

Water retail net margins

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Contents

<i>Summary</i>	<i>4</i>
<i>1. Introduction</i>	<i>7</i>
Background	7
Methodology for setting a retail net margin	7
<i>2. Comparator Analysis</i>	<i>11</i>
What makes a good comparator?	11
Comparator analysis	12
<i>3. Cross-check</i>	<i>17</i>
Return on capital approach	17
Capital requirement	17
Cost of capital	17
Results	18
<i>4. Adjustments</i>	<i>19</i>
Single Margin Rule	19
Working capital	21
<i>5. Conclusions</i>	<i>26</i>

Summary

Ofwat will set separate allowed revenues for wholesale and retail activities for the first time at PR14. This will include two binding retail controls – one for household customers and one for non-household customers.

This paper sets out our views on appropriate retail net margins in the context of the PR14 retail controls. We assess retail net margins for the separate household and non-household controls using a definition of the allowed return as retail EBIT as a proportion of retail turnover (i.e. including wholesale charges).

The net margin is intended to provide an efficient company with a normal return that is appropriate to the capital employed and risks as a retailer. In contrast to the wholesale business, which has significant long lived tangible assets, the retail business is relatively asset light and working capital is a key component of its capital employed. This means traditional return on capital approaches are less suited to assessing appropriate returns.

For non-household retail activities, a further consideration is that retailers will face additional risk from the opening of the market to competition from 2017 (with the exception of those non-household large scale customers with annual water consumption greater than 5Ml in England and greater than 50Ml in Wales, who are already allowed to switch water supplier under existing Water Supply Licensing arrangements). Margins will be applied to default (or backstop tariffs) and competition will be the key driver of prices and services levels. It is therefore important that the default tariff and non-household retail margin allow scope for competitive entry into the market.

We have used comparator analysis as the main approach to assessing appropriate retail margins, using industries (such as energy, post, rail and telecoms) where retail margins are set by regulators, as well as the segmental accounts of businesses in these industries to understand typical retail net margins achieved. Where possible, we have separated household margins from non-household margins, for example, in the energy sector where separated accounting is required by the regulator, Ofgem. We have conducted a cross-check to the comparator analysis using a return on capital approach. This is a bottom-up approach which requires an assessment of the capital employed in retail assets and an appropriate cost of capital to calculate a return expressed as a retail margin.

We set out proposed ranges for retail net margins on the basis of the segmental (household v non-household) variations within our findings. Because of these differences, we recommend that household and non-household retail net margins should be set differently.

The table below sets out our findings for the appropriate net Earnings Before Interest and Taxation (EBIT) margin range for retail water and wastewater businesses in England & Wales.

Retail net margin ranges for E&W water and wastewater businesses

Retail net margins	Household margin and Non-household margin in Wales	Non-household Margin in England
Benchmark approach	0.5% to 2.0%	1.0% to 4.0%
Cross-check: return on capital approach	0.59% to 0.88%	0.55% to 1.10%

The range for the household segment of 0.5% to 2.0% is drawn from regulatory determinations in largely non-competitive markets. We expect water retailing risks to be below other regulated sectors, such as energy, which

faces higher price variability, political risks and requirements to discharge environmental and social obligations. This suggests a lower figure in the range is appropriate.

For the non-household segment we suggest a higher range is appropriate. This is because of the additional risks in this segment relating to the introduction of competition (albeit only from 2017). The only purely non-household regulatory comparator is the Water Industry Commission for Scotland (WICS) determination for Business Stream activities, averaging at 3.2%, but there are considerable differences between water retailing in Scotland and England. Working capital requirements for water companies in England are likely to be more favourable, which indicates the net retail margin for non-household customers should be below the 3.2% figure.

For the low end of the non-household range, we start with the low end of segmented benchmarks, but adjust downward for differences between water retailing and energy retailing, while keeping it above the low end of the household margin range. This suggests a figure of around 1.0%. However, non-household margins achieved by comparators are typically significantly higher, averaging 4.5% over the period 2009-11. We do not consider non-household water retail margins should be as high as other sectors, including energy, so we suggest an upper bound to the range for non-household retail net margins of 4.0%, although actual realised non-household margins, across the industry, are likely to fall below this level.

