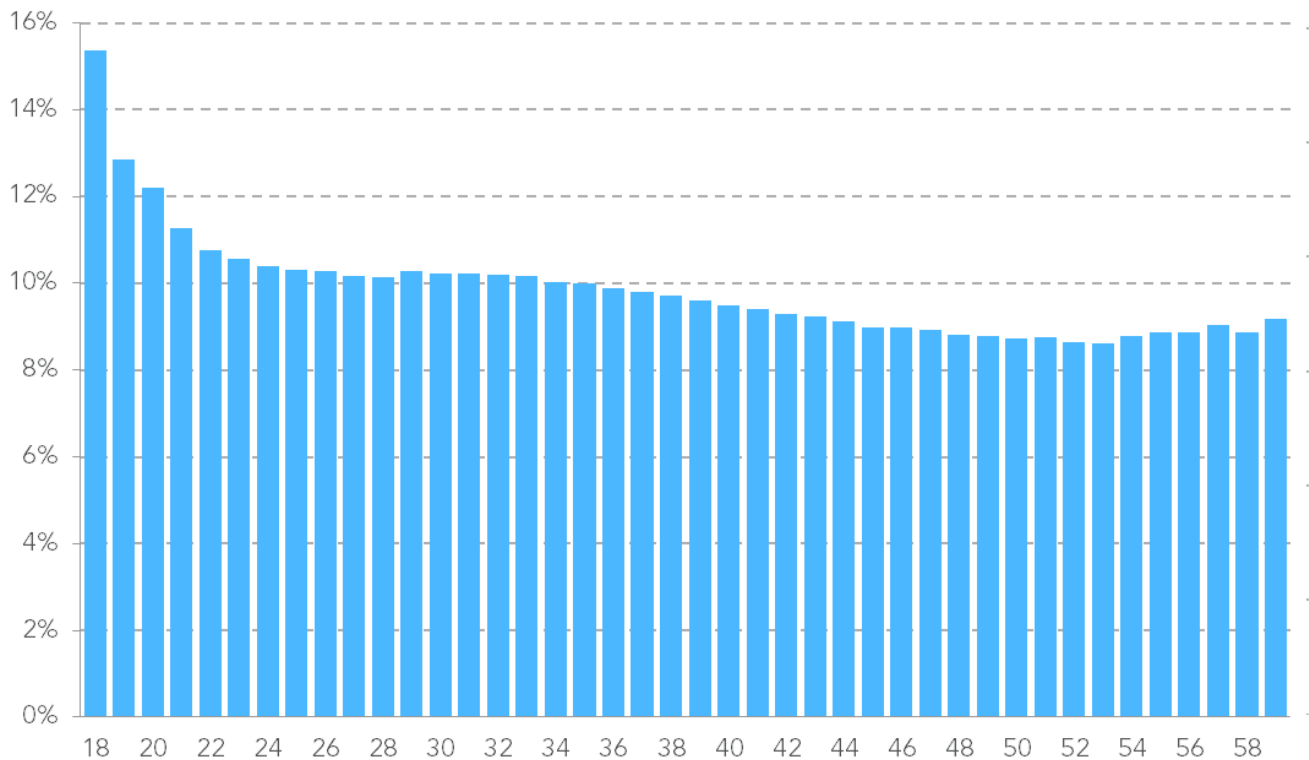


Source: Lloyds Banking Group

Coupled with a greater incidence of pay volatility, the magnitude of average pay changes is larger for the youngest workers. Again focusing on those with a steady job' we find that the average absolute monthly pay change is twice as high for 18 year olds (at 15 per cent) as it is for those in their early 50s (9 per cent). 53 year olds have the lowest average absolute monthly pay change, as can be seen in Figure 20 below.

Figure 20: Pay changes are higher for younger employees than older ones

Average absolute monthly pay changes for employees remaining in work with the same employer, by age: 2016-17



Source: Source: Lloyds Banking Group

These differences across the age range are associated with different earnings levels. Young people are more likely to have lower earnings, something we know from Section 3 is associated with larger monthly pay changes. For example, 18-24 year olds comprise around one-in-five of all employees who had been with the same employer throughout 2016-17 with annual net pay between £5,000 and £15,000, but only 6 per cent of those with annual pay of around £25,000.

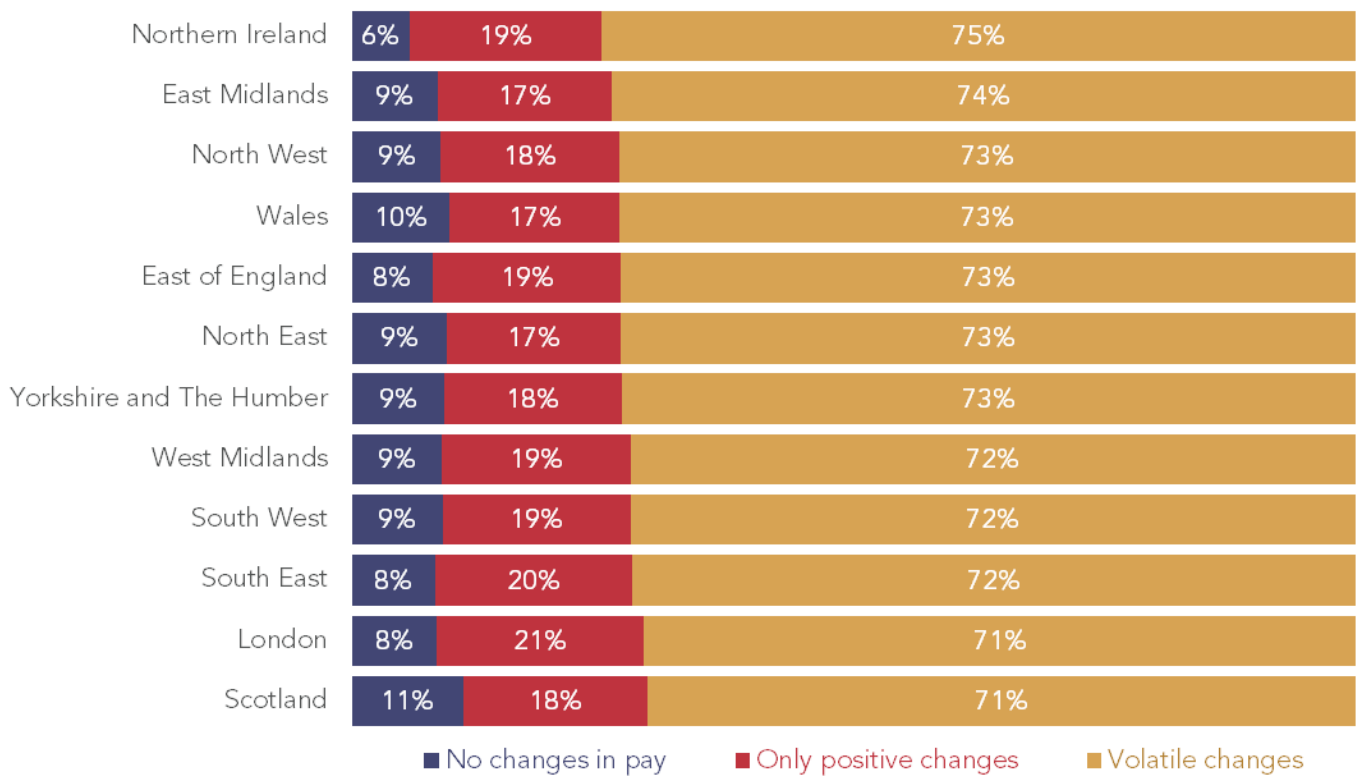
Although it is worth noting that pay doesn't explain away the impact that age has on volatility. Across the pay distribution younger people have higher absolute average monthly pay changes than their older counterparts.

