

Inflation and pay setting: a paper for ECC members

February 2019

This report has been produced by Incomes Data Research Limited for the Educational Competencies Consortium (ECC). It is for use as an internal resource for ECC members only. No part of this report may be reproduced, shared or distributed without consent from Incomes Data Research.

Correspondence address: Incomes Data Research, The Studio, The Old Gasworks, 43 Progress Road, Leigh on Sea, Essex SS9 5PR

t: +44 (0) 1702 669549

e: enquiries@incomesdataresearch.co.uk

w: incomesdataresearch.co.uk

© Incomes Data Research 2019

Incomes Data Research Limited. Company No. 09327550. Registered in England & Wales.
Registered address: 71-75 Shelton Street, London WC2H 9JQ

1 INTRODUCTION

Since the cost of securing the conditions of life generally rises, apart from during recessions, employers and employees alike have an interest in ensuring that wages are set at a level that enables workers to meet these costs in a socially acceptable way, to the extent that other conditions allow. As a result, measures of price inflation (which act as proxies for the cost of living) remain an important input into wage-setting decisions. This is particularly in respect of annual pay reviews, alongside assessments of affordability, labour market pressures and indications of the going rate for pay increases in the relevant sector or sectors.

2 MEASURES OF INFLATION

Importantly, inflation is a latent variable, which is another way of saying that it is not possible (in any practical sense) to observe it directly. Instead it is inferred via mathematical models, and these present different choices when it comes to measuring inflation. This was highlighted in a recent legal case involving the BT pension scheme, which also has implications for pay-setting. The company had argued that it should be allowed to change provisions for uprating pension payments from the Retail Prices Index (RPI) to the Consumer Prices Index (CPI), on the basis that the former had 'become inappropriate', according to the rules of the scheme. This was opposed by the scheme's members.

On the face of it, BT seemed to have a strong case. The company cited a number of recent developments, including RPI's de-designation as a 'national statistic' and the fact that RPI has been superseded by CPI in a number of instances. However, the High Court concluded that RPI had **not** 'become inappropriate' for the purpose of uprating pensions. The judge based his ruling on the material risk that moving to CPI could mean that increases in pensions for those covered by the BT scheme would not keep up with increases in the cost of living. This is because CPI has been lower than RPI for nine of the past 10 years, and its use would be likely to produce a reduction in scheme members' benefits.

The case highlighted how the CPI can underestimate inflation as well as how the RPI can overestimate it, mainly as a result of differences in the different indices' respective formulas for calculating inflation rates (see below). Referring to the fact that inflation is a latent variable, the judge said: 'any index [of inflation] can do no more than provide an estimate of the increase in cost of living as experienced by any given household...it is impossible to say that RPI is wrong and CPI is right, or even that RPI is more wrong (or right) than CPI...' The court ruling also referred to the fact that the government picks and chooses from the indices, depending

on its purpose. It uses the CPI for outgoings, such as benefits and state pensions, but when it seeks to raise revenue, for example via tax duties or student loans, the RPI is preferred. (The exception here is income tax thresholds and allowances, uprating of which was switched from the RPI to the CPI in 2014.) And changes in indirect taxes such as rail fares and water charges are also based on the RPI.

This case shows there is not necessarily one best measure for indicating how inflation might be taking place and the rate at which it might be increasing. Issues include what items to include in the 'basket' of goods/services for measurement of changes, and how to calculate the rate of change. Because all measures of inflation attempt to arrive at an **average**, or mean, representation of the rate of change, the question of the mathematical formula used becomes important. Indeed, the various official measures of inflation in the UK differ in this respect, as well as in terms of what items of expenditure they cover. We consider each of the official measures in turn below.

CPI – this is the Government's main measure of inflation for macroeconomic management purposes and as such it currently acts as the Bank of England's target for inflation in its interest rate-setting role; it was introduced comparatively recently, in 2003, apparently as a way of comparing inflation in the UK with inflation rates in other EU countries (its previous name – the Harmonised Index of Consumer Inflation, or HCIP – reflected this), though in fact most EU countries retain their own national consumer price indices as primary indicators of inflation and for uprating purposes; its basket includes a number of items that are excluded from the RPI, for example university accommodation fees and foreign students' tuition fees; the main omission is housing costs, particularly in the form of mortgage interest payments, but also other items; other notable omissions from the CPI basket include council tax; since 2011 it has been used for the uprating of state benefits and pensions; and since 2014 for personal tax allowances and thresholds; it calculates inflation mainly on the basis of the Jevons formula (see below) and tends to be the figure used by the media in their reporting of inflation which, along with other factors – chiefly the fact that it is generally lower than the RPI, in a lengthy post-recession period when affordability has weighed heavier in the balance for employers – has made for a rise in its popularity as an indicator for pay-setting purposes; whether in fact it is suitable for this is something we consider later.

