

# **Assessing Potential Changes in Retail Costs, 2015 to 2020**

**A report prepared for Water UK**

**April 2013**

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## Executive Summary

- This paper for Water UK looks at retail cost escalation in the water and sewerage industry. It is intended to be a response to Ofwat's invitation for evidence on (a) the need for and (b) the form of an allowance for rising costs within new household and non-household price controls.
- The findings in relation to the first of these matters are that:
  - there is clear evidence of rising water industry retail costs in historical June Return data;
  - forward-looking analysis of expected input price inflation and the scope for productivity improvement indicates that retail costs might be expected to increase by around 2% to 3% per annum (in nominal terms) up to 2019/20; and
  - cost increases of this magnitude would sit consistently with the experiences of other utility retail businesses and of non-utility retail/service businesses.
- This broad base of evidence leads us to conclude that there should be an expectation that water industry retail costs will increase by a non-trivial amount over the timescales that companies and Ofwat are considering in the current periodic review.
- On the second matter, the report identifies four possible ways of anticipating and accommodating retail cost escalation:
  - 1 factor expected annual cost escalation in real terms into the calculation of retail price controls which subsequently index in line with out-turn RPI inflation;
  - 2 factor expected annual cost escalation, absent wage growth, into the calculation of retail price controls which subsequently index in line with out-turn growth in the ONS' average weekly earnings index;
  - 3 set year-specific nominal price caps containing a fixed allowance for expected cost escalation; and
  - 4 set a fixed five-year nominal price cap containing a fixed allowance for expected cost escalation.
- We consider that each of these options has merits and we do not have a strong preference for one approach over the others. We are, however, clear that making no allowance for retail cost escalation is not a credible option.

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## **1. Introduction**

This paper for Water UK looks at retail cost escalation in the water and sewerage industry. It is intended to be a response to the invitation that Ofwat issued in its January 2013 methodology paper for evidence on (a) the need for and (b) the form of an allowance for rising costs within new household and non-household price controls.

Our approach to this work is to show first of all that there can be an expectation that retail costs will increase over the period to 31 March 2020. We do this by:

- examining historical water industry retail cost data;
- looking at the expected values of the two key retail cost drivers – input price inflation and productivity growth; and
- benchmarking to evidence of cost change in other comparable sectors.

After establishing that costs cannot be expected to stay constant, we then turn to the questions of regulatory methodology that Ofwat raises in its January 2013 periodic review consultation paper and evaluate different candidate options for calibrating retail price controls.

We wish to be clear upfront that the focus throughout the paper is on the broad direction in costs and that it not our intention to recommend that companies should include any particular numbers in business plans. We would expect that individual companies will want to make their own cost calculations at a later date in the periodic review process which take account, as a minimum, of company-specific cost mixes and company-specific cost pressures.

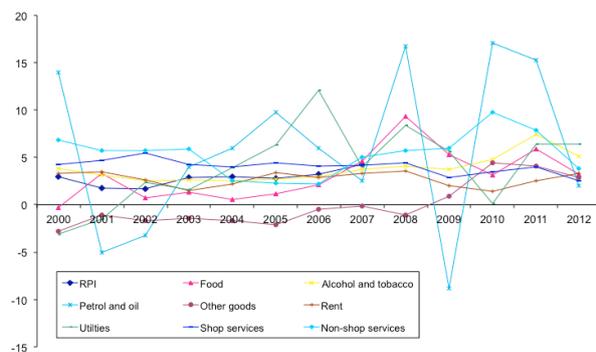
## 2. Issues

All firms in the UK experience cost pressures of some kind. In a world where governments and policymakers consider it acceptable for economies to exhibit modest year-on-year inflation, it is inevitable that the firms will see the costs of labour, materials and bought-in services change over time and that costs of most final goods and services will also increase.

These cost changes are ultimately passed on to customers in the form of higher prices. The household and non-household customers that water companies provide services to do not expect the prices of the things that they buy to stay constant; rather, they are used to seeing prices change at regular intervals and are well capable of dealing with the consequences that this has on their budgets and other expenditures.

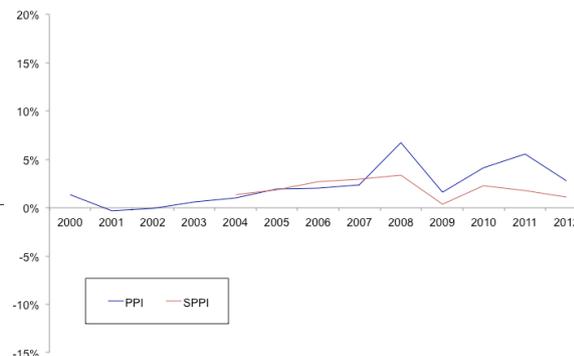
As evidence of this, figures 1 and 2 show data taken from the retail prices index (RPI) and from the producer price index (PPI) and service producer price index (SPPI). The two charts capture the normal experiences of household and non-household customers as regards the purchases that they make. It is notable that none of the lines on these charts is a flat horizontal line through the x-axis.

**Figure 1: RPI inflation, by component**



Source: ONS.

**Figure 2: PPI and SPPI inflation**



Source: ONS.

It would be extraordinary if the business of providing retail services to water companies were somehow different from these other sectors and costs naturally stay constant. When one looks at the activities that Ofwat is proposing to define as retail activities, it is apparent that there is nothing particularly unique or special about the work involved in comparison to activities carried out in other sectors. In particular, it is possible to identify numerous other sectors in the UK economy in which firms:

- operate a call centre;
- conduct billing activities;
- send staff to customers' homes and premises; and
- have overheads relating to finance, IT, HR, accommodation, etc..

It is also apparent that the labour, materials and other raw inputs that water companies make use of when conducting their activities are, in general, not especially specialised in nature. The vast majority of staff, for example, could just as easily work for, say, an energy company or a credit card company or a logistics company as a water company. The people and materials that sit behind water companies' IT systems can be transferred without much difficulty to other projects. And the firms supplying postage services, accommodation, etc. have many other customers outside of the water sector.

This suggests that the expectation a priori ought to be that costs incurred by business providing water retail services will have the same time-varying features as all of the other

industries that we highlight in figures 1 and 2. It is therefore a little counter-intuitive to see Ofwat challenge companies to *prove* that they experience material changes in costs that lie beyond management control. We would have expected there to be a recognition that costs in 2020 will not be identical to costs in 2013 or 2015 and for the debate to be about the scale of cost escalation and the most appropriate way of anticipating and accommodating that escalation in the calculation of new retail price controls.

We nonetheless think that it is possible for companies to demonstrate to Ofwat beyond doubt that there are underlying factors which will cause retail costs to change naturally over time. We do this in three parts in sections 3, 4 and 5 of this paper.

Section 3 looks first of all at the industry's historical experience. We take data from tables 21 and 21b of June Returns and examine the rate of change in retail costs over the last ten years.

Section 4 then develops work carried out in PR09 to assess the rate of 'frontier shift' in retail activities on a forward-looking basis. Companies and Ofwat will recall that during the last review they looked at the natural rate of change in companies' costs via the following formula:

$$\text{Frontier shift} \approx \text{input price inflation} \textit{ minus} \text{ productivity improvement}$$

Estimates have been made previously of the relevant figures for the two terms in this formula for a vertically integrated water company. We take this work one step further and make estimates of expected market-driven input price inflation and expected productivity improvement for retail activities only.

Section 5 subsequently seeks to corroborate the picture that the previous analysis presents by looking at the experiences of firms from outside of the water industry. The purpose of this analysis is to show that similar trends are apparent among firms that operate in fully competitive industries and that estimates of water industry cost escalation are not unduly influenced by monopoly.

### 3. Historical Data

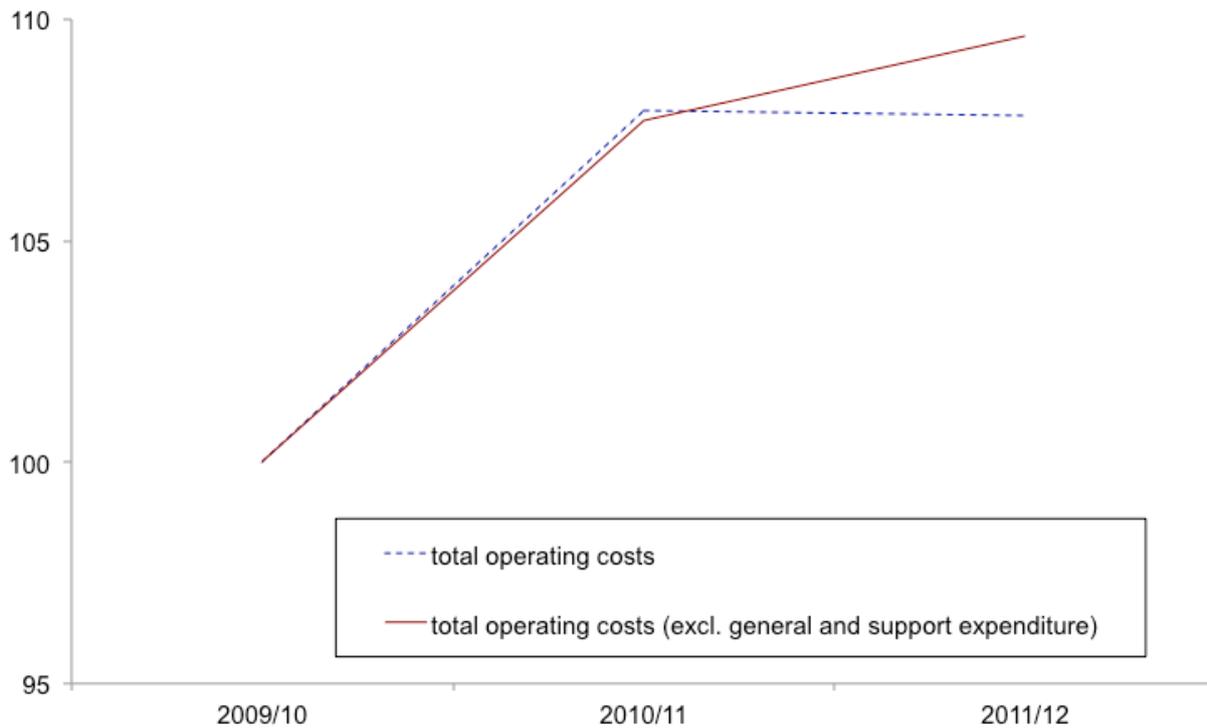
We start by examining historical June Return data for retail activities. The most useful points of reference are contained within:

- table 21b figures for total retail costs; and
- table 21 figures for customer services and doubtful debts.