Northern Ireland has the highest incidence of volatility, although it's because its average pay changes are higher in London

Continuing our focus on those who remained with the same employer throughout 2016-17, we now turn to look at differences in the incidence of volatility and size of monthly pay changes between the nations and regions of the UK. We find that Northern Ireland is the part of the UK with the highest incidence of volatile pay changes. As shown in Figure 21, 75 per cent of those living in Northern Ireland had volatile pay (where notable pay changes took place in at least one month, and weren't exclusively positive) compared to closer to 70 per cent of those living in London and Scotland.

Figure 21: Volatile pay is more common in Northern Ireland than elsewhere

Proportion of employees remaining in work with the same employer, by age and type of pay change: 2016-17

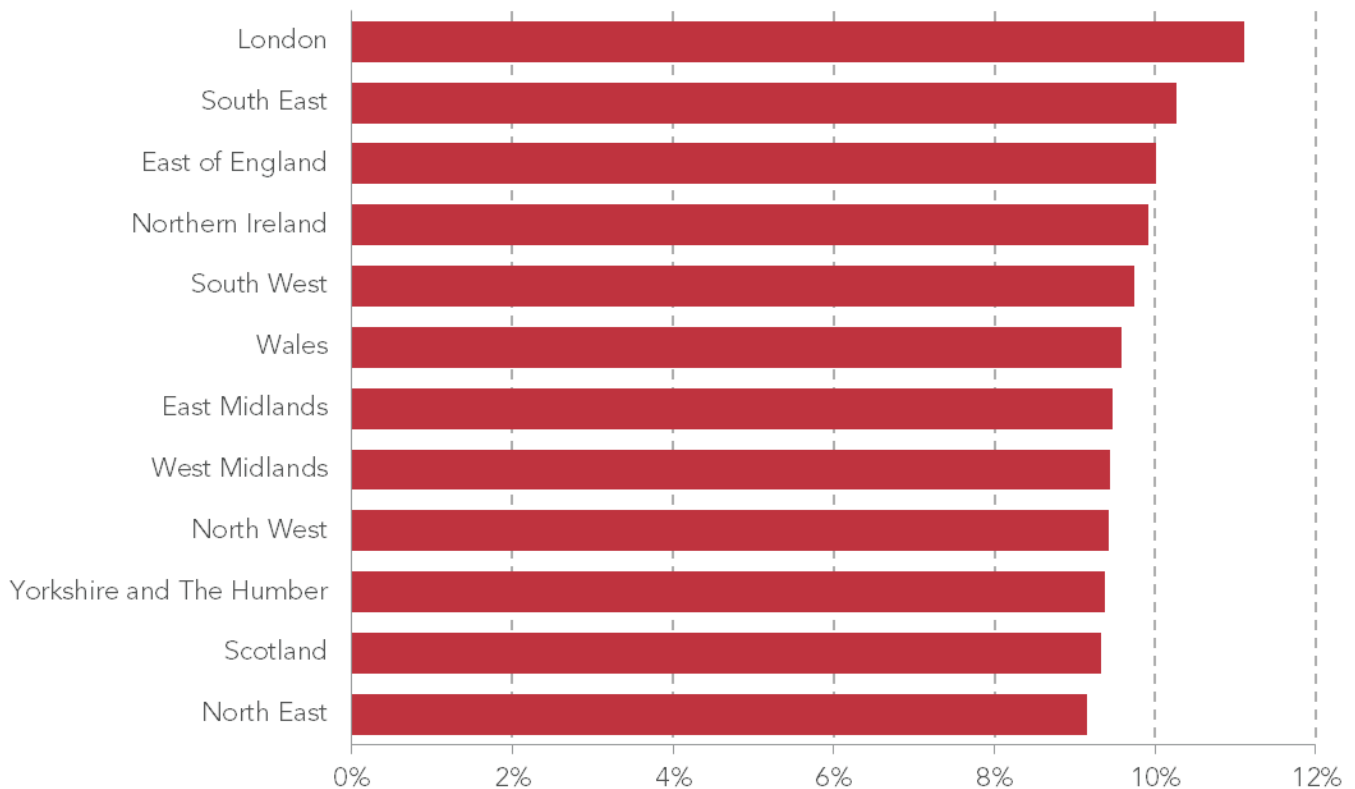


Source: Lloyds Banking Group

Although Northern Ireland has a high incidence of volatile pay changes, it is not the region with the highest average absolute monthly pay change – London is. As illustrated in Figure 22, on average monthly pay changes for those with a steady job throughout 2016-17 and living in London were 11 per cent, slightly higher than in all other regions.