As the non-household segment in Wales will not be further opened to competition, beyond the >50ML segment that is already open, we consider the household margin to be appropriate for the less than 50ML non-household market in Wales.

The cross-check return on capital approach suggests a minimum margin of 0.6% for both household and non-household retail activities¹. Given this approach is likely to omit some sources of economic capital and some retail specific risks, this suggests that both the household and non-household margins should be set above 0.5% and not at the bottom end of the benchmark range.

We have also considered two factors which could be used to adjust the retail net margin: the Single Margin Rule and working capital.

Single Margin Rule

The Single Margin Rule adjustment in Ofwat's final methodology statement reduces retail returns by the amount of return earned on legacy retail assets which remain in the wholesale RCV. This avoids double counting the return on retail assets in both the wholesale and retail controls. We estimate the size of the Single Margin Rule adjustment to be around 0.1 percentage points on the retail net margin over the period 2015-2020. This is likely to have diminished to a negligible amount by the end of the 2015-2020 period.

Application of the Single Margin Rule interacts with the assessment of the wholesale WACC. Because the Ofwat assessment of wholesale returns deducts a portion of the retail margin from the appointee WACC², this means that any Single Margin Rule adjustment to the retail margin is reversed in the calculation of the wholesale WACC. Application of the Single Margin Rule does not therefore impact overall appointee returns, but it does impact the balance of returns across retail and wholesale controls. Application of the Single Margin Rule will better reflect appropriate returns in each control, in relation to the capital employed, but over the longer-term, as legacy retail assets contained in the RCV fall, the Single Margin Rule will not be required.

Working capital differences

We have analysed working capital differences in water companies compared to the working capital employed by companies considered in the benchmark analysis. The result is that a seven (7) days trade working capital allowance could be added to the retail net margin, to achieve equivalent working capital treatment for water companies compared to the comparators. We have not examined an efficient amount of working capital for the

¹ The return on capital cross-check is calculated using unadjusted inputs drawn from PR14 business plans. Following more extensive review during the course of the Risk-based review, Ofwat may refine estimates of capital required in retail businesses.

² Ofwat (2014), 'Setting price controls for 2015-20: Risk and Reward Guidance', Appendix C.

water industry; rather we take the figures as provided in annual reports. We have assumed that this additional working capital is funded by debt, at a rate of 3.2%, and this suggests retail net margin from the benchmarks could be increased by a 0.06 percentage point adjustment to reflect the trade working capital cost difference between the comparators and water companies.

The overall net impact of the Single Margin Rule and an adjustment for working capital differences is therefore likely to be negligible.

1. Introduction

Background

In previous price controls in the water sector, companies earned a return of the allowed cost of capital on the total assets of the integrated water business. The new approach in PR14 for determining retail price limits is that Ofwat will set two binding retail controls – one for household customers (revenue based) and one for non-household customers (a default price control)³. Retailers will be allowed a margin on top of allowable wholesale charges and retail costs.

Retail controls for household customers will no longer be indexed to RPI. Instead, water companies will be encouraged to focus on reaching, and beating, the average cost to serve for each household customer⁴. By allowing a net margin for the household retail control, it will be possible to provide a return on retail assets invested during the control period, finance working capital requirements and compensate the retail business for risks involved in providing household retail services.⁵

With the introduction of competition in the non-household market from 2017, a default tariff will be set in order to define the maximum price for a minimum service level. The main reasons for setting a net margin for the non-household retail control are to secure efficient finance for capital employed, remunerate risk for operators, and to encourage entry into the industry⁶. Ofwat expects that by focusing on outcomes as well as total expenditure, this framework will give water retailers greater freedom to change the way they deliver their commitments in the future. The allowed retail net margin will be added to the allowed costs in the setting of default tariffs.

Over time, we can expect benefits from competition. These benefits arise from the anticipated improved productivity and innovation in water retailing for non-household customers, driven by competitive rivalry between companies, including rivalry created by new entrants. Over time, this should lead to lower prices and other non-price benefits, such as improved service levels. Operators may also find ways to lower the cost of procuring wholesale water, which will similarly lead to downward pressure on the price for consumers.

Methodology for setting a retail net margin

We have used two approaches for assessing retail net margins: (i) top down comparisons of net margins from benchmarks; and (ii) a bottom-up return on capital (ROC) approach.