CPIH – this is the Office for National Statistics' headline measure of inflation in its monthly releases on the topic; the 'H' stands for housing; it was developed and launched in 2013 in response to the main shortcoming of CPI, that it doesn't include a measure of housing costs; the CPIH, by contrast, measures housing costs on the basis of rental equivalence – this means

it uses the rent paid for an equivalent house as a proxy for an owner-occupier's housing costs, and as such it does not capture house prices; it also calculates inflation mainly on the basis of the Jevons formula (see below); despite it being the ONS' headline measure, it is largely ignored by the media in their reporting of inflation statistics; we're not certain why this is the case, but it may be that journalists either don't understand the differences between the different measures of inflation, do not wish to stray into a discussion of the differences or, given the CPI's role in macroeconomic management, default to this as the seemingly sole indicator; the lack of media prominence may be a reason why, despite its inclusion of an estimate of housing costs, the CPIH is rarely used as an inflation indicator for pay-setting purposes.

RPI – this is the oldest measure of inflation, dating back to at least 1947; it is often referred to as the 'all-items' measure of inflation, since it aims to include a comprehensive list of areas of expenditure in its basket of goods and services; as such, it contains a number of items that are excluded from the CPI and CPIH, including council tax¹, mortgage interest payments, house depreciation, buildings insurance, ground rent and other house purchase costs such as estate agents' and conveyancing fees; when it comes to calculating inflation it uses an equal combination of the Carli, Dutot and other formulas (see below); the ONS continues to publish the RPI but has said it is no longer a 'national statistic', mainly because the ONS considers that the Carli formula leads it to overestimate inflation (we discuss this in more detail below); it continues to publish the RPI in part because of its role in uprating a long list of statutory items, including business tax rates, vehicle excise duty, fuel duty, duty on alcohol and tobacco, car and van fuel benefit and water charges; the RPI is also used for valuing index-linked Government bonds; the fact that it covers 'all items', especially house prices, and is used for uprating the list of items mentioned above are central explanations for its continued prominent role in pay-setting.

¹ Which is include in the CPIH but not the CPI.

	CPI	vs.	RPI
Population	All private households		Excludes top 4% and pensioners
Coverage	Excludes housing costs, council tax		Excludes university fees, unit trust and stockbrokers charges
Commodity measuring	Purchases of goods and services in national accounts		Based on data from living costs and food survey
Rounding	Unrounded indices		Rounded indices
Formula	Geometric mean		Arithmetic mean
Coding	Based on national accounts		Long standing classification unique to UK
Geography	Expenditure by foreign visitors in UK		Excludes expenditure by foreign visitors to UK
Governance	EU regulations		Statistics and Registration Services Act 2007

3 THE FORMULA DEBATE

There is an ongoing debate among statisticians about which measure of inflation is the best for measuring changes in the costs faced by households. A large part of this debate hinges on the different mathematical formulas used in the different measures of inflation. The Jevons formula uses calculates a geometric mean while the Carli formula calculates a more traditional arithmetic mean. The principal difference between the two calculations is that under the geometric mean larger increases in prices of individual items are suppressed. Unlike the ONS in the UK, the official statistical bodies in both Germany and Switzerland use the arithmetic mean to calculate price movements. They also expend significant resources in the collection of prices and have a highly developed weighting mechanism for not just particular product types or services but by particular types of the same product or service and by type of supplier as well e.g. large national chain versus local supplier.

In the UK, the House of Lords recently conducted an inquiry into the uses of RPI (more on which below). One of the topics on which it heard evidence was the 'formula effect'. This is the estimated difference between the CPI and RPI rates and is due to the different formulas used in each measure. The CPI uses the Jevons formula, named after the person that first developed it, while the RPI uses the Carli formula.