The table 21b figures correspond most closely to the retail costs that Ofwat will be allowing for in 2015-20 price controls, but it is a relatively short series of data covering 2009/10, 2010/11 and 2011/12 only. The table 21 figures, by contrast, give an incomplete picture of retail costs, but do pick up the two largest cost categories and, most importantly, comprise a 20-year series of data.

Figures 3.1 and 3.2 summarises the trends in costs over time.<sup>1</sup>

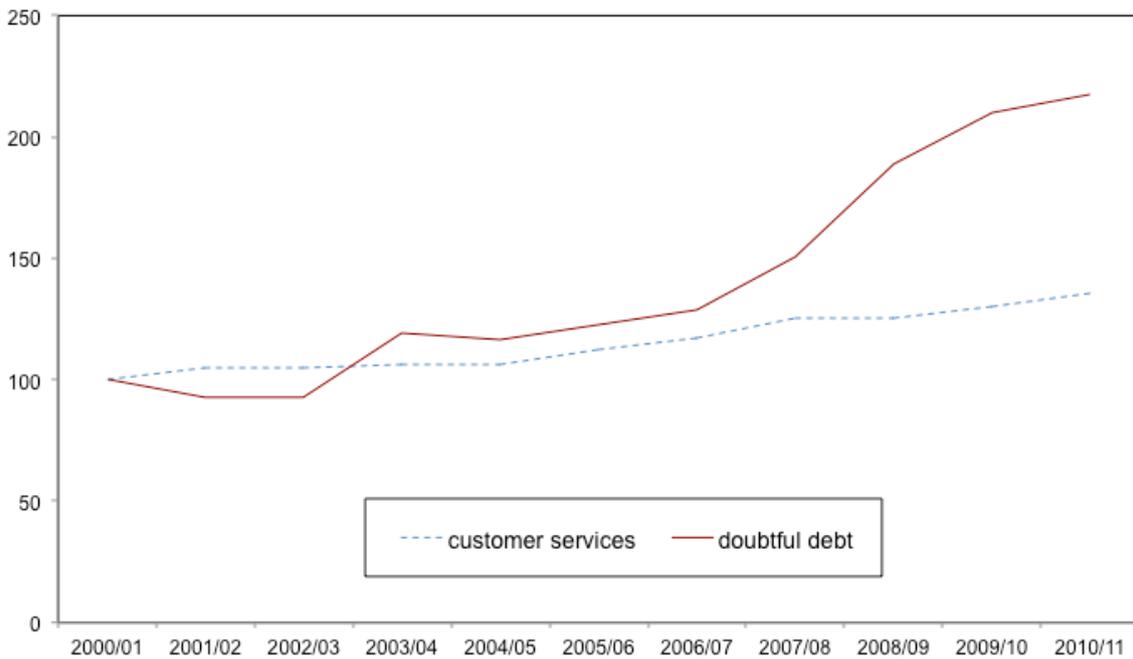
**Figure 3.1: Table 21b costs**



Source: June Returns.

<sup>1</sup> All charts in this report present costs in nominal terms, unless stated otherwise.

**Figure 3.2: Table 21 costs**



Source: June Returns.

The key points that we take from these charts are as follows:

- the table 21b data shows that total retail operating costs were 7% higher in 2011/12 compared to two years earlier in 2009/10;
- the increase in total retail costs would have been higher at around 9% were it not for what looks to be a reclassification of certain general and support costs that appears to have occurred within some companies during 2011/12;
- the longer series of table 21 data shows customer services costs and doubtful debt increasing over time; and
- customer services costs in 2010/11 were 36% higher in 2010/11 than they were ten years earlier in 2000/01. Doubtful debt was 118% higher.

This is clear evidence that the water industry’s historical experience has been one of retail costs increasing year on year.

We also note that the time period considered, 2000/01 to 2010/11, is one in which the majority of companies have been making ‘catch-up’ efficiency savings. This very likely held down the rate of cost increase over the last ten years, masking to some extent the natural rate of cost increase at the industry’s efficiency frontier.

## 4. Forecast Cost Escalation

Ofwat's focus in PR14 is on the costs that companies will incur in the period 2015-20 and not the cost pressures that have been felt historically. We look in this section at what the expected rate of cost escalation might be for these five years using the methodology applied by Ofwat and the Competition Commission in PR09 and the subsequent 2010 Bristol Water inquiry, i.e.:

$$\text{Frontier shift} \approx \text{input price inflation} \textit{ minus} \text{ productivity improvement}$$

### 4.1 The input mix

The first step in the analysis involves obtaining a breakdown of the different inputs that companies use when providing retail services. To get this understanding, we put an information request to a sample of companies at the start of this project to establish what these inputs are and what weights they have. The outputs of this work are shown in table 4.1

**Table 4.1: Input mix for a representative water company**

Input	% of household retail costs	% of non-household retail costs
Labour	45	55
Business IT	10	10
Doubtful debt	35	25
Materials/Postage/Premises/ Vehicles/Other	10	10

The analysis indicated that labour costs are the biggest single component of retail costs, followed closely by bad debt. The only other significant category of costs that all of the companies we surveyed brought to our attention is IT. Individual companies then variously flagged materials, postage, premises and vehicles costs to us as non-trivial contributors to costs, but not with any great consistency.

Comparing household and non-household costs, it is apparent that doubtful debt constitutes a higher percentage of household retail costs. Partly as a consequence of this, a higher percentage of non-household retail costs can be attributed to labour.

### 4.2 Input price inflation

Based on the input mix in table 4.1, we now give our estimate of the exogenous input price inflation that will confront an efficient retailer over the period to March 2020. We do this by making estimates of input price inflation affecting each input in turn.

#### 4.2.1 Macroeconomic outlook

These forecasts need to be anchored to the overall macroeconomic outlook for the UK in the years covered by this study.

In previous First Economics reports we have relied on HM Treasury and Bank of England projections of GDP growth. The HM Treasury's forecasts are now produced by the

independent Office of Budget Responsibility (OBR), which in our view strengthens the case for using public-sector numbers as the anchor for our calculations.<sup>2</sup>

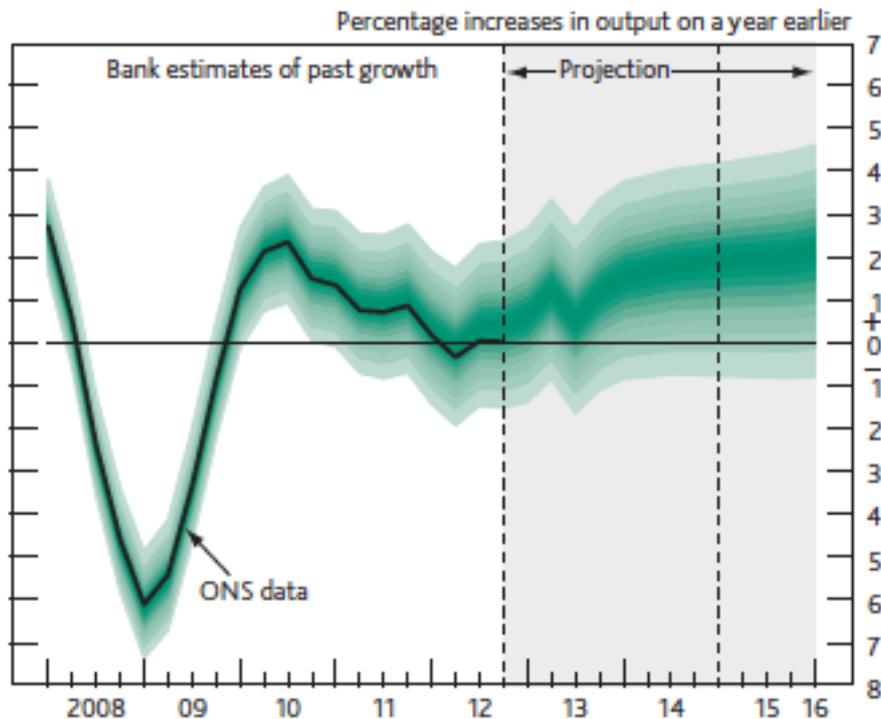
Table 4.2 and figure 4.3 reproduce figures that may be found in the OBR’s March 2013 economic forecast and the Bank of England’s February 2013 Inflation Report.