The approach of top down comparator analysis cross-checked with bottom-up analysis has regulatory precedent in a study of the financeability of the Royal Mail universal service. The postal service regulator, Postcomm (now Ofcom), applied a sector comparator approach⁷ supported by return on capital in setting the Royal Mail price control from 2012.

Because retail businesses are ‘asset-light’, the economic capital invested in retail activities may comprise broader intangible assets, such as brands, reputation, trained workforces and IT system development. These are typically not fully captured in accounting values of assets in retail businesses. There may also be additional retail risks which are not captured in a traditional return on capital approach, such as major operational

³ Ofwat, July 2013, Setting price controls for 2015-20 – final methodology and expectations for companies’ business plans [http://www.ofwat.gov.uk/pricereview/pr14/pap_pos201307finalapproach.pdf]

⁴ Ibid

⁵ Ibid

⁶ Ibid

⁷ <http://stakeholders.ofcom.org.uk/binaries/consultations/review-of-regulatory-conditions/statement/statement.pdf>

failures, reputational damage and the risk of stranded assets caused by market share loss. If these risks are not captured in the underlying assessment of costs, the businesses may require higher margins. For both these reasons we consider the ROC approach as a minimum, rather than appropriate full retail margin.

We then suggest a range for net margins based on the combination of both approaches.

Comparator Analysis

As the primary measure of net margin analysis, we adopt comparator analysis. We set out what makes a good comparator, as well as the key variables for comparison in the following Section.

The most widely used approach to comparator analysis uses EBIT margin⁸, which is operating profit (after depreciation) divided by sales, or a “return on sales”.

$$EBIT\ Margin = \frac{Operating\ Profit}{Revenue}$$

Based on this definition, depreciation should be included in the Average Cost to Serve (ACTS) for retail activities.

We have assessed comparators’ net margin using two methods:

1. Retail net margins set by regulators.

In the UK and other countries, regulated industries’ retail net margins have been set as part of regulatory determinations. While the format regulatory determinations does not always provide a net margin for benchmarking purposes, we have collated margins across utility regulators to identify the typical range of allowed net margins across these businesses. The comparators are generally vertically integrated businesses, with both wholesale/generation/production as well as supply/retail segments.

2. Actual margins observed in company financial statements

Where comparator companies have segmented accounts with their retail business separately identified, we are able to extract relevant margin information. The retail net margin is calculated using the comparator’s retail turnover. Where possible, we have also separately examined household and non-household retail net margins.

Return on capital cross-check

As the secondary measure of net margin analysis, we use a ROC approach. Using this approach we appraise the capital employed on retail activities and the cost of the capital.

Capital assessment

There are two possible approaches to determining the capital requirement: bottom-up analysis of capital requirements or information from historic accounts.

One approach to assessing the level of capital required by a retail business would be to establish the current economic value of capital required to provide retail activities. This approach would require information on the current cost of major cost items, such as billing and customer relationship management systems, as well as other hardware costs, such as IT. However, we do not have access to the level of detail required to perform such

⁸ We also considered alternatives such as the Return on Capital Employed (ROCE), which is post tax earnings divided by total capital. However, there are well known drawbacks to this approach, particularly when comparing businesses with different asset maturity, or when assets were purchased at different times in the historical accounts.

a bottom-up analysis of economic costs, so we use accounting values contained in the company PR14 business plan submissions for our estimate of capital employed.

The other significant capital requirement is for short-term working capital purposes to fund debtor balances (net of creditor balances). We have extracted information on working capital requirements across the industry from PR14 business plans.

Cost of capital

For the cost of financing retail assets we use a weighted average cost of capital. The cost of capital represents the rate of return a company should expect to earn on its invested capital, in order to provide sufficient returns to the investors who are financing the business. Upstream and downstream activities may have different systematic risk and should be appraised at their own cost of capital. Different areas of retail may also have different systematic risks (e.g. industrial users vs. households).