While the formulas are not the only reason for the difference in the rates shown by the two measures, they are often the largest element in a gap which has generally been in one direction – with the CPI consistently lower than the RPI. This is to do with the different types of arithmetical means used in each of the formulas. In addition, a recent methodological change by the ONS produced a widening of the gap. This change was the broadening of the range of clothing for which prices were collected. This produced price data which, when combined with the Carli formula, led to a substantial increase in the annual rate of growth of RPI. This had the effect of somewhat discrediting the RPI, particularly in the opinion of the ONS. And it has had real effects, since a number of important items continue to be uprated using the RPI, with a consequent impact on consumers. But the debate over the suitability of the different indexes has continued, since many users of the RPI feel it to be a more representative index than the CPI, chiefly because it reflects housing costs.

The future

IDR reports on the CPIH, CPI and RPI measures of inflation as part of our service to pay practitioners. We also survey them annually on their use of the respective statistics (see below). But what is the future for each of the measures? The fact that the CPI excludes

housing costs means that its use in uprating pay and benefits can feel unfair. The CPIH clearly represents an improvement in this regard. However, the rental equivalence approach has been criticised, on the grounds that owner-occupiers, by definition, do not pay rent, and therefore the CPIH indicator is failing to adequately measure changes in housing costs.

In addition, statisticians associated with the Royal Statistical Society have pointed out that the CPI and its variants, since they were designed for macroeconomic purposes, do not function as measures of inflation that are experienced and perceived as such by households in their role as consumers. In line with this, they have proposed the development of a Household Inflation Index, different in several respects from the CPI/CPIH, that would remedy this shortcoming. As they highlight, their proposed measure's ancestry can be traced back to the RPI and is a 'return to the general principles underlying the RPI'.²

The ONS has responded to these developments by embarking on a programme of developing Household Costs Indices, initially as a complement to the existing suite of consumer price indices. Instead of a single index, though, based on costs for a 'typical' household, the ONS publishes the indices, which remain experimental, for different households – retired households, non-retired households, households with children and households without children. As such, the indices are unlikely to soon replace the current statistics in public usage.³

On the RPI, the recent House of Lords inquiry into its use found that despite the UK Statistics Authority (which oversees the work of the ONS in this respect) advocating against the use of the RPI, it remains in widespread use – for uprating corporate bonds, Government index-linked gilts, private sector pensions and in pay-setting, as well as the other uses referred to above. However, the Lords' Economic Affairs Committee considers that the Authority's position is untenable. It says: 'the Authority should stop treating RPI as a legacy measure and resume a programme of periodic methodological improvements [to it].' In addition, the Committee goes on to state that once the issue of how to capture owner-occupier housing costs has been settled, there should be a single general measure of inflation, to avoid 'index-shopping' and provide consumer and user confidence in this important economic statistic.⁴ The Lords think that this should be introduced within five years.

² 'Towards a household inflation index: compiling a consumer price index with public credibility', John Astin and Jill Leyland. See <https://www.rss.org.uk/Images/PDF/publications/Astin-Leyland-HII-paper-Apr-2015.pdf>

³ For more details see <https://www.ons.gov.uk/economy/inflationandpriceindices/bulletins/householdcostsindices/preliminaryestimates2005to2017>

⁴ For details see the inquiry report here: <https://www.parliament.uk/the-use-of-rpi>

4 FORECASTING INFLATION

Because of the importance of inflation as an economic indicator, economists in various institutions regularly produce forecasts of the figures. City banks and firms involved in financial markets produce regular monthly forecasts, while less frequent predictions are produced by the Bank of England and the Office for Budgetary Responsibility (OBR), both quarterly. Other organisations producing forecasts at greater-than-monthly intervals include Ernst and Young's 'ITEM' club, so-called because it is the only non-governmental economic forecasting group to use the Treasury's model of the UK economy (the acronym stands for 'Independent Treasury Economic Model'), and the National Institute for Economic and Social Research (NIESR). The Treasury produces a monthly round-up of independent institutions' predictions, though it aggregates the inflation forecasts on a quarterly basis. Most of our panel appear in the Treasury's list of independent forecasters.

Because the City economists produce monthly forecasts, IDR regularly surveys a panel of institutions and reports their predictions to our customers. The panel includes such organisations as Capital Economics, Deutsche Bank, JP Morgan, Lloyds Banking Group, NatWest Markets and Société Générale. (We also draw on the outlook produced by the Bank of England, NIESR and, less frequently, other bodies.) The City economists provide forecasts for both CPI and RPI, the former because it functions as the inflation target for the Bank of England, the latter because it remains an important indicator, particularly in respect of Government gilts, trading in which many City institutions are involved. A minority of institutions also include the CPIH in their forecasts, and this could grow in future.