**Table 4.2: OBR’s March 2013 forecasts of GDP growth**

	Percentage change on a year earlier, unless otherwise stated						
	Outturn	Forecast					
	2011	2012	2013	2014	2015	2016	2017
<b>UK economy</b>							
Gross domestic product (GDP)	0.9	0.2	0.6	1.8	2.3	2.7	2.8
<b>World economy</b>							
World GDP at purchasing power parity	3.9	3.1	3.4	4.1	4.4	4.6	4.6
Euro Area GDP	1.5	-0.5	-0.5	1.0	1.3	1.7	1.9
World trade in goods and services	5.7	2.5	3.7	5.6	6.0	6.2	6.3

Source: OBR.

**Figure 4.3: The Bank of England’s February 2013 forecast of GDP growth**



Source: Bank of England.

The two sets of numbers tell a fairly consistent story about the path which the UK economy is projected to follow, albeit with the Bank of England painting a slightly more pessimistic picture than the OBR. In both cases, there is a year of disappointing growth during 2013 as

<sup>2</sup> The alternative of using a single private-sector provider of economic forecasts presents a number of dangers. For one, it could be that the selected forecaster takes a view of future economic prospects that sits outside of mainstream consensus. This might give an inappropriately extreme picture of the price inflation that is likely to impact on companies. It could also be that stakeholders come in future to shop around for forecasts that further their interests – i.e. very high price inflation for companies, very low price inflation for customers. We do not think that this would be a positive development.

households continue to grapple with shrinking real incomes, exporters struggle with sluggish external demand and the government reins back its spending. Thereafter the recovery gathers pace through 2014 and starts to exhibit growth of 2% to 3% per annum from mid-2014 onwards.

The Bank of England helpfully identifies the key uncertainties around the central case. The main downside risk is around the challenges within the eurozone, but there are also continued concerns about the erosion of household incomes by inflation. Balanced against this on the upside, the Bank is positive about the growth of credit and notes that either a slowdown in inflation or increased productivity growth would help boost wages and support household consumption. It is also possible that fears about the eurozone economies have been exaggerated. Figure 4.3 shows a balanced set of risks around the central case, with the downside probabilities no greater than the upside probabilities in the Bank's estimation.

As far as the global economy is concerned, the figures in table 4.2 show a continued dip in world GDP growth in 2013 as the effects of the eurozone recession and weak growth in the US affect export-oriented economies around the world. However, the scale of this slowdown is not to be overstated and there is a return to very strong global growth from 2014 onwards.

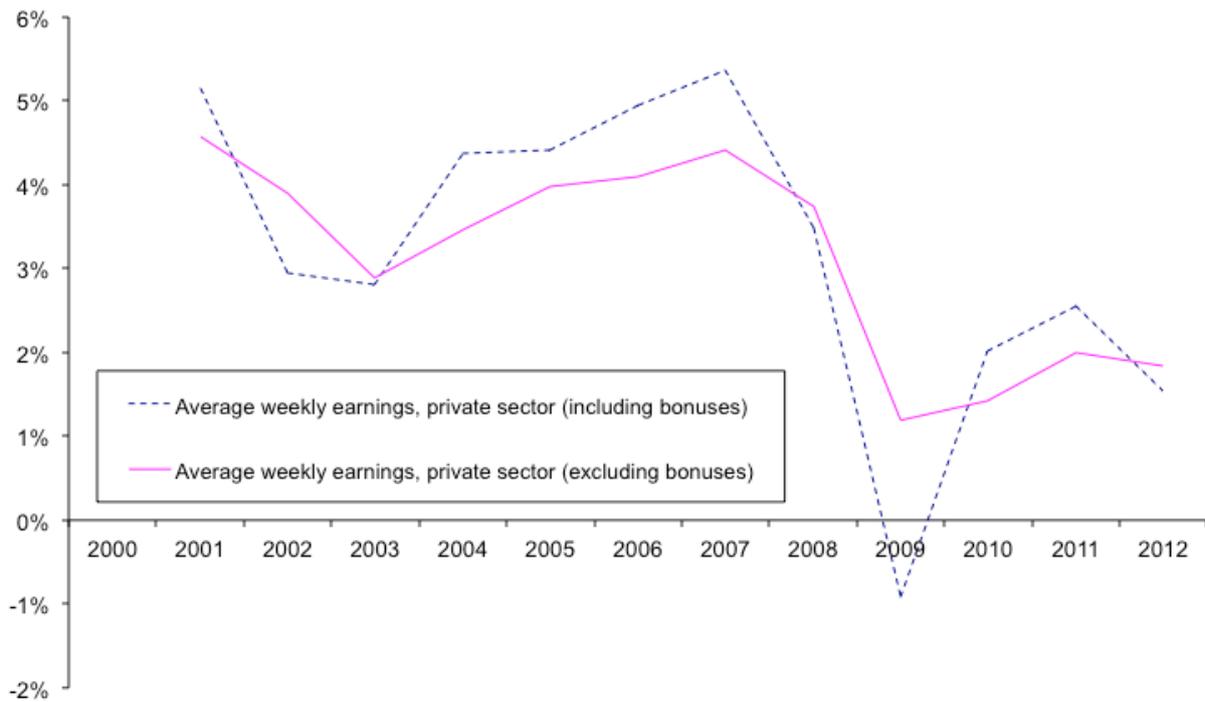
Looked at side-by-side, the implication of these forecasts is that inflationary pressures will be weak generally for the next 12-18 months before strong global growth and the much-delayed recovery of the UK economy put new pressures on prices. We now consider to what extent this is apparent in recent data and what the prognosis is for the 2013/14 to 2019/20 period.

2.1.2 Detailed input-by-input forecasts

*Wages*

Figure 4.4 plots the historical rate of change in the ONS' private sector average weekly wage indices.

**Figure 4.4: Private sector wage inflation**



Source: ONS.

The chart shows a marked shift in exogenous wage pressures due to recession. After growing at an average annual rate of just over 4% on both measures between 2000 and 2008, wages declined in absolute terms in 2009, after accounting for the effects of withdrawn bonuses, and then grew by only 1.5% to 2.5% in 2010, 2011 and 2012. The latest monthly data from February 2013 shows a further weakening in wage pressures, with annual private-sector wage growth at 0.8% including bonuses and 0.6% excluding bonuses.

Going forward the expectation is one of subdued wage growth stretching over a period of up to 3 years. This is based to a large extent on historical experience which shows that pay increases typically lag behind the growth in GDP by several quarters, mainly because recession creates a pool of unemployed workers who compete vigorously for jobs once economic activity picks up and firms resume hiring. Although this recession resulted in fewer redundancies than previous recessions, there are still around 1m more individuals than normal in unemployment and many more who have been forced onto part-time hours or into jobs that they might not otherwise have taken. This should mean that employers, including the water and sewerage companies, will for a period find that they do not need to offer significant pay increases in order to attract and retain good staff.

The OBR's March 2013 forecast gives a sense of what sort of market-driven pay increases firms should expect to have to pay during the next five years.

**Table 4.5: Labour market forecasts**

	Percentage change on a year earlier, unless otherwise stated						
	Outturn	Forecast					
	2011	2012	2013	2014	2015	2016	2017
<b>Labour market</b>							
Employment (millions)	29.2	29.5	29.8	29.9	30.1	30.3	30.5
Wages and salaries	2.7	2.8	2.4	3.1	4.3	4.8	4.8
Average earnings <sup>4</sup>	2.3	2.1	1.4	2.7	3.6	4.0	4.0
ILO unemployment (% rate)	8.1	7.9	7.9	8.0	7.9	7.4	6.9
Claimant count (millions)	1.53	1.59	1.58	1.63	1.59	1.48	1.38

Source: OBR.

The projections have average earnings growth dropping slightly in 2013 before accelerating gradually to 4.0% by the end of the forecast period. We use the financial year equivalents as the best available estimates of the wage inflation for workers employed by a retail business in the period to 2017/18, as set out in table 4.6 below. From 2018/19 onwards we think it is prudent to allow for pay increases in line with the pre-recession growth of average weekly earnings including bonuses of 4.25% per annum.

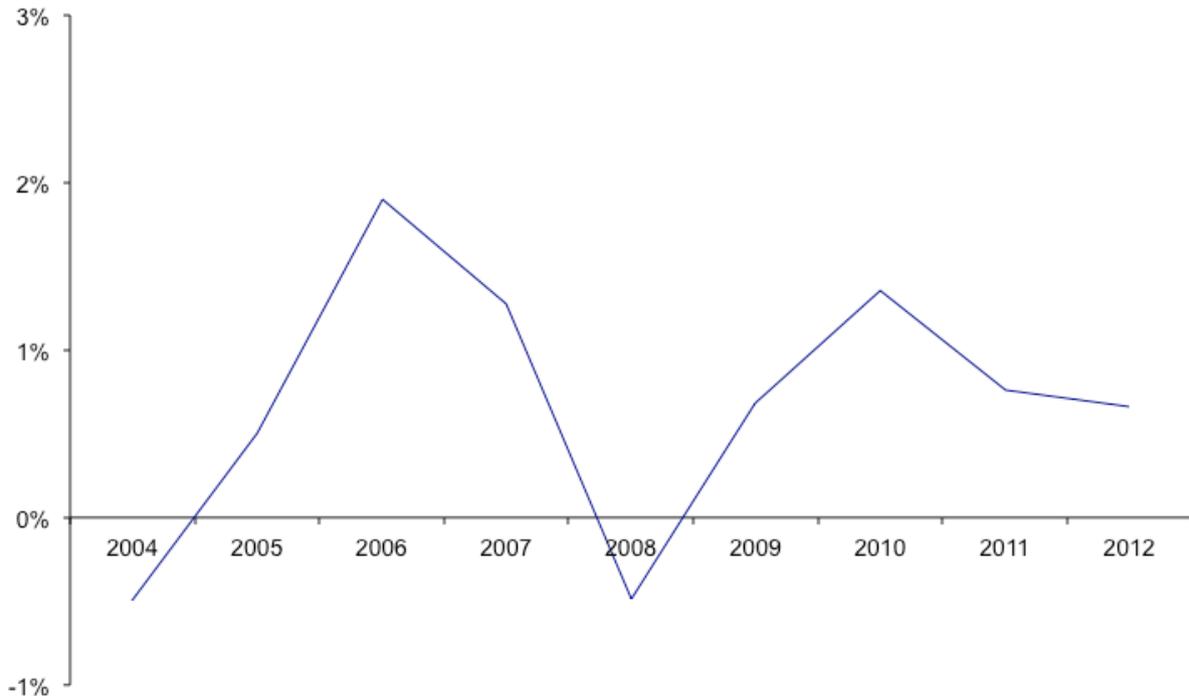
**Table 4.6: General wage inflation**

	Average earnings growth
2013/14	1.8%
2014/15	2.9%
2015/16	3.8%
2016/17	4.0%
2017/18	4.0%
2018/19 and thereafter	4.25%