Corporate Finance theory is clear that a distinct part of the value chain should be appraised on its own risks as opposed to the group's risk profile:

“The discount rate at which a company assesses an investment opportunity should be calculated separately for that opportunity, and will not necessarily be the same as the overall cost of capital for the company”⁹

The regulatory cost of capital is therefore a blend across different activities: Ofwat has historically regulated Water and Sewage Companies (WaSCs) and Water only Companies (WoCs) using a unified regulatory model, without explicitly making a distinction between an upstream and downstream cost of capital.

Regulators have in the past assessed the cost of capital for distinct regulated activities. For example, when setting the cost of capital for BT, Ofcom made a distinction between its core copper network (wholesale) and the rest of BT Group (including retail, ICT etc)¹⁰. Whilst not directly comparable with the water sector it does point towards existence of such risk differentials across regulated businesses.

Assessing the cost of capital for a component of a vertically integrated business can be difficult, as the cost of capital is typically not observable. As such, there will be a high degree of judgement in assessing an appropriate cost of capital, given that the water companies will remain vertically integrated.

For the purpose of our cross-check we use Ofwat's view of the overall appointee WACC, uplifted to provide a pre-tax figure (and therefore comparable to a pre-tax EBIT margin). This may understate the true cost of capital for the retail business, and merely suggests the returns the retail assets had been earning under the previous regulatory methodology. This again suggests the cross-check should be considered a lower bound.

Customers: household and non-household differentiation

For household retail controls, where there is no competition, the objective of regulating retail prices (which includes both how costs are set and the appropriate margin) is to protect customers by only allowing the recovery of efficient costs. Quality of service is protected by the Service Incentive Mechanism (SIM), which provides a regulatory incentive to improve quality of service.

Non-household customers served by companies wholly or mainly operating in England are, under the Government's proposals, expected to be eligible to switch supplier from 2017¹¹. Estimated non-household

⁹ Ogier, Rugman and Spicer (2004), *“The real cost of capital”*, page 170.

¹⁰ Ofcom (2005) “Valuing Copper Access”, <http://stakeholders.ofcom.org.uk/binaries/consultations/copper/statement/statement.pdf>

¹¹ Non-household premises with annual water consumption greater than 5Ml in England and greater than 50Ml in Wales are already allowed to switch water supplier under existing Water Supply Licensing arrangements. These arrangements cover the largest c.25000 sites in England and Wales and will be superseded by the proposed new market arrangements from 2017. The approach to setting margins for the very largest non-household customers of Welsh companies (those using more than 50 Ml/year of water) was set

revenues in business plans reflect companies' assumptions for their default tariffs¹². In practice, companies will be able to offer different levels of service and different prices to their customers. For this reason, actual revenues are likely to be lower than those included in business plans and set by the price controls.

These features of the non-household market mean there are additional considerations in setting appropriate margins, including ensuring sufficient headroom to encourage market entry. The objective is not to seek to directly replicate competitive market outcomes through price setting but, rather, to ensure the framework encourages innovation and efficient entry. There are also differences in the risk profile of non-household retailers, due to the opening of this market segment to competition from 2017. Ofwat has taken a policy decision to deploy a 'safeguard' default tariff because in principle effective competition should develop in the long run to protect customers.

There is some uncertainty regarding what level of margin that might be needed to achieve (efficient) entry. A balance must be struck between setting margins too high so that customers suffer unduly higher prices in the short term and setting margins so low such that competition fails to develop and customers don't benefit from longer term cost reductions.

Therefore, we have assessed household retail net margins and non-household margins separately.

out in PR14 final methodology : *"we think it is appropriate that default tariffs for these customers are set consistently with those of English companies – so we will assess companies' proposed net retail margins for these customers in line with our assessment of non-household net margins for English companies"*, Page 134.

¹² Companies operating wholly or mainly in Wales will not be subject to competitive pressure, but will be subject to an efficiency challenge and a service incentive.

2. Comparator Analysis

What makes a good comparator?