Figure 22: Monthly pay changes are highest in London

Average absolute monthly pay change for employees remaining in work with the same employer, by region: 2016-17



Source: Lloyds Banking Group

Regional differences in pay levels help explain why London has high monthly pay changes at the same time as having a low incidence of volatility. One-in-four Londoners have annual take-home pay greater than £30,000, as do 17 per cent of employees in the South East. In comparison, just 11 per cent of those in the Northern Ireland have annual take-home pay higher than thus amount. This matters because, as shown in Section 3, higher-paid people have larger-than-average monthly pay changes, and are relatively more likely to have positive changes in pay.

Our conclusion, then, is that London's high average monthly pay change is less of a concern than the high incidence of volatility in Northern Ireland. The former is driven by Londoners having relatively high pay and larger pay increases whereas the latter is a product of lower earnings and a high number of pay changes in both directions.

In addition, part of the difference between London and other regions and nations of the UK is that Londoners are more likely to be foreign nationals. Three-in-ten employees in the LBG sample who've been with the same employer all year in London are foreign nationals, a percentage twice as high as in any other region or nation. This is relevant for regional differences because foreign nationals have higher pay changes than average. For example, those with a non-EU nationality have average annual pay changes of 13 per cent, compared to 10 per cent for those with a UK nationality. If we focus exclusively on UK nationals, we find that the gap in the size of average annual pay changes between London and the region with the next highest pay change – the South East – shrinks by a quarter.

Cutting across our analysis of gender, age and region has been the fact that those on lower wages have higher monthly pay changes – and are the group most likely to have volatile pay. It is for this reason that the following section turns to a discussion of the impact of welfare support targeted at those in work on low earnings on pay volatility.

Section 6: Implications for government and employers

Previous sections have demonstrated that the low paid are more likely to experience volatile pay, and have a higher share of notable monthly pay changes that are pay falls than those with higher earnings. The prevalence of such short-term pay falls provides an argument for a responsive welfare system that moderates their impact on personal incomes.

However, there is a direct trade-off between a greater cushioning of pay falls and the provision of greater incentives to take up additional hours and boost pay. UC's relatively high taper rate coupled with its responsiveness to pay changes is in principle good news for its capacity to cushion pay falls. But it may well be the case that these features also act to provide too weak an incentive for taking on additional hours in the short term. This is something the Department for Work and Pensions (DWP) should monitor closely.

Beyond this trade-off there are also specific issues relating to the design of UC's assessment periods that act to somewhat undermine the advantages of a more responsive system. For example the lag between pay dates and the receipt of the associated UC award can act to accentuate volatility. Because of this, and notwithstanding the technical challenge of making changes to UC's design, we believe that DWP should allow individuals already in work to change the start dates of their assessment periods so that they align more closely to pay dates.

Employers should also take action to minimise unwanted instances of volatile pay, for example by reducing the use of zero- and short-hours contracts and providing more notice for shift changes. These important steps should be taken by employers in order to reduce the uncertainty – and associated anxiety – linked to variation in hours and pay.

The prevalence of short-term pay falls among the low paid provides an argument for a more responsive system of in-work support

That monthly variation in pay packets is as high as we have uncovered, and is of greater magnitude for those on lower pay, underscores the importance of a responsive system of in-work financial support. A 21st century social security system should be able to respond to monthly changes in pay. In particular a responsive system should mitigate the impact of short-term falls in pay with timely and proportionate increases in benefit awards.

This responsiveness is one of the principles underlying the move to UC from tax credits. Tax credits are calculated on an annual basis, based on the previous year's declared income. In comparison, UC makes use of Real Time Information (RTI) on individual pay packets in order that payments more closely reflect recent pay. Although the main motivation for a system that makes use of RTI was to reduce overpayment, a responsive system (as UC is designed to be) should also act to cushion the impact of monthly pay falls.

UC is paid on a monthly basis, with the award calculated based on the pay received over the 'assessment period' (the monthly window over which the system collects pay data in order to

determine UC awards). If pay fluctuations occur UC should move in the opposite direction – by an amount determined by the ‘taper rate’. This is the rate at which benefits are withdrawn as pay increases, or increased as pay falls. It is currently set at 63 per cent, meaning that for each £1 of earnings that an individual loses, they can expect their UC award to rise by 63p and therefore their net income to fall by only 37p.

The mechanics of the taper rate coupled with the use of monthly assessment periods, after which UC is paid in line with the amount of pay just received, do hold out the prospect of a system that is better able to mitigate the impact of short-term downwards changes in pay. In theory, UC should reduce the level of monthly personal income fluctuations arising from pay volatility by almost two-thirds relative to the tax credit system in which benefit levels do not respond to changes in pay from month to month. Further still, UC’s responsiveness removes the more significant annual changes in benefit award – coupled with over-payments (and subsequent clawing back of such payments) – that came to characterise the tax credit system.

But there is a clear trade-off between cushioning the impact of pay falls and incentivising pay increases

There is a trade-off, however, between having a benefit system that significantly moderates changes in pay and one that provides strong work incentives. Although lower than the highest taper rates in the tax credit system (in which benefits were sometimes withdrawn at rates close to 100 per cent), the 63 per cent taper is still relatively high. This is good for cushioning the impact of pay falls, but it does mean that questions still remain around UC’s ability to incentivise pay rises and progression in work.

In particular, there is a broader policy question around the way in which the responsive smoothing mechanism of UC coupled with monthly assessment periods could start to put people off taking short-term relatively small boosts to pay (like overtime in the run-up to Christmas). This is because UC claimants will instantly see a fall in their UC just after making the effort to boost their pay.

For example, it’s not clear whether a UC claimant who knew that taking on additional hours of work would result in £20 of take-home pay would decide to do so if they came to learn that this would cause their next UC payment to fall by £12.60. This is different from the tax credit system in which any associated fall in benefit payment wouldn’t take place until the end of the tax year, and might not even take place if the total pay change over the year is lower than the earnings disregard.^[7]

It’s not at all clear, then, that UC’s design is well suited to encouraging individuals to take up additional hours of work in the short-term, something which it would be undoubtedly good to encourage. It’s for this reason that we believe that **the Department for Work and Pensions (DWP) needs to closely monitor the impact of UC with regard to its effect on claimants’ propensity to take short-term boosts in pay.** DWP should consider options for reform if the evidence is clear that UC’s responsiveness is having the unintended consequence of encouraging individuals to hold back from taking on additional hours.