*Business IT*

The prices of IT products and services are notoriously difficult to track on a consistent, like-for-like basis. After suspending the publication of its corporate IT price indices in 1999, the ONS launched a new data series in 2005 as part of its experimental service producer price index. Figure 4.7 plots the data.

**Figure 4.7: Business IT cost increases**



Source: ONS.

Our reading of this chart is that business IT costs are not as unpredictable as wage costs. Historical readings of the annual rate of change in the index have been within a fairly narrow -0.5% to +2% range.

Going forward, it would seem prudent to provide for a flat annual price inflation allowance at the mid-point of this range. We therefore provide for price increases of 0.75% per annum.

**Table 4.8: Business IT cost inflation**

	IT cost increases
2013/14 and thereafter	0.75%

*Doubtful debt*

It is difficult to be precise about the rate of increase in bad debt during the 2015-20 period given that a key driver of the size of companies' bad debts is the size of customers' bills, the values of which will not be known for another 18 months. A very simple assumption for the purposes of this analysis only might be that bad debt will increase on average by around the rate of RPI inflation (as the index for rolling forward wholesale price limits). We note that this would mirror the assumption that Ofwat and the Competition Commission made in 2010, but provide for lower cost increases than have been seen in recent years (see figure 3.2).

Table 4.9 reproduces the OBR's March 2013 inflation forecasts.

**Table 4.9: OBR's March 2013 inflation forecasts**

	Percentage change on a year earlier, unless otherwise stated						
	Outturn			Forecast			
	2011	2012	2013	2014	2015	2016	2017
<b>Inflation</b>							
CPI	4.5	2.8	2.8	2.4	2.1	2.0	2.0
RPI	5.2	3.2	3.2	2.8	3.2	3.6	3.9

Source: OBR.

We use the financial year equivalents in our calculations. For 2018/19 and 2019/20, we use the OBR's assessment that the government's 2.0% CPI inflation target translates into RPI inflation of 3.4% over the long term.<sup>3</sup>

**Table 4.10: Increase in doubtful debt**

	RPI inflation
2013/14	3.1
2014/15	2.9
2015/16	3.3
2016/17	3.7
2017/18	4.0
2018/19 and thereafter	3.4

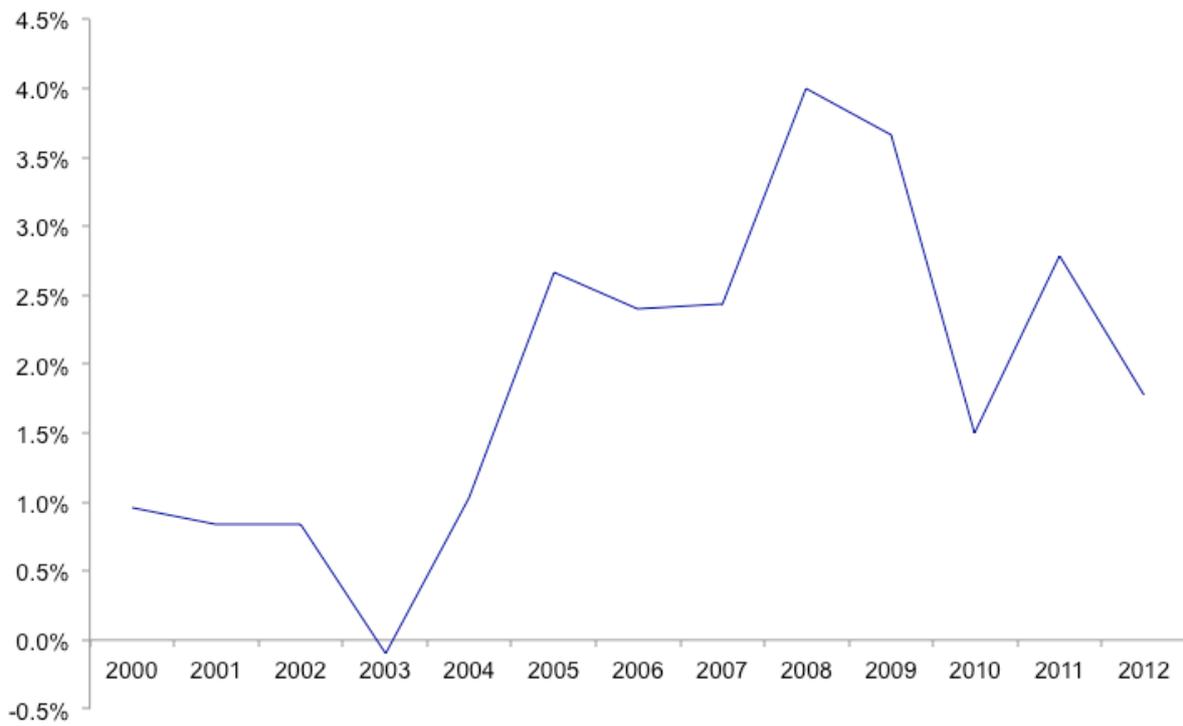
#### *Other*

The remaining 10% or so of companies' costs comprises miscellaneous materials costs, postage costs, accommodation costs, transport costs and other sundry purchases, none of which are large enough individually to have a major impact on the overall input price inflation calculation.

Figures 4.11 to 4.14 give a sense of the historical rate of increase in the prices of the identifiable items using figures from the ONS' RPI, PPI and SPPI data sets.

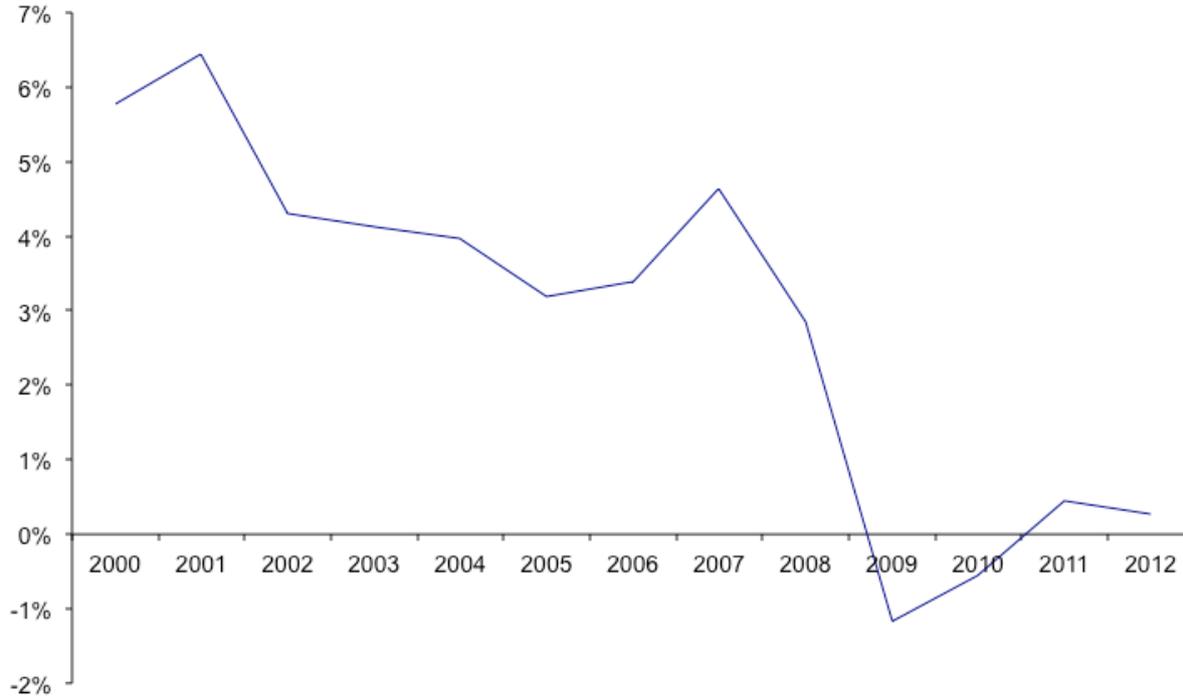
<sup>3</sup> OBR (2011), The long run difference between RPI and CPI Inflation. Note that this estimate of 3.4% post-dates the changes that the ONS made to the measurement of prices in 2010 and is consistent with the current definition of RPI, as confirmed by the ONS in January 2013.