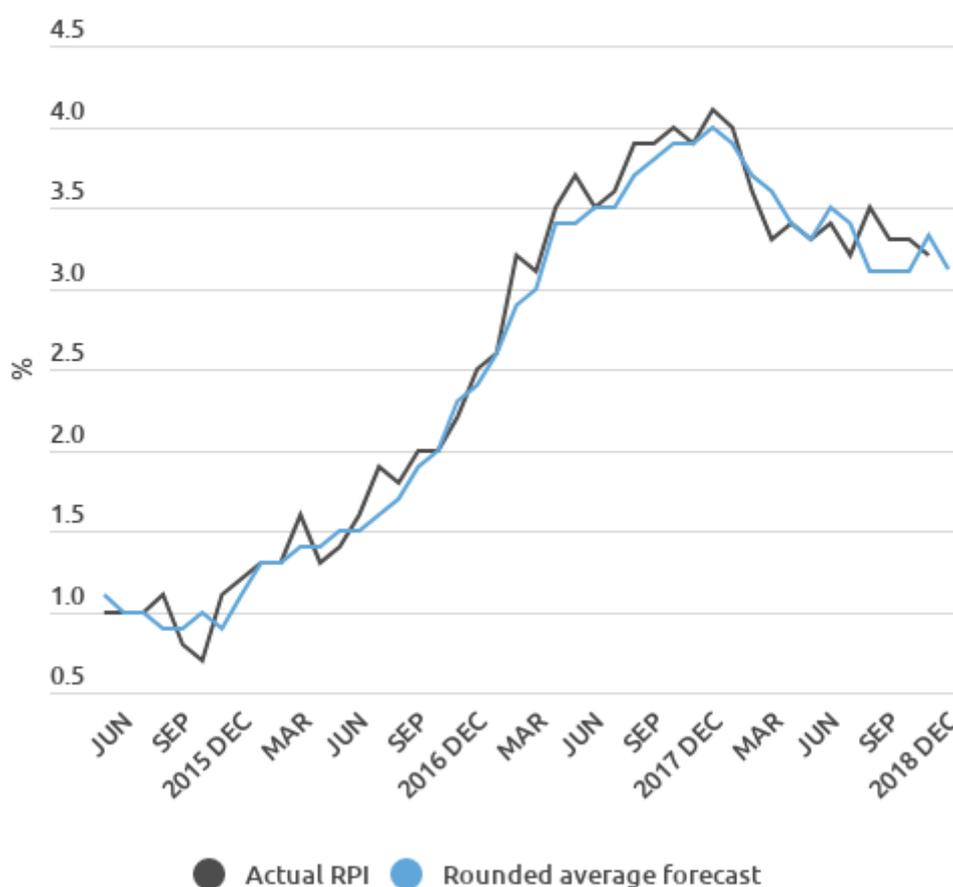
How seriously should we take these forecasts? It is important to realise that economics is not a natural science but a social science and as such is influenced by economists' views of how society operates and how it should continue to operate. Predictions are therefore based on their originators' models of the economy and as such involve a conditioning element in that they reflect economists' assessment of how/why they think the economy is behaving as it does, as well as judgements about how it might/should operate in the future.

This should be kept in mind when considering forecasts, but a key question is what is economists' record when it comes to predicting inflation? The graph overleaf compares the rounded average of our panel's predictions with the actual RPI over the period from May 2015 to the present. It shows that our panel's record in predicting inflation is reasonably good, and this over a period when the rate has risen, moving from a comparatively low figure to a higher rate (though viewed historically, the rate remains comparatively low). It is also important to

remember that these are short- to medium-term forecasts, mostly for around 18 months ahead. Making predictions further into the future is by definition even more difficult and while some institutions attempt to do this, we normally impose a cut-off point at around 18 months.

Other bodies' forecasts have turned out to be less accurate. In the OBR's December 2018 evaluation of its forecasts, it highlighted that its earlier predictions (which are quarterly and therefore less regular than those of the City economists) failed to foresee the extent of the increase in inflation that followed the vote to leave the European Union.⁵ The referendum result meant that sterling's exchange value fell, making imports more expensive and pushing up prices for a range of goods. This was reflected in higher inflation than previously.