[7] This has been set at various levels, as high as £25,000 in the late 2000s, and is now at £2,500. This means that a family’s income could increase by up to £2,500 during the course of a year without their tax credit award being affected.

Calculating UC on a monthly basis introduces or increases volatility for those paid more frequently than monthly

Beyond the trade-off between incentivising pay increases and cushioning pay falls, there are also specific issues relating to the design of UC's assessment periods that act to somewhat undermine the advantages of a more responsive system. The first issue is that assessment periods are always a month long and yet many recipients are paid more frequently than monthly.

In fact, four-in-ten of those in our sample with clearly identifiable pay packets are paid more often than monthly. Given this, many UC claimants will have benefit awards that are assessed based on a differing number of pay packets in different months.^[8]

Specifically, those paid four-weekly will have one month a year with two pay packets, those paid fortnightly will have two months a year with three pay packets and those paid weekly will have four months each year within which five pay packets are received.

In earlier sections of this report our month to month pay change calculations smoothed out the impact of these variations. We took the view that where less-than-monthly pay is received at regular intervals, any variation in the number of pay packets within a month was more a statistical artefact than 'real' pay volatility.

However, UC doesn't do this smoothing out. Regardless of the interval between pay packets, all individuals have monthly assessment periods. This leads to volatility in personal income (pay and UC combined) even where there is no actual variation in the size of each individual pay packet.^[9] Individuals who are consistently paid the same amount will have variations in their monthly UC for no reason other than their pay periods and UC assessment periods are different lengths.

More specifically, there will be a significant upwards spike in pay in these unusual assessment periods (during which a higher-than-normal number of pay packets are received), leading to a reduction in UC award. As an illustration, consider a single parent living in rented accommodation with take-home pay of £150 per week. In eight months of the year (those with four pay packets within the UC assessment period) she receives £289, in the other four months (with five pay packets) she would receive £193.^[10]

To the extent that it is possible to budget effectively with two major separate (and fluctuating) sources of income, it's true to say that within the window over which individuals plan their finances there will (when UC is lower than normal due to an unusually high number of pay packets) be additional volatility in their personal income. Specifically, there will be a minority of months of the year in which personal incomes will be lower than normal because UC will fall, something which may be particularly difficult for those on lower incomes to manage.

These effects will accentuate any volatility between pay packets for those in receipt of UC who already have some level of pay volatility and who are paid less frequently than monthly. And, in some circumstances, the impact of an unusually high number of pay packets during a monthly assessment period will be that UC falls to zero, which will bring about a significant short-term change in personal income. If this happens, individuals will also have to reapply for UC following the pay spike. Although this is relatively easy to do, it does add an unnecessary complication to

[8] For more detail on the various problems with monthly assessment periods see: J Tucker & D Norris, [Rough Justice: Problems with monthly assessment of pay and circumstances in universal credit, and what can be done about them](#), Child Poverty Action Group, August 2018

[9] These sort of effects need not relate to different pay periods; bank holidays and payroll delays might also be the cause of a higher-than-usual number of pay packets being received in a UC assessment period.

[10] The reduction in her UC award (£94.50) is equal to 63 per cent of her weekly pay (£150), because of UC's 63 per cent taper rate.

the system and means that some individuals may miss out on support if they fail to claim on time.

Even for those paid monthly, time lags between pay dates and UC receipt act to increase volatility in personal income

It's not just those with non-monthly pay periods that UC's assessment periods can work against. Even though assessment periods are monthly, they are not at all aligned to individuals' pay dates. Rather, they are arbitrarily determined by the day on which an individual first applied for UC.

This can lead to higher volatility in personal income (pay and UC combined) than in earnings.^[11] This counter-intuitive effect is best understood through an illustrative example whereby an individual's UC assessment period starts on the 18th of each month with UC paid seven days later on the 25th and pay received on the last Friday of the month.

In such a situation, UC awards will always be paid in line with the pay received in the previous month – February's UC payment will be based on January's pay, and so on. This is a significant time lag. Time lags such as these are not a problem when pay is stable. But where pay varies from month to month it could very well be the case that pay changes are in fact amplified by UC. This means that volatility in personal income (when measured between either over successive pay cycles or calendar months) is higher than volatility of pay alone.

To demonstrate this, we take our example of the person paid on the last Friday of each month but whose UC assessment period starts on the 18th of each month. We assume that they work 16 hours a week at the National Living Wage (NLW, £7.50 an hour in 2017-18) in 'odd' months (January, March, May and so on), and work 20 hours a week at the NLW in 'even' months (February, April, June and so on).^[12] This means that their monthly pay varies by around £130 from each month to the next.^[13]

We can model how the UC system responds to this.^[14] As can be seen in Figure 23 below, the significant lag between pay dates and the date of UC awards acts to mean that high pay (£652) coincides with a high UC award (£337), and low pay (£521) coincides with a low UC award (£255). This means that the variation in personal income (pay plus UC) is £212 a month, significantly higher than the £130 variation in pay.

Of course this is an extreme scenario, but it does clearly illustrate the effect of not linking assessment periods with pay periods. And it could be the case that the lag between pay and UC is even larger – the seven day delay between the end of UC assessment periods and the date on which the associated UC award is paid means that the maximum lag is just over five weeks.