**Figure 4.11: Materials (machinery and equipment) cost increases**



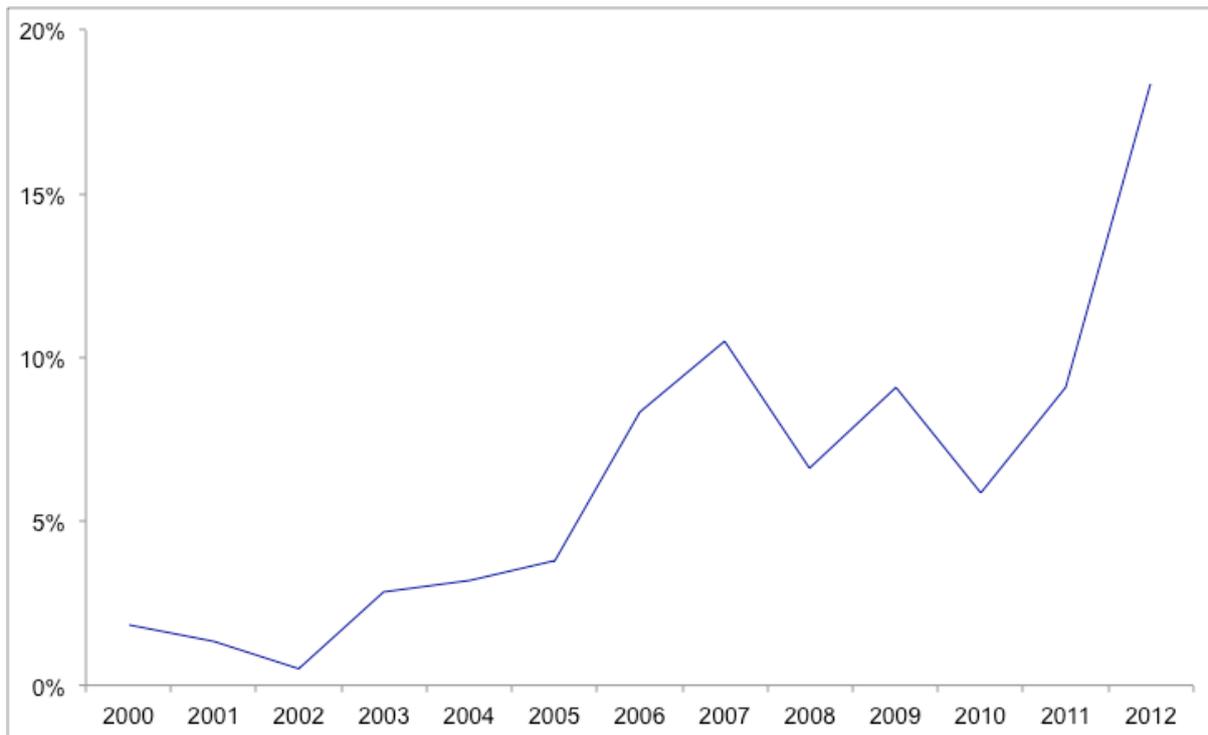
Source: ONS, PPI.

**Figure 4.12: Rent increases**



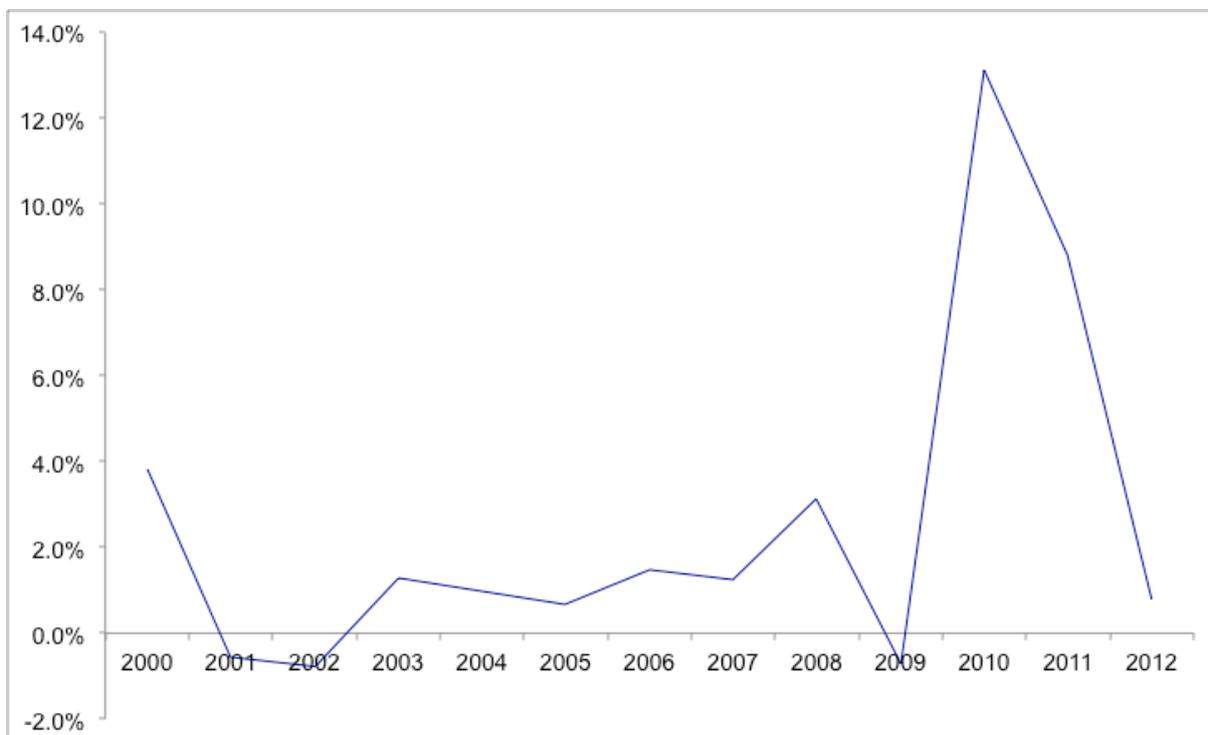
Source: ONS, SPPI.

**Figure 4.13: Postage cost increases**



Source: ONS, RPI.

**Figure 4.14: Motoring cost increases**



Source: ONS, RPI.

When looking forward to March 2020, it is relevant to note that:

- commercial rents tend to be correlated over the long term to residential house prices, which in turn tend to be correlated to average earnings growth;
- Ofcom has recently imposed a new control on the cost of second class postage, which caps annual price increases to CPI; and
- the cost of running vehicles will be heavily dependent on global oil prices.

Rather than make individual forecasts of all the items in the 'other' category, we make a very broad brush assumption that costs will increase by 2% per annum. At a very high level, and recognising the relatively small weight attributable to specific cost items, this looks to be a reasonable extrapolation of historical experience, as moderated by the considerations set out above.

**Table 4.15: Other cost inflation**

	Other cost increases
2013/14 and thereafter	2%

### Summary

Table 4.16 pulls the line-by-line forecasts into an overall estimate of the input price inflation outside of management control affecting household and non-household retail services.

**Table 4.16: Aggregate input price inflation**

	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19 and thereafter
Labour	1.8	2.9	3.8	4.0	4.0	4.25
Business IT	0.75	0.75	0.75	0.75	0.75	0.75
Doubtful debt	3.1	2.9	3.3	3.7	4.0	3.4
Other	2.0	2.0	2.0	2.0	2.0	2.0
Input price inflation (household)	2.2	2.6	3.1	3.4	3.5	3.4
Input price inflation (non-household)	2.0	2.6	3.2	3.4	3.5	3.5

## 4.2 Productivity growth

The extent to which productivity growth can be expected to offset the above input price pressures depends on a number of factors, including:

- the pace of technical progress;
- the availability of opportunities to reduce overheads; and
- companies' ability to bring better working practices to bear on its activities.

A useful reference point for understanding the productivity growth potential of a business is historical total factor productivity (TFP) improvement achieved by competitive sectors of the UK economy which are in some way similar to a retail business. The most up-to-date source for this type of data is the EU KLEMS project which looked at economic growth, productivity and technological change for all European Union member states during the period 1970 to

2007. A database released to the public in 2008 and updated in 2010 allows researchers to analyse TFP growth on an industry-by-industry basis and to compare/benchmark the historical performance of UK companies against firms from elsewhere.

The EU KLEMS database contains information for 38 sectors, sub-sectors and sub-sub-sectors of the UK economy. Most, such as agriculture, mining and quarrying and manufacturing, are not very good comparators for a water industry retail business. There are, however, three potentially useful TFP benchmarks for:

- the whole of the UK economy;
- the finance, insurance, real estate and business services sector; and
- the real estate, renting and business services sub-sector.

Table 4.17 shows average annual TFP growth rates at each of these levels for the 1970 to 2007 period as a whole and for the more recent 1990 to 2007 period. The definition of TFP growth that we have used is value-added TFP growth, consistent with the measure used in most other periodic reviews.

**Table 4.17: Annual total factor productivity growth (%) by sector**

Index	1970 to 2007	1990 to 2007
UK economy	0.4%	0.7%
Finance, insurance, real estate and business services	-0.9%	0.3%
Real estate, renting and business services	-0.9%	-0.2%

It is apparent from table 4.17 that perceptions of a retail business's productivity improvement potential depends in part on which of the periods is seen as providing the best guide to future performance and in part on which index or indices are considered to be the best comparators.

On the first of these points, we have a strong preference for using up-to-date information. It is not at all clear to us how data on productivity growth from the 1970s and, to some extent, the 1980s can act as a reliable indicator of what might be expected of companies in the period to 2020. Although there are difficulties with any approach that seeks to extrapolate from the past to predict the future, we are much more confident in using data from the most recent business cycle (i.e. 1990 to 2007) in such an exercise.