In the following Section we set out what makes a good comparator for water retail businesses in England and Wales. Relevant characteristics we have considered include:

- **Geography:** Companies from the UK, including Northern Ireland, Scotland, and England, as well as the Republic of Ireland, are likely to be most relevant. Unless there is a shortage of appropriate comparators, then we would not recommend using European or other international comparators where market dynamics and regulatory regimes can be significantly different to the UK.
- **Scale:** Given water companies are relatively large scale, similarly large scale businesses are relevant, ideally supplying a national or broad regional customer base rather than niche geographic markets. The retail function should be in industries where there is universal or mass-market service and a degree of natural monopoly in the wholesale business.
- **Asset light:** Companies that are “asset light” are more comparable to water retailing activities. Companies, or their divisions, that do not own infrastructure, but generally operate in the retail space are, therefore, more relevant comparators. While the retail part of the value chain should be asset light, other parts of the value chain should be capital intensive (like wholesale water and wastewater activities).
- **Stability:** It is important to consider comparators that will be affected by macro-economic shocks in similar ways to the water industry. Water demand is very inelastic, so industries that have relatively inelastic demand are more relevant.
- **Market dynamics:** Regulatory benchmarks in those sectors with little or no competition will be appropriate for benchmarking water household controls. As the UK water industry is set to introduce competition for non-households in 2017, there should be at least some degree of competition in the selected benchmarks in the non-household segment. Where competition is present, we expect participants to compete on price and customer service, trading high volumes with small margins per transaction.

There will never be perfect comparators and a degree of judgement will be required in selecting appropriate comparators. We conclude that sectors which are likely to contain relevant comparators include the following:

- Scottish water retailing
- England and Wales energy retailing
- Irish energy retailing
- UK telecoms retailing
- UK postal retailing

Factors potentially affecting comparability

There are two key factors that could impact on the comparability of different companies:

1. Timing of data

There is inherent variability in annual benchmark financial data. We can partly mitigate this by using an average of margins over a number of years to smooth out this variability.

2. Comparability of different payment terms and their timing

While almost all non-household water customers pay in arrears, household customers pay in advance where they are not metered. For benchmarking household margins, comparators that have a mix of payment in advance and arrears will be relevant. For benchmarking non-household margins, comparators where customers pay in arrears will be relevant (e.g. energy retailers). The alternative is to make specific adjustments to the benchmarks for working capital differences. We separately investigate the impact of working capital in Section 4.

Comparator analysis

We have used regulatory determinations from Water Industry Commission for Scotland (WICS), Ofgas, Commission for Energy Regulation (CER), Utility Regulatory (UREGNI), and Offer.

We have considered actual margins from the “Big 6” energy companies as well as water retailing in Scotland, mobile telecoms retailing, train operators and postal retail operations. Following Ofgem’s supply probe, big energy companies are required to produce accounts which segment their supply and generation activities. This means we can present overall retail net margins and separated household and non-household margins (termed domestic and non-domestic in energy).

The sources for both regulatory determinations and financial accounts are set out below:

Table 1: Sources for regulatory determinations

Industry	Regulation	Geography	Year
Gas	CER ¹³	Ireland	2012
Energy	UREGNI (Power NI) ¹⁴	Northern Ireland	2011
Electricity	CER ¹⁵	Ireland	2010
Energy	UREGNI (Phoenix Supply) ¹⁶	Northern Ireland	2009
Water	WICS ¹⁷	Scotland	2005
Energy	Ofgem / Offer ¹⁸	UK	1998
Water	MMC (Scottish Hydro-Electric) ¹⁹	UK	1995
Energy	Offer ²⁰	UK	1994

Source: See footnotes

¹³ <http://www.cer.ie/docs/000874/cer13204-bg-energy-retail-tariffs-decision-paper.pdf>

¹⁴ http://www.uregni.gov.uk/uploads/publications/Decision_Paper_for_Power_NI_Price_Control_V1_o.pdf

¹⁵ <http://www.cer.ie/docs/000044/cer10067.pdf>

¹⁶ http://www.uregni.gov.uk/uploads/publications/GAS_Final_determination_15apr08.pdf

¹⁷ <http://www.watercommission.co.uk/UserFiles/Documents/final%20determination.pdf>

¹⁸ <https://www.ofgem.gov.uk/ofgem-publications/79079/price-controls-and-competition-consultation-paper.pdf>

¹⁹ http://webarchive.nationalarchives.gov.uk/2011202195250/http://competition-commission.org.uk/rep_pub/reports/1995/367scottish.htm#full

²⁰ <http://www.water.org.uk/home/policy/publications/archive/finance/financing-/retail-margins--final-.pdf>

Table 2: Sources