[11] This is also discussed in: Citizens Advice, [Universal Credit and Modern Employment: Non-traditional work](#), April 2018

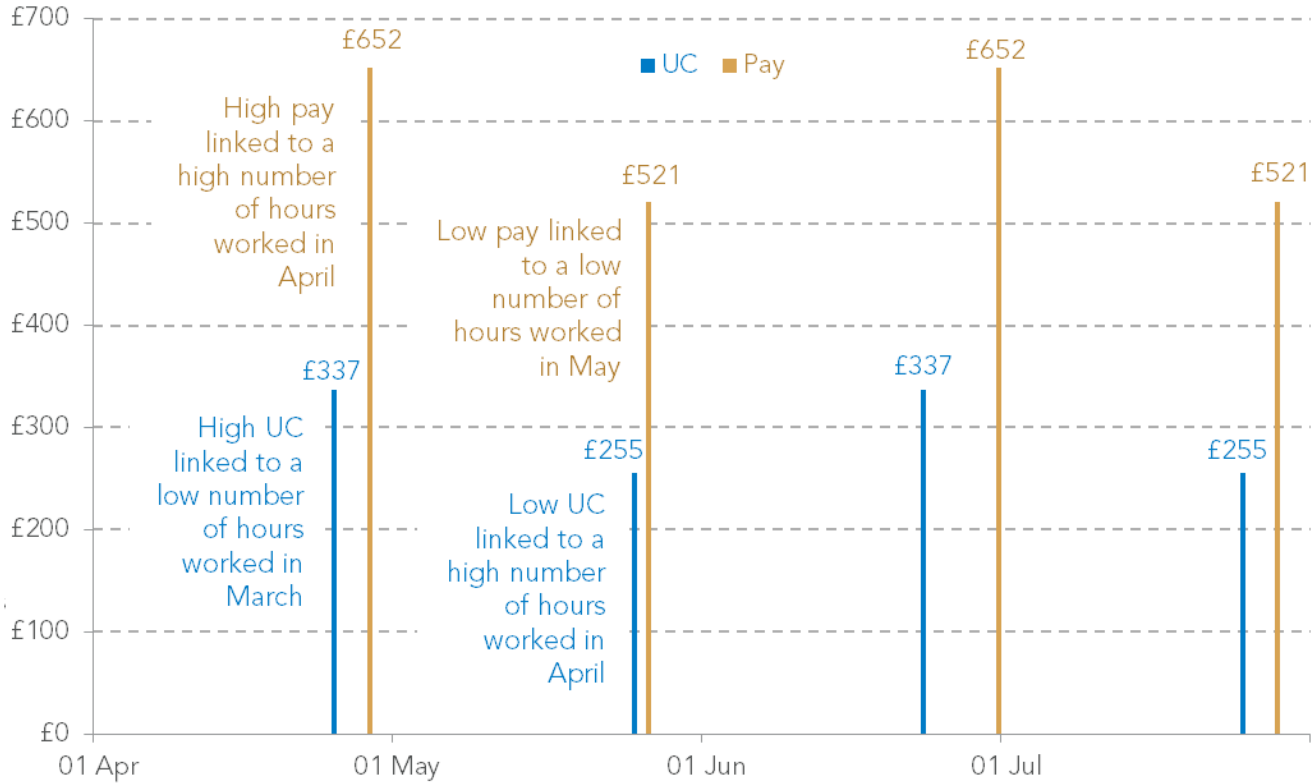
[12] In the 2017-18 tax system someone with this level of annual earnings will not pay any income tax or National Insurance. Their gross pay will be the same as their take home pay with the simplifying assumption that they do not also have other intermediate outgoings, for example a pension.

[13] In this hypothetical example we have adjusted for the way in which longer and shorter months would affect the size of the pay packet received.

[14] We assume that this individual has a work allowance of £192 (the standard work allowance for an adult with a child and who is in receipt of support for their housing costs).

Figure 23: Time lags between pay dates and UC receipt can act to increase volatility

Pay and Universal Credit, illustrative example, 2017-18 UC system



Source: RF analysis

UC recipients in our sample have higher monthly pay changes than they would in a tax credit-like system in which payments are the same in each month

We have analysed the LBG customer account data to determine the effect that the time lag between pay dates and UC award dates has on personal income volatility. We have picked out those individuals already in receipt of UC in 2017-18, and for whom we can be confident that any changes in their UC award are only those resulting from changes in pay.^[15] This excludes the majority of UC claimants, who experience various changes in circumstances over the course of the year, such that a relatively small sample of just 751 individuals remains. Since UC was in the relatively early stages of its roll-out in 2017-18, it is worth highlighting that this sample will not be fully reflective of the typical families that will be on UC when it is fully rolled out.

[15] The date on which Universal Credit is paid into an account is clearly identifiable. We take the typical date in the month on which it is paid for each person and use this to estimate the dates of their assessment period. We then analyse the pay received during this period and keep in our sample all those for whom the only explanation for the variation in their UC award is the variation in their total pay during the relevant assessment period. The continued roll-out of UC means that we have looked here at the 2017-18 tax year (rather than 2016-17 which was our focus in previous sections) in order to have as large a sample as possible.