On the second point, we consider the finance, insurance, real estate and business services sector to be the most relevant of the indices. The index is more specific and more relevant than the whole economy average and is therefore more likely to pick up factors which apply particularly to relatively labour intensive businesses like retail. It is not, however, too narrow as to be unduly influenced by productivity improvement/losses in a very specific sub-sector. In this regard, we note that the EU KLEMS data set reports a separate index for real estate activities which shows an annual decline in productivity of -1.6% per annum between 1990 to 2007. This will also be dragging down the third of the indices in table 4.1, making it an unreliable benchmark to hold water companies to.

These considerations lead us to select 0.3% as the benchmark rate of productivity growth for a retail company. We would suggest that this figure make intuitive sense for at least two reasons:

- 0.3% sits below the whole economy average, consistent with evidence that labour-intensive service-sector firms find it less easy than capital intensive manufacturing firms to increase productivity; but

- 0.3% is more than zero and implies that there are productivity improving initiatives that companies should be exploring during the coming years to offset the effects of input price inflation.

#### 4.4 Overall frontier shift calculation

Table 4.18 combines our estimates of input price inflation, productivity growth and RPI-measured inflation into an overall estimate of frontier shift.

**Table 4.18: Frontier shift calculation (%)**

	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19 and thereafter
Labour	1.8	2.9	3.8	4.0	4.0	4.25
Business IT	0.75	0.75	0.75	0.75	0.75	0.75
Doubtful debt	3.1	2.9	3.3	3.7	4.0	3.4
Other	2.0	2.0	2.0	2.0	2.0	2.0
Productivity growth	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)
Frontier shift (household)	1.9	2.3	2.8	3.1	3.2	3.1
Frontier shift (non- household)	1.7	2.3	2.9	3.1	3.2	3.2

There are three important observations to make about these numbers.

- First, the rate of cost escalation is not a constant. It varies slightly from year-to-year in line with the extent to which UK and global GDP growth puts upward pressure on input prices.
- Second, the calculations show clearly that there can be an expectation that retail costs will increase from year to year. During the period 2015-20, the average annual rate of increase in costs is estimated to be around 3%.
- Third, this 3% tallies neatly with the historical data that we presented in section 3. In effect, table 4.18 is saying that the future is quite like the past and that the historical escalation of retail costs can be expected to continue in the years ahead.

The numbers in the above table will need to be revisited and recalculated before Ofwat makes its price control determinations. For the avoidance of doubt, the purpose of this study is not to recommend that the precise numbers in table 4.18 should be factored into price cap calculations. Rather, the conclusion to take from this work is that costs cannot be expected to stay constant but will increase naturally at a non-trivial rate.

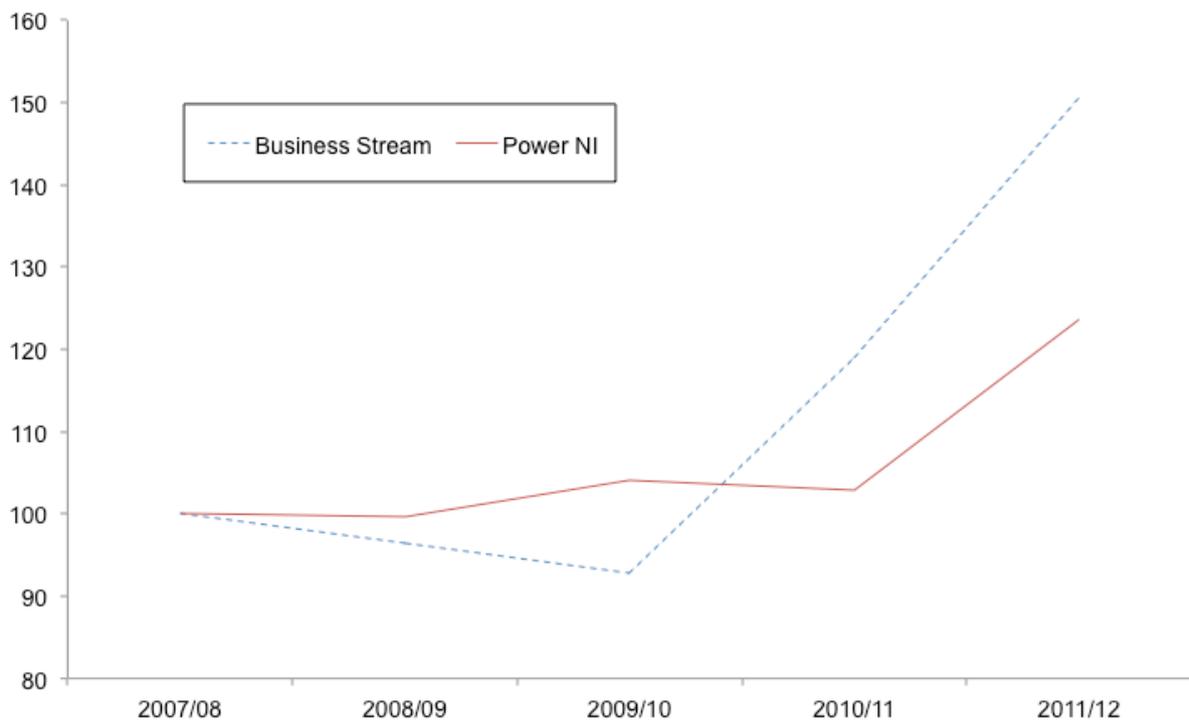
## 5. Benchmarking

In order to allay any suspicion that the cost escalation identified in sections 3 and 4 is unique to the water industry or somehow a consequence of monopoly, we now show that there is evidence of similar cost/price increases in other retail industries.

### 5.1 Utility retail services

Figure 5.1 sets out recent cost data from Business Stream and Power NI. Business Stream is the incumbent retailer to business water customers in Scotland. Power NI is the incumbent electricity supplier to household and non-household electricity customers in Northern Ireland. Both companies operate in markets that were recently opened to full competition and are experiencing a gradual loss of market share.

**Figure 5.1: Business Stream and Power NI opex**



Source: annual reports.

The chart shows that Business Stream’s opex in 2011/12 were 50% higher than the company’s opex in 2007/08. In Power NI’s case, the increase in costs is 25%.

The companies’ annual reports indicate that the increases in costs come about partly as a result of wage and other input price pressures and partly as a result of the extra efforts that the companies are putting in to customer retention and customer acquisition. As evidence of this latter effect, Business Stream’s annual reports highlight that headcount has increased from 126 FTEs in 2007/08 to 218 FTEs in 2011/12.

### 5.2 Other service industries

The ONS RPI and SPPI series contain data showing the cost/price escalation in non-utility service industries. Relevant comparator businesses include:

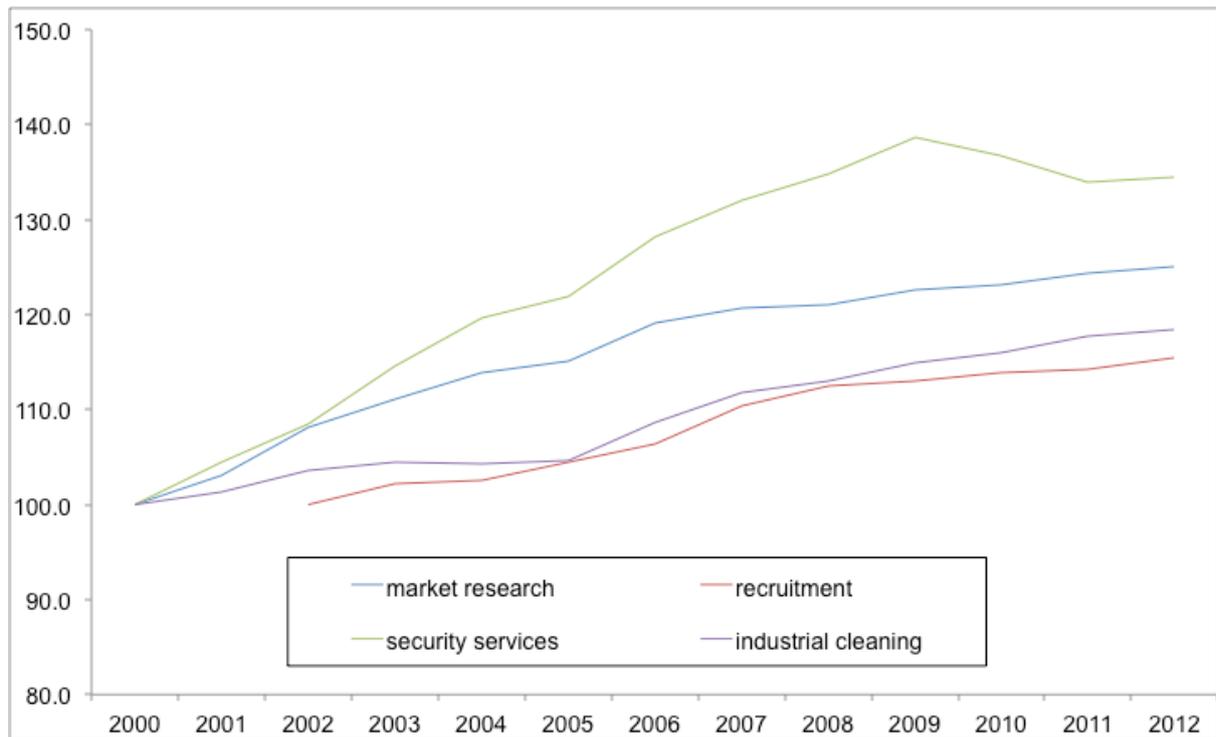
- market research;
- recruitment;

- security services;
- industrial cleaning;
- repairs and maintenance services;
- maintenance of motor vehicles;
- domestic services;
- personal services; and
- entertainment and other recreation.