RPI forecast versus actual RPI



⁵ The OBR is a government body that describes itself as an 'official independent fiscal watchdog'. It was created by the Coalition Government in 2010 to provide analysis of the UK's public finances.

5 INFLATION AND PAY SETTING

IDR’s 2018 survey of pay practices found that CPI has overtaken RPI as the most commonly used measure of inflation for pay-setting purposes for the first time. How can this be explained? The great recession of 2009 cast a long shadow and the failure of employers to restore real-terms wage increases to their pre-crash levels is well known. In these circumstances, the CPI has become something of a boon to employers who, although they mostly have been prepared to raise wages, have sought to limit these increases to levels they regard as affordable. Over the period since 1 January 2009, the median basic pay award for the whole economy has been at either 2% or 2.5% and as such was behind inflation during the period from 2010 to 2013, then ahead as inflation fell, but since the end of 2016, has been behind the RPI and sometimes the CPI as well.

IDR median pay award versus RPI



The post-recession context is key to understanding the rise in the prominence of the CPI in respect of pay setting. The fact that the CPI tends to be around 0.9 percentage points lower than the RPI, and its promotion by government, has undoubtedly helped in a period when considerations of affordability have been to the fore and have conditioned the responses of employers, employees and their representatives. The implicit, and sometimes explicit, message to employees has been: 'You might get CPI, but you won't get RPI'. The relative decline in both collective bargaining coverage and the capacity of trade unions to achieve improved outcomes for their members is an additional factor.

The post-recession context explains why, although inflation rose sharply in the aftermath of the crash, pay settlements failed to follow it upwards, as they had before the slump. And a subsequent period of very low inflation helped employers maintain median pay settlements at 2.5%, though it is important to note that pay settlements did not follow inflation down, with the median something of a floor for awards. But the linkage between inflation and pay awards is perhaps looser than before the Great Recession. Whether this will continue to be the case remains to be seen. In the short-term inflation looks to be falling, removing one upward pressure on pay awards. The question will be posed more sharply if and when inflation starts to rise once more.⁶

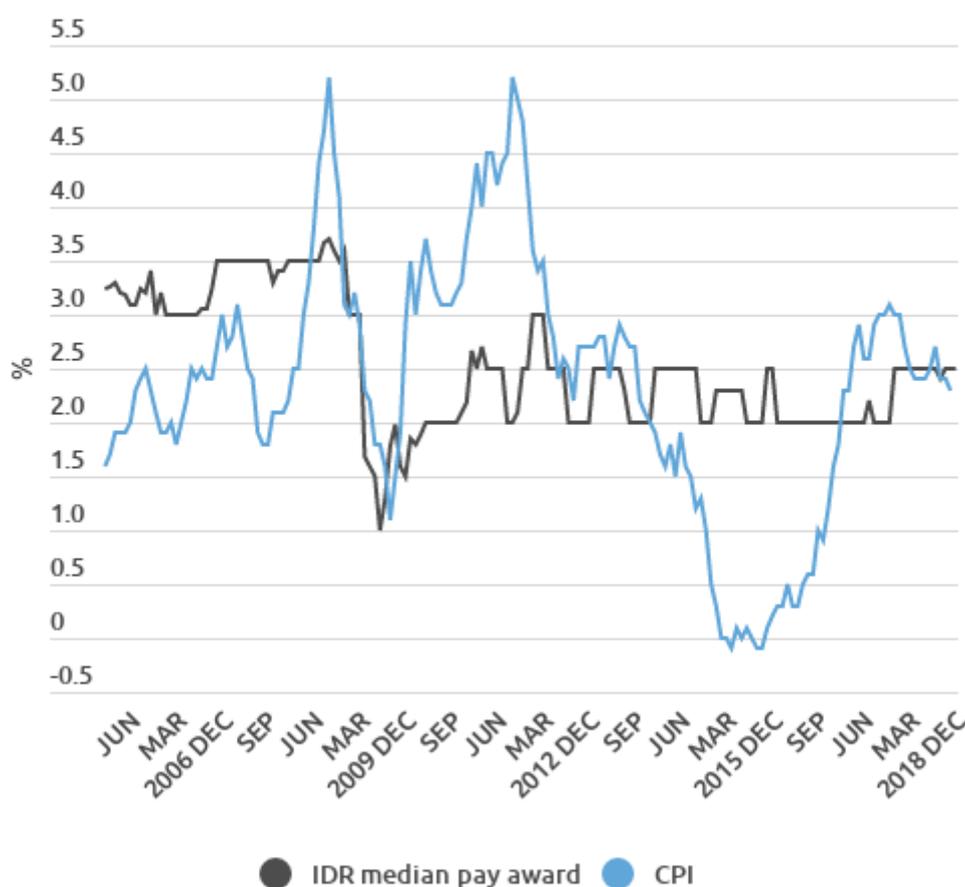
In respect of the RPI's continued use, the influence of trade unions over the pay setting process is clearly important. As employee representatives, trade unions are understandably keen to stress the 'all-items' nature of the measure (crucially including both mortgage costs and a proxy for house prices) and its use in updating a variety of important charges for households. This is likely to explain the pre-eminence of the RPI in inflation-linked formulas for subsequent pay rises under long-term deals. Indeed, without trade unions, employees would have no-one to make these arguments on their behalf.