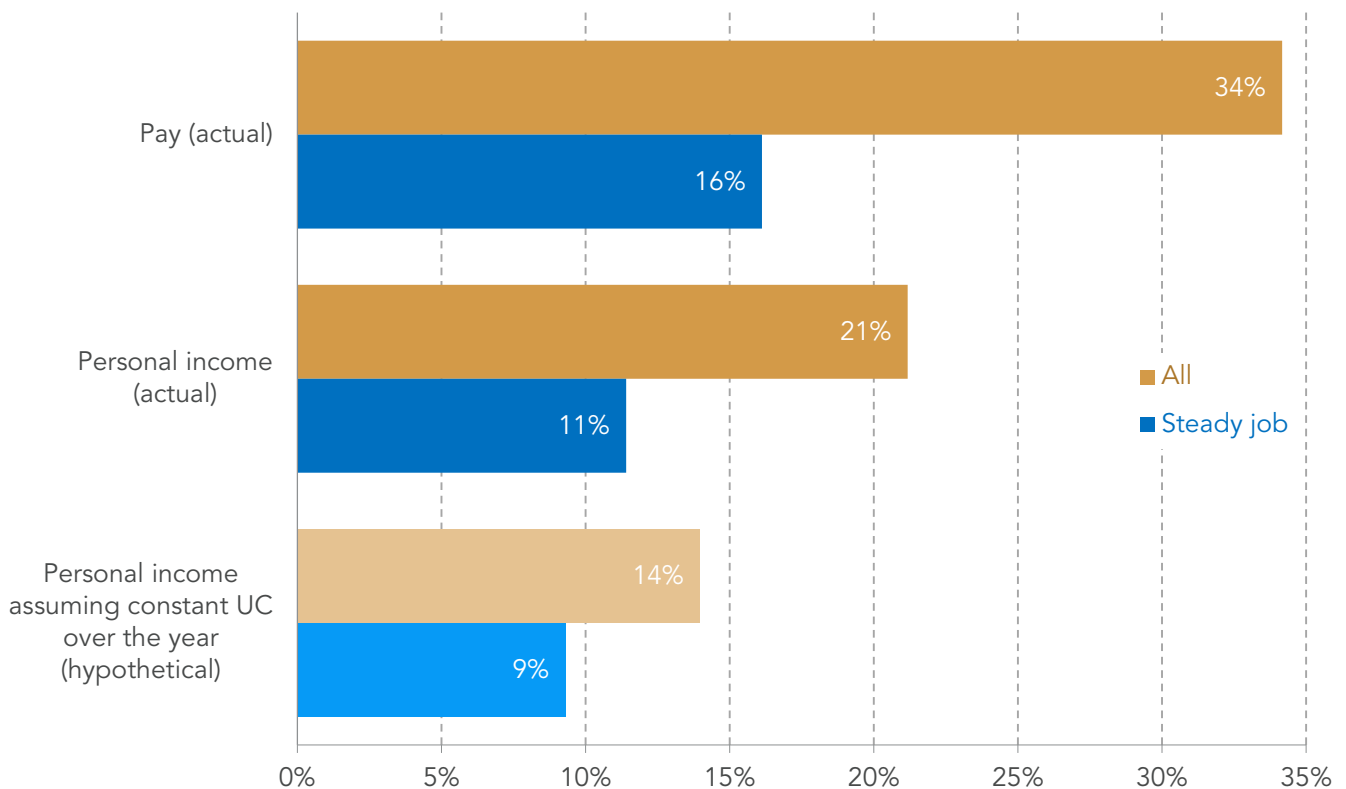
We analyse pay volatility and personal income volatility, and construct a hypothetical scenario in which UC awards are the same in each month (a proxy for a system more akin to tax credits). We look at changes between calendar months. Ideally we would be able to analyse changes between the precise period over which individuals plan their finances, which for many may be tied to pay dates. But since we cannot know this, we use calendar months as a proxy. This, of course, has limitations. As discussed above, forty per cent of those in our sample are not paid monthly. But still, given that many outgoings from bank accounts – from phone bills to rent – are monthly, and that being paid towards the end of the month is a common experience, we take the view that calendar months are a reasonable window over which to measure the lived experience of changes in pay and personal income.

As in earlier sections of this report, our focus is on the average absolute monthly change in pay calculated using arc percentage changes. However, in line with how UC treats non-monthly payments, we do not adjust pay to take account of non-monthly pay patterns in the way that we did in previous sections (see Box 1 in Section 3 for details).

The top pair of bars in Figure 24 show the extent of pay changes for our whole UC sample, and just for those who kept the same employer throughout the year (those with a ‘steady job’). The steady job group has an average absolute monthly change in pay of 16 per cent, with the overall average across all employees in our UC sample being much higher, at 34 per cent.

Figure 24: Monthly changes in personal income for those with UC payments are lower than changes in pay, but higher than if UC was constant over the year

Average absolute change in monthly pay and personal income for employees in receipt of UC and experiencing no non-pay-related changes in circumstances: 2017-18



Source: Lloyds Banking Group

The size of the average monthly pay change for all employees is notably higher than the averages presented in earlier sections of this report. This is for a number of reasons. First, those on UC are lower paid than most and so are likely to have large changes in monthly pay (as discussed in Section 4). Second, we include here the impact of moves in and out of work.^[16] Third, and as mentioned above, we are not smoothing out jumps in pay arising from non-monthly pay periods, which acts to boost the average pay change relative to analysis in previous sections that corrected for these effects.

The second pair of bars in Figure 24 shows the size of the monthly change in personal income (pay and UC combined). As we might expect given UC's design, monthly changes in personal income are lower than monthly changes in pay – at 21 per cent across all employees in receipt of UC in our sample, and 11 per cent for those in the steady job group.

This is a significant reduction and does show the moderating force of UC on changes in pay. However, we can compare these averages to those in a hypothetical scenario in which the same amount of UC is received over the course of the year, but spread evenly between each reference month. In this hypothetical scenario the average absolute monthly change in personal income is actually lower than the reality under UC. Monthly changes in personal income in this scenario have an absolute average change of 9 per cent for those in the 'steady job' group, and 14 per cent on average across all employees.

This implies that the gains (in terms of the moderating force that UC has on pay changes) from a more responsive system are undermined by the drawbacks of assessment periods running between dates that are in no way linked to the dates on which pay is received. The time lags this creates for many UC claimants look to be having an upward effect on monthly changes in personal income that act in the opposite direction to the downward effect of a more responsive system. There are a number of advantages to the design of UC relative to tax credits, but this analysis casts doubt on the ability of the system in practice to minimise pay fluctuations relative to a situation in which benefits are unresponsive to pay changes.

Beyond an analytical understanding of differences in volatility under different welfare systems, participants in our qualitative research also spoke positively of the experience of the steady income stream they'd grown used to in the tax credits system. For those with volatile pay, the benefit of having at least one source of income that was reliably received at a particular level was clear:

[Benefits] helped. That was like a guaranteed income so even though my wages are - I never know how much I'm going to get, because I don't know how many shifts I'm going to do in a month, the working families tax credit and child benefit, that was always guaranteed. Like, every Tuesday, I'd get my £20 child benefit.

Clare, low earner

[16] Our method of calculating pay changes – arc percentage changes – measures moves into work as a 200 per cent increase in pay, and moves out of work as a 200 fall in pay. See Box 1 in Section 3 for details of this calculation.

Policy makers and employers should take the challenge of fluctuating payments more seriously

Taken together, the evidence presented here suggests that assessment periods should be reformed in order to make UC work better. Taking these findings seriously would involve making changes to the assessment period system that reduced the prevalence, and extent, of lags between pay receipt and benefit receipt.

It is possible to reform UC to reduce this problem, and allow the benefits of a more responsive system of in-work support to be felt. It is for this reason that we propose that **the Department for Work and Pensions should grant individuals already in work the flexibility to move their assessment period in order that it better reflects the dates on which they are paid.** For example, for those paid monthly, being able to end their assessment period on the date of each month on which they are paid would bring the effect of time lags in payment described above to an absolute minimum.