The products that the firms in each of these sectors sell is very different (from each other and from water companies' retail service). However, the composition of the underlying cost bases is actually very similar insofar as all of these industries are labour intensive and heavily reliant on a UK-based workforce. Individually, it is possible to identify reasons why the costs of firms operating in these sectors will be affected by certain influences which differ from those affecting network businesses – we acknowledge there is no such thing as an exact comparator. However, we do not believe that there is any systematic bias that would mean that the overall picture of cost escalation within the comparator set ought to be vastly different from the cost escalation experienced in the water sector.

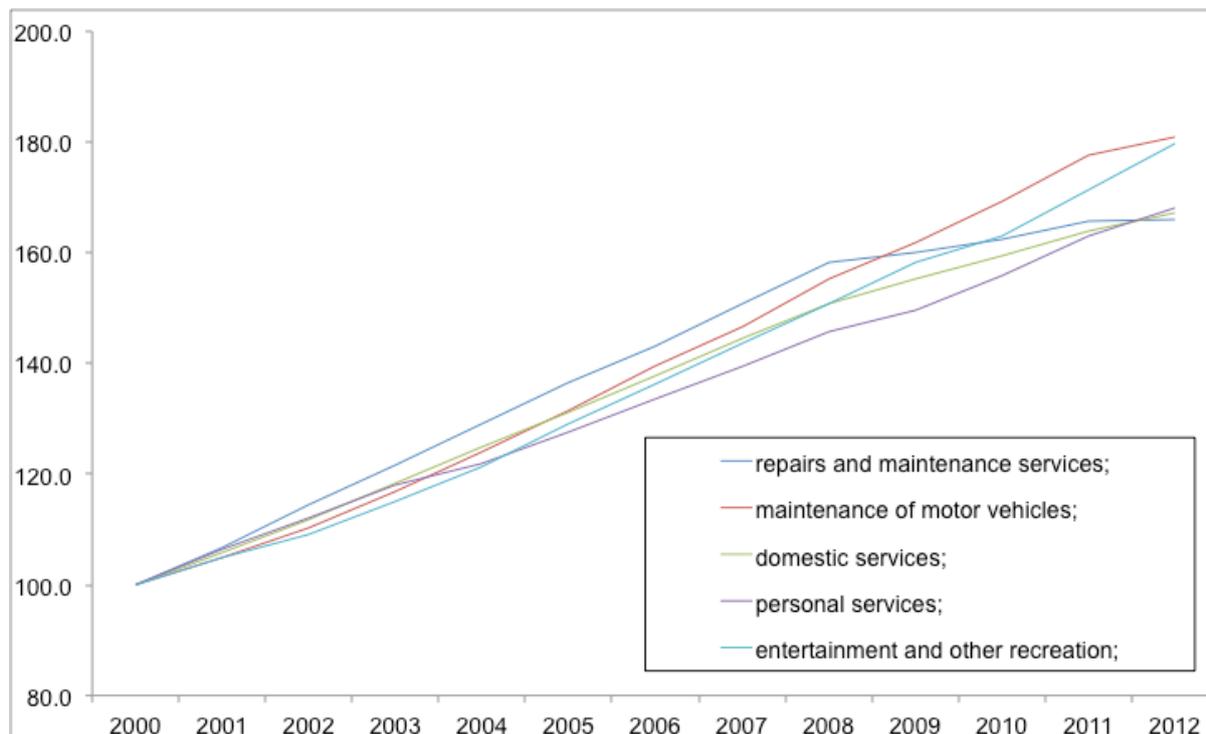
Figures 5.2 and 5.3 plot the relevant data.

**Figure 5.2: Selected SPPI indices**



Source: ONS.

**Figure 5.3: Selected RPI components**



Source: ONS.

The charts show that the selected SPPI indices grew by between 15% and 35% over a 12-year period. The selected RPI indices grew by between 65% and 80%.

### 5.3 Conclusions

Once again, the precise numbers here are not especially important. What matters is that all of the comparator industries have seen costs escalate over time by a non-trivial amount. This reinforces the expectation that there will naturally be an escalation in water retail costs.

## 6. Regulatory options

Having established that there will very likely be a non-trivial escalation in water industry retail costs during the period to March 2020, we turn next to the question of how best to allow for this escalation when calculating price controls.

### 6.1 Allowance for frontier shift

Ofwat’s approach historically has been to factor an allowance for ‘frontier shift’ into companies’ opex and capex allowances. This may be seen in Ofwat’s PR09 allowances for continuing efficiency, in the case of opex, and construction output price inflation, in the case of capex. In both cases, Ofwat:

- started its calculation of expenditure allowances from out-turn costs in a base year (2008/09); and
- rolled forward these base costs year-by-year for the cumulative effects of input price inflation and productivity growth.

Insofar as retail costs were among the expenditures that were dealt with in this way, it would be a continuation of Ofwat’s existing approach to roll forward retail costs for an up-to-date estimate of the sort of frontier shift identified in section 4.

### 6.2 RPI indexation

#### 6.2.1 Principles

Ofwat’s PR09 methodology also created a link between the allowance for cost escalation and RPI inflation. The mechanics of this calculation involved Ofwat first stripping expected nominal costs of expected inflation, i.e.:

$$\text{Real cost allowance}_t = \text{nominal cost allowance}_t \times \frac{\text{RPI}_{\text{base year}}}{\text{RPI}_{\text{forecast, t}}}$$

Ofwat then provided for real prices, and by implication real cost allowances, to be inflated back into the money of the day according to the level of out-turn inflation, i.e.:

$$\text{Real cost allowance}_t = \text{nominal cost allowance}_t \times \frac{\text{RPI}_{\text{base year}}}{\text{RPI}_{\text{forecast, t}}} \times \frac{\text{RPI}_{\text{out-turn t}}}{\text{RPI}_{\text{base year}}}$$

#### 6.2.2 Arguments for RPI indexation

The logic for this approach rests on an assumption that differences between forecast and out-turn RPI inflation will be felt by water companies in the amounts that they pay for labour, materials and other services. If, for example, wage growth unexpectedly exceeds the wage growth that we forecast in section 4, the impact on labour costs will be felt by firms across the economy who might be expected to respond by raising prices thus increasing the rate of RPI inflation. The same process also works in reverse if input price pressures recede. By linking to RPI in the way that we have described it was Ofwat’s intention that costs and prices would remain in alignment as cost pressures change, without the need for explicit regulatory intervention.

Ofwat in its January 2013 methodology paper nonetheless questions whether there should be an RPI link in the retail price controls that it sets for the period 2015 to 2020. The stated reason for this change of approach is that other retail businesses operating in competitive markets do not automatically adjust prices up and down according to the latest RPI readings.

Our take on this matter is that it is correct to observe that competitive retail businesses do not peg their prices to RPI. But it must also be recognised that such businesses do change their prices as input prices increase and productivity improves, as set out in section 5. Moreover, the scale that price changes take is not pre-determined up to five years in advance; rather, prices change in real time according to the actual cost pressures that firms are having to deal with.

Against this backdrop, there is, on the face of it, a credible argument for retaining the RPI link in retail price controls. The architects of RPI – X regulation believed that RPI indexation created a simple but effective means of capturing the effects of changing economy-wide cost pressures within a price cap and this logic does not obviously break down when the business that is having its prices controlled is a stand-alone retail business rather than a vertically integrated water company. Therefore, even though RPI is perhaps an overly simplistic benchmark, it is nonetheless a theoretically valid means of recognising changing price pressures.

### 6.2.3 Arguments against RPI indexation

This is not say that we think it is self-evident that there must be an RPI link in retail price controls. Although not discussed, at least not explicitly, in Ofwat's January 2013 document, there is a reason to question RPI indexation in current circumstances. Specifically, it is not at all obvious that inflation shocks and unexpected differences between actual and expected inflation will be caused by factors that also impact on retail costs. The experience since 2007 has been that inflation shocks have been caused by factors such as:

- sudden changes in commodity prices, including oil/gas prices, food prices and metal prices;
- unexpected changes in the value of sterling, feeding through into changes in the prices of imported goods; and
- unanticipated changes in Bank of England interest rate policy, feeding through into changes in mortgage interest rates.

When one looks at the composition of water industry expenditure, as set out in section 4, it is not obvious that these things are likely to drive changes in retail costs. Insofar as retail costs are predominantly labour costs, it has been especially noticeable in recent years how, with the exception of 2009, unresponsive wages have been to changes in RPI inflation in recent years. Figure 6.1 plots the relevant data.

**Figure 6.1: Average earnings growth vs RPI inflation**

Source: ONS.

There is therefore an argument, based on recent experience, that RPI indexation of retail prices is less likely to bring about a real time alignment of costs and prices and more likely to inject unhelpful noise into prices and company profits.

#### 6.2.4 Our assessment

In our view, this makes the judgment about whether or not retail price controls should be RPI linked a finely balanced one. The composition of RPI is such that changes in inflation could be driven by factors that also impact on retail costs or by factors that have no direct relevance to retail businesses. We do not make a specific recommendation on the way forward on this matter, but leave it to others to judge whether RPI indexation is likely to bring alignment or misalignment between costs and prices.