⁶ This also raises the question of the direction of the relationship between inflation and pay. While higher labour costs can feed into higher prices and therefore contribute to inflation, they are only one potential element in the process by which inflation can rise, or more correctly, be judged to have risen. Witness the way in which the costs of imports played a much greater role in the recent spike in inflation than domestic labour costs. In addition, pay is not the same as labour costs. If pay increases, overall labour costs can be contained, by increasing productivity in either absolute terms (by reducing headcount or increasing working hours) or in relative terms (by improving processes). In such instances, pay rises are unlikely to be passed on in the form of price increases. And even where productivity improvements do not accompany pay rises, market conditions may be such that companies do not always pass on pay rises to consumers. It is probably fairest to say that while inflation has a tendency to follow inflation upwards, it lags behind and below it, and the relationship is rarely the other way round, since pay is only one input into price-setting.

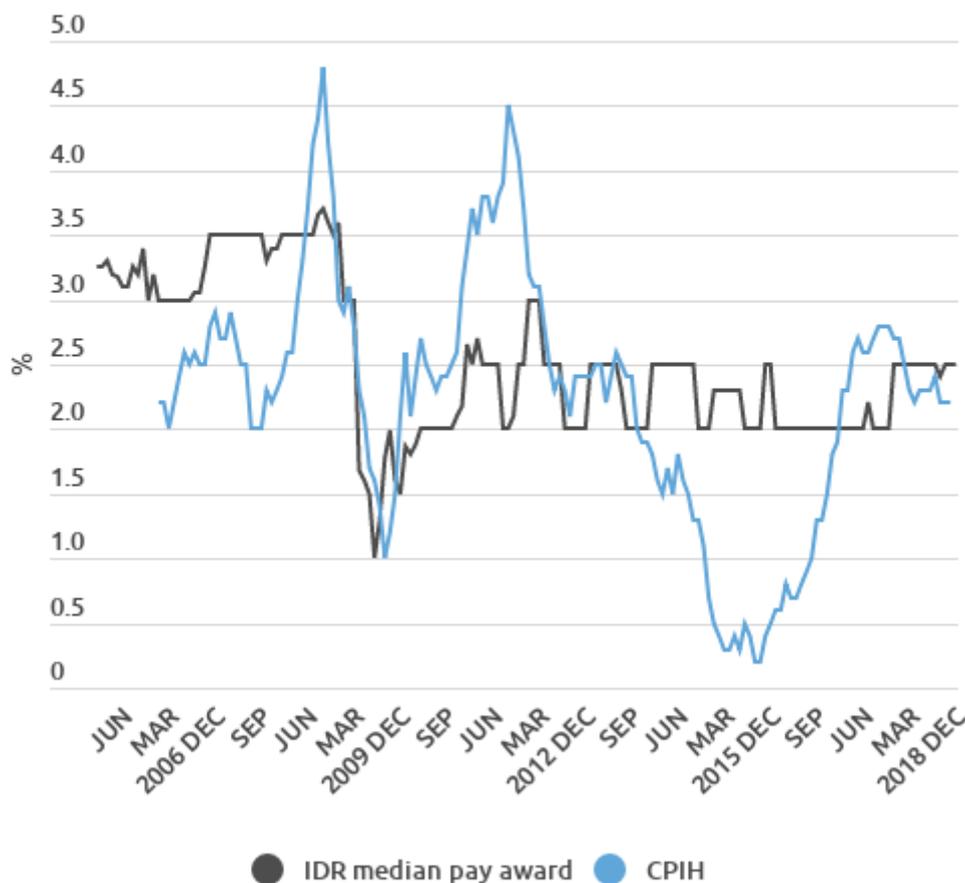
However, we also consider that the RPI's general persistence – despite the preferment by successive governments of the CPI and the removal of 'national statistic' status from the RPI – is owed to an appreciation by employers of its coverage. After all, many HR managers have mortgages too. Indeed, perhaps there may be a connection with the demographic profile of trade unionists and HR managers alike. Are they more likely than the general public as a whole to be home-owners?

What about the CPIH? Why doesn't it tend to be used more commonly as a reference for pay setting? The Government's promotion of the CPI as its mean measure for macroeconomic purposes is key here. Therefore, despite the ONS making the CPIH its 'headline' figure for inflation reporting, this tends to be ignored by media commentators. For instance, the latest coverage of inflation by the BBC, the Financial Times, the Guardian and Sky News all featured the CPI measure, with no mention of the CPIH (or the RPI).

IDR median pay award versus CPI



IDR median pay award versus CPIH



This has helped produce the slightly strange situation of a rise in prominence (in pay setting) of a measure, ie the CPI, which does **not** include key aspects of employees' expenditure. What are the implications of this, and also the continued, albeit shifting, prominence of the RPI? On the one hand, linking pay outcomes to a measure that omits estimates of inflation in key areas such as housing, as long as housing remains an important commodity, might be regarded as unfair. On the other hand, the continued use of the RPI suggests that its abolition – in the absence of an adequate alternative to which employers and employee representatives are directed, and with which they are satisfied – could be detrimental to pay setting outcomes, particularly for employees.

On this, the report of the House of Lords inquiry provides a potential way forward. It disagrees with the UK Statistics Authority that RPI does not have the potential to become a good measure of inflation. On the contrary, the Lords' report says that with 'improvements to

RPI...and a better method of capturing owner-occupier housing costs...we believe RPI would be a viable candidate for the single general measure of inflation.’ But in the short term it recommends that – while a single general measure is being developed – the Government should switch to CPI for uprating purposes in all areas where it is not bound by contract to use RPI. It should also stop issuing RPI-linked gilts and start to issue CPI-linked ones instead. On the long-term future of the RPI, the Committee recommends that once a single general measure of inflation has been introduced (which it says should be within five years) the UK Statistics Authority and the Government should decide whether RPI should continue to be published in its existing form for the purposes of existing RPI-linked contracts, or whether a programme of adjustments should be made to the RPI so that it converges on the single general measure.

Inflation and long-term deals

While inflation forms an important background reference to annual pay reviews, around one in-ten of all pay awards are part of longer-term arrangements, which are usually collective agreements concluded between employers and trade unions and are effective for two or three years (though longer-term arrangements are not unknown). In the private sector, where most of these approaches are found, long-term deals often involve a formal reference to one or other inflation indicator as a means of deciding pay rises in the subsequent years of the deal.⁷ The use of inflation in this way tends to fluctuate as inflation rises and falls. In periods when inflation is comparatively high, formal inflation links may arise in over two-fifths of long-term deals, but currently, with inflation running at what might be described as ‘moderate’ levels, the proportion is less than half that.

Such deals may stipulate the inflation rate for a particular month (usually the month just before the effective date of the increase) as the subsequent increase(s). Or they may specify an average for inflation over a number of months. Some deals involve ‘inflation-plus’ formulas, ie the relevant month’s inflation rate plus an additional percentage. Occasionally, the formulas for subsequent increases consist of inflation safeguards, stipulating an actual percentage increase unless inflation is higher, in some instances up to a certain level. The large majority of these inflation-linked formulas reference the RPI, with a minority (around a fifth of deals with inflation-linked formulas) referencing the CPI. Our monitoring has only found one deal that references the CPIH, despite the ONS making this its ‘headline’ measure of inflation.

⁷ Long-term deals are sometimes concluded in the public sector. An example is the recent three-year pay deal for the NHS, which provided headline rises of 3% in the first year and 1.7% in each of the subsequent years. But as here, linkages to inflation are infrequent in public sector long-term deals. Instead, subsequent pay increases tend to be pre-set. We assume this is because governments usually prefer to be prescriptive about their pay costs and as such are reluctant to link future pay movements to the vagaries of the economy and inflation.