The ideal time for designing this flexibility into the system has undoubtedly long passed and, given the current pace of roll out, it wouldn't be wise to try and implement such a reform immediately. That said, if roll out were to be paused the implementation of this change to assessment periods should be considered.

Further, as discussed in the beginning of this section, monthly assessment periods are clearly not ideal for those who are paid more frequently than monthly. In fact, a rigid adherence to monthly assessment periods means that volatility in personal incomes can arise even where there is no pay volatility. However, these are a core part of UC's design and making changes to assessment periods would be a significant technical challenge. Further, reducing their length may only act to increase volatility, making planning and budgeting even more difficult for those with volatile pay. Given this, **it's crucial that DWP investigates the impact of more-than-monthly pay packets on volatility and living standards.**

The implications of our findings extend beyond the design of the in-work benefit system. As discussed in previous sections, there are many 'good news' reasons for large pay changes – from promotions to bonuses – and of course these should be encouraged. However, pay falls from month to month – particularly unexpected ones – are something that should be avoided. This is particularly the case for those on the lowest wages for whom planning and budgeting around sharp swings in monthly pay can be more of a challenge. This challenge is something employers and government should consider seriously.

The Resolution Foundation has previously proposed that those working on zero-hours contracts should be given the right to move onto a contract offering regular hours after three months with the same employer.^[17] This would not only provide support in terms of earnings levels, but is also highly likely to lead to lower short-term pay variations. If the government is not intending to legislate for this, businesses could proactively offer contracts more reflective of typical hours to their zero-hours contract workers.

In addition, there's also scope for employers to offer more certainty and stability in hours to all employees. Rather than employing staff on short-hours contracts with extensive use of overtime as and when needed, employers could choose to increase basic hours for their staff. As the Living Wage Foundation has highlighted, there are benefits from such an approach for employees – who have more stability in terms of their pay packets – and for employers, for whom gains from better

[17] Resolution Foundation, [Work in Brexit Britain: reshaping the nations labour market](#), July 2017

Section 7: Conclusion

The findings set out in this report shed new light on the lived experience of work in the UK today. Not only does pay fluctuate on an annual basis, but there is a high level of variation in pay between months of the year.

In the main, we've focused on those who remained in work throughout the year in order to remove the effect of pay variation driven by job moves or entry and exit. We've shown that four-in-ten of these employees experienced a notable change in their monthly pay in more than six months of the year in 2016-17, and that over 80 per cent of those on low earnings experienced volatile pay compared to two-in-three of those on higher earnings.

We've highlighted here the differences between ages (the young have higher average month to month pay changes than the old), across genders (although similar overall, it's clear that low-paid men have greater monthly pay changes than low-paid women) and between regions of the UK too.

This research underlines the usefulness of data sources that allow a more detailed understanding of the UK labour market than is currently provided by annual survey data. There is clearly a need for more research collaborations such as the one that has enabled the production of this report, and for the government to open up the use of administrative data to researchers in order to uncover more hidden truths about the workings of our labour market – and our welfare system.

And, clearly, beyond the issues relating to the cuts in generosity of UC (of which we have spoken about in detail elsewhere), there is a need for a reconsideration of the mechanics of the UC system so that it can better support those with volatile earnings.

In principle, a more responsive system should help smooth fluctuations in pay, but the inflexible design of assessment periods acts to somewhat undermine these gains for those not lucky enough to be paid on a monthly basis at the end of their assessment periods. Changes to the current system should be made to improve its effectiveness both for those already claiming the benefit and for the thousands of people about to be moved onto UC.

Annex

To complement the novel analysis of monthly pay changes documented in detail in the main sections of this report, Ipsos MORI conducted a series of focus groups in late 2017 with employees with volatile pay. The objective was to find out more about the differing experiences of changing monthly pay, with a particular focus on the lived experience of volatility for those in non-standard forms of employment.

Focus group participants were drawn from a variety of different backgrounds, including some with higher earnings and some on lower earnings. Across the 20 participants, 11 were women and 9 were men; the majority of participants were under 30 years old; and there was a mixture of individuals with and without children.

Overall, we found that those with higher earnings had generally positive feelings about the volatility that they experienced. For those with higher pay, many of whom worked in sales, volatility was often experienced in the form of performance related pay and – in line with our quantitative findings – was more likely to involve a positive than a negative change in pay.

Higher earners could rely on a baseline in pay sufficient to cover the costs of their spending, and so were much more likely to see changes in a positive fashion. For example, James^[21] spoke of how his pay volatility was the thing that energised him in his work:

Sales is you get from it what you put into it and I think there are a lot of jobs out there where you just have a basic salary and you just clock in and out and just do the job. I think with sales you are actually rewarded for how hard you work financially. I think with other jobs you can work really hard but not necessarily see the rewards.

James, high earner

In a similar vein, Carrie spoke positively of volatility – higher commission was a cause for celebration:

My commission comes a month in lieu, so if I know I am getting a bigger commission I have already planned the restaurant I am going to go to and celebrate. I have already spent it before I have got it.

Carrie, high earner

[21] Names of all participants have been changed.

Part of the reason for higher earners actually favouring volatile pay over stable pay was that their volatility was less likely to come with the downside of severe uncertainty. Carrie, for example, knew one month in advance what level of commission she would be receiving.

In contrast, those on low earnings often cited the uncertainty associated with volatility as the reason for preferring more stability in their monthly pay. This uncertainty comes in various

forms. For example, some on flexible contracts felt that the lack of notice given around their shift patterns inhibited their ability to plan their day-to-day lives. This hours volatility, which feeds through into pay volatility, appeared particularly acute for those working on zero-hours contracts, such as Jasmine and Hamida:

I'd love set hours so that I could plan my life properly because not knowing what hours I've got, and not knowing if I need to work at the restaurant some weekends... I can't make plans weeks in advance because I don't know what money I'll have and I don't know what I'm going to be working. I can get given a shift the night before or the same day, just have to cancel plans. And it's just really unsteady not knowing what I can do or whether I can go away for the weekend...I find it really difficult to timetable my life around work. Because I just can't say no to work because I feel if I say no, then they won't offer me shifts in the future and then I do need the shifts.