(We should also emphasise that different considerations apply to the wholesale controls. Here, RPI indexation of allowed revenues is partly indexation of allowed costs, as in the case of retail price controls, but it is also partly indexation of the return of and on the RCV. This means that a clear benefit arises from RPI indexation in the asset-heavy wholesale businesses that is not apparent in the case of the asset-light retail businesses: namely, the creation of an index-linked asset.

We do not think that there is any question that the RPI link in the RCV should remain in place. The evidence shows very clearly that a wide range of investors place a high value on the protection that they obtain from the effects of inflation when they buy into regulated water companies. The RPI link therefore serves to make the sector attractive to investors, so lowering the industry's cost of capital and alleviating financeability constraints. It is not in anybody's interests to eliminate RPI indexation within wholesale controls.)

### 6.3 Alternative forms of indexation

If the problem with RPI indexation of retail price controls is that RPI, as a measure of consumer price inflation, is not always well correlated with retail business cost inflation, one natural response is to look for an alternative, better index.

Looking at the earlier breakdown that we gave of retail costs, one possibility is that Ofwat could link retail prices to a measure of annual wage inflation – e.g. the annual rate of change in the ONS’ average weekly earnings (AWE) index. The calculations would be analogous to the calculations that accommodate RPI indexation. Ofwat would first strip expected nominal costs of expected wage inflation, i.e.:

$$\text{Real cost allowance}_t = \text{nominal cost allowance}_t \times \frac{\text{AWE}_{\text{base year}}}{\text{AWE}_{\text{forecast, t}}}$$

Ofwat would then provided for the deflated cost allowances to be inflated in line with actual earnings growth, i.e.:

$$\text{Real cost allowance}_t = \text{nominal cost allowance}_t \times \frac{\text{AWE}_{\text{base year}}}{\text{AWE}_{\text{forecast, t}}} \times \frac{\text{AWE}_{\text{out-turn t}}}{\text{AWE}_{\text{base year}}}$$

To our knowledge, this would be a completely novel approach for a UK regulator. The nearest comparator that we know of is the method of calculating franchise premia/subsidies in the rail industry, in which payments are indexed to a combination of RPI inflation and average earnings growth.

There is, however, an natural logic in the calculations set out above. The task that we took on in section 4 was to make the best available forecast of cost escalation in the period to March 2020. This forecast will inevitably be wrong by an unknowable amount. The most likely cause of a forecasting error will be that we have under- or over-stated the extent to which wage increases will drive retail costs up over the years ahead. There is therefore sense in at least considering an automatic adjustment mechanism which provides for retail prices to be based on actual rather than expected wage inflation.

We would further suggest that this approach is simple to implement and simple for customers and investors to understand. In the case of the non-household control, it also helps to bring about a level playing field between incumbent retailers and new entrants, who will be feeling the effects of out-turn wage pressures and may be less able than vertically integrated owners to hold prices unchanged and absorb that pressure within the business.

Accordingly, it is a credible option for all parties to consider.

### 6.4 Nominal price controls

The next alternative to RPI indexation is to dispense with indexation entirely and for Ofwat to set fixed nominal price controls. This could be done in a number of ways.

#### 6.4.1 Increasing nominal prices

The first option is to set distinct nominal price controls for each year in the 2015-20 period. Based on the analysis in section 4, the profile might be one in which price caps increase by

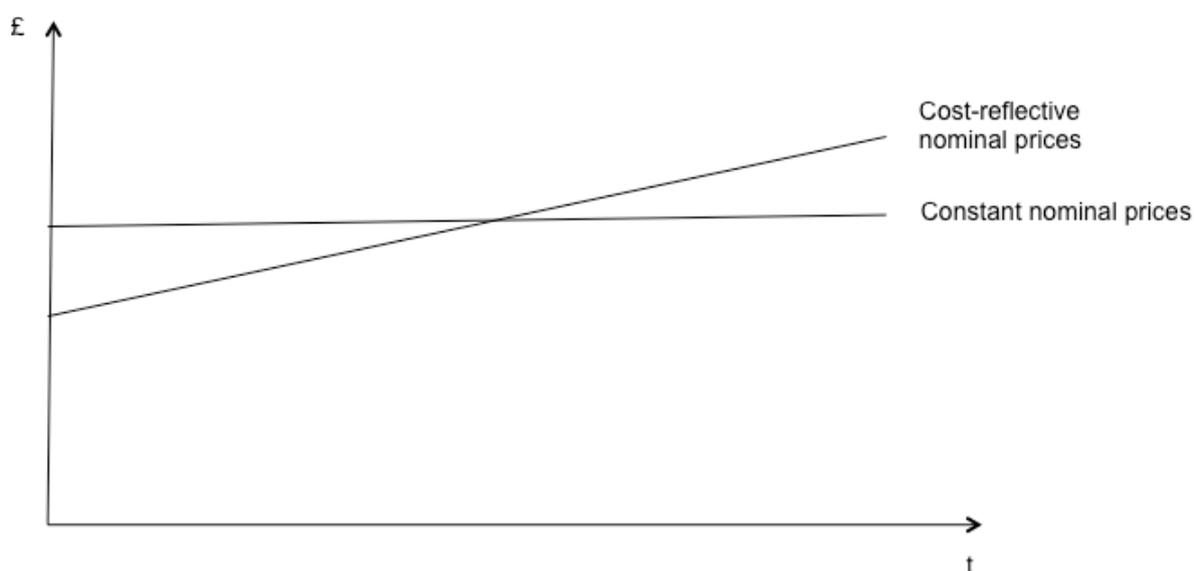
between 2% and 3% per annum, allowing for both expenditure allowances and margins to increase over time.

This approach requires companies to bear the risk that forecasts of cost escalation will turn out to be too low or too high. Conversely, it gives a degree of price certainty to customers and to new entrant retailers. It could be argued to be superior to indexed price controls if one considers that indexation is more likely to bring about misalignment rather than alignment of costs and prices. It would be inferior to indexed price controls if there is reason to worry that forecasts of cost escalation are subject to sizeable error and if linking to RPI, average earnings growth or some alternative index will naturally reduce this error when it emerges.

#### 6.4.2 Flat nominal prices

A variant of the first option is to provide for a constant level of prices over a five-year period. Figure 6.2 presents this option graphically.

**Figure 6.2: Cost-reflective versus constant nominal prices**



The diagram shows that Ofwat would not, and could not, ignore expected cost escalation. But it could avoid having to provide for annual changes in price cap by setting a five-year cap at a level that initially over-compensated expected retail costs and later under-compensated expected retail costs.

This further simplifies retail regulation from the perspective of customers and new entrant retailers. But it does also mean that prices are not fully cost-reflective.

#### 6.4.3 Provide for cost escalation within the allowed margin

Ofwat suggests a third option in its January 2013 document:

ensure that the ... retail control[s] over the period 2015-20 has sufficient net margin to cover the risks of unexpected uncontrollable changes in input prices

We think that this option is misconceived. If cost escalation were merely a possibility, then there would be logic in asking companies to bear the risk and having customers pay a slightly higher margin than would otherwise be the case as compensation. The reality, however, is different. The analysis in preceding section of this paper shows clearly that there can be a very high degree of confidence that retail costs will change before March 2020. In

these circumstances, Ofwat cannot ignore cost escalation and has to provide upfront for the expected upward movement in costs within the price control.

To do otherwise would confer on incumbent companies near certain losses in the years ahead. It would also mean that the margins that are available to new entrants erode significantly over time. Neither of these outcomes would be consistent with Ofwat's statutory duties. We do not therefore consider it to be a credible option.

## 6.5 Summary and evaluation

The four credible options that emerge from this analysis are for Ofwat to:

- 1 factor expected annual cost escalation in real terms into the calculation of retail price controls which subsequently index in line with out-turn RPI inflation;
- 2 factor expected annual cost escalation, absent wage growth, into the calculation of retail price controls which subsequently index in line with out-turn growth in the ONS' average weekly earnings index;
- 3 set year-specific nominal price caps containing a fixed allowance for expected cost escalation; and
- 4 set a fixed five-year nominal price cap containing a fixed allowance for expected cost escalation.

Each of these options have pros and cons. The relevant evaluation criteria might include the quality of the match that Ofwat obtains between costs and prices and the overall simplicity, transparency and understandability of the regulatory regime for retail activities.

We do not think it is possible to state that any one of these options is clearly superior to the other three. Our slight preference would be for option 3 on the grounds that:

- RPI indexation (option 1) has in recent years brought about misalignment rather than alignment between costs and prices. Although it is impossible to say that this will again be the case in the period 2015-20, the recent past gives sufficient cause to doubt whether a link to RPI is always a good thing;
- indexation to average earnings growth (option 2) would take UK economic regulation into new territory. Although Ofwat is not being shy about regulatory reform in PR14, this might be one innovation too far for some stakeholders; and
- a fixed five-year cap (option 4) is somewhat contrived and requires all parties to accept misalignment between costs and prices in most years of the new price controls. This does not seem to us to send the right signals to customers or to new entrants in a market that is supposed to be becoming less regulated and more competitive.

We can well understand that others might take a different view on these matters, especially on the alignment/misalignment that RPI indexation would bring about and on the extent to which option 2 is too radical. Accordingly, we put forward all four of the options for Ofwat, companies and customers to consider further during the discussions which are to take place in the coming months.

This means that the main takeaway from this paper is the evidence in sections 3, 4 and 5 that retail costs can be assumed to escalate over time in a way that is both material and beyond the full control of management. We would hope that the contribution that we make in this paper is to convince all parties that the debate during the remainder of the periodic review should be about how best to allow for this escalation within price cap calculations rather than about the likelihood or otherwise of costs changing.

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