Jasmine, low earner

I don't like zero-hours contracts. Because you don't know whether you're going to be making the same income every month or even weekly to be honest. I get called in when they need me....That's the only problem I have, is worrying about when I am going to work....Just sitting by my phone waiting for them to call.

Hamida, low earner

The problem for those with this acute level of hours volatility is that they are also likely to be those earning the least, and so have little savings to fall back on when pay is lower than expected. This adds up to a stressful and anxious relationship with work and money. Take Euan and Matt, who are paid weekly. The uncertainty in their pay levels from week to week, coupled with a lack of savings, means that budgeting over the course of the month in order to pay bills is far from easy:

It is just really, really difficult at the moment, more than anything. I mean I've got no choice but to save even if I have a half decent week and it is nothing really amazing I am still finding myself having to really pull back. Because no week is certain at the moment and, you know, some are better than others but it is just more difficult than anything. You really, really have to save.

Euan, low earner

It is stressful. There is a bit of anxiety, with me, like not exactly in the same way but I end up in a situation where if decent jobs come in and I know in the next few weeks I will probably get a bit of money together I find I am spending it before it has come in. Then the moment I know it is all bleak

and there is nothing, there is no new work out there really...it is very stressful, a lot of anxiety.

Matt, low earner

Those with no savings often spoke of needing to turn to friends or family for financial support in the weeks in which pay fell below what was required to pay for essentials. Hamida spoke of how in the bad weeks with a small number of shifts she'd find herself running up debts:

Sometimes they might give me three shifts a week, sometimes they might give me five or six shifts a week. Yeah, it all just depends on how the staffing is and if there's holidays, if people are sick. On a crap week, I get three shifts and I live off my credit card. On a good week, I can live out of my debit card.

Hamida, low earner

Most of those on low earnings said they would prefer lower volatility. For Matt, having steady pay would make planning easier – and reduce financial anxieties.

If it is constant when you are earning you kind of have a rough idea, you can plan ahead...the anxiety levels are down. When you start thinking about borrowing money, pay day loans, money advances, putting it back to next month, when you don't know where you stand and it is already a very low level...you start losing sleep at night really.

Matt, low earner

Similarly, for others, including Alex, having a steady income was perceived as something that would help with planning and budgeting in order to be able to pay bills:

It would be my safety net because I would know week to week, right that can be paid then, that can be paid then. I would be putting all the bills in my calendar so I would definitely be able to pay.

Alex, low earner

Although the overall problem of low wages was dominant for some:

[Getting rid of fluctuations in pay wouldn't help] because if I do 20 hours a week, if I do 25 hours a week I'm still in a minus, so it makes no difference.

Kelly, low earner

Although almost all of the low-earning participants in the focus groups expressed strongly negative feelings towards their pay volatility, this view wasn't entirely uniform. Jacob, for

example, didn't mind "going with the flow":

I mean me personally, I've had to learn to be super fluid, like super flexible kind of thing. And it's a skill I've learnt you know like alright, I'll got to work today, no I don't fancy it today. Every day is like a challenge kind of thing to assess if I'm going to be able to work. I'm always kind of craving some kind of certainty but this has been a good life skill to deal with uncertainty and to live in a constant state of flux. So you know I'm going with the flow, so to speak.

Jacob, low earner

One participant, Clare, mentioned how the steady nature of her benefit income was helpful in so far as it could be relied upon to be paid regularly and at the same level. At least one of her main sources of income wasn't fluctuating from month to month:

[Benefits] helped. That was like a guaranteed income so even though my wages are, I never know how much I'm going to get, because I don't know how many shifts I'm going to do in a month, the working families tax credit and child benefit, that was always guaranteed like every Tuesday, I'd get my £20 child benefit.

Clare, low earner

Overall, the discussions brought home how the experience of volatility was closely bound up with earnings levels. Those with lower pay and savings found volatility significantly more difficult to manage than those on middle and higher earnings. Attitudes towards volatility were well-aligned with the quantitative research finding that lower earners had relatively more downwards changes than upwards changes in pay. The uncertainty associated with these changes – particularly the negative ones – came through as one of the primary reasons why volatility was something that those on lower earnings wanted to have less of in their working lives.

workforce retention may result.^[18]

In some circumstances, business demands may necessitate flexible working arrangements, but as far as possible more advanced notice around fluctuations in hours should also be given. As our qualitative research found (see Annex), it's the uncertainty associated with volatile pay that is a big part of why employees – particularly those on low wages – wanted greater stability; take Jasmine's experience for example:

I'd love set hours so that I could plan my life properly because not knowing what hours I've got and not knowing if I need to work at the restaurant some weekends...I can't make plans weeks in advance because I don't know what money I'll have and I don't know what I'm going to be working. I can get given a shift the night before or the same day, just have to cancel plans...I find it really difficult to timetable my life around work.

Jasmine, low earner

Greater stability has been achieved via legislation in some parts of the world. For example, in New York City new rules have been brought in requiring restaurants to agree schedules more than two weeks in advance with employees, or have to pay higher pay rates to compensate.^[19] The UK government is likely to come forward with its proposals following on from the Taylor Review before the end of this year, and should seriously consider Matthew Taylor's recommendation for an overtime premium.^[20] Employers, though, could act of their own volition to provide more notice for changes to shift patterns and hours of work.

[18] Living Wage Foundation, [The Living Wage Foundation's 'good jobs in retail' project](#), July 2016

[19] P Szekely, ['Not so fast: U.S. restaurant workers seek ban on surprise scheduling'](#), Reuters, 17 July 2017

[20] [Good Work: The Taylor Review of Modern Working Practices](#), July 2017

Resolution Foundation

Resolution Foundation is an independent research and policy organisation. Our goal is to improve the lives of people with low to middle incomes by delivering change in areas where they are currently disadvantaged. We do this by:

- » *undertaking research and economic analysis to understand the challenges facing people on a low to middle income;*
- » *developing practical and effective policy proposals; and*
- » *engaging with policy makers and stakeholders to influence decision-making and bring about change.*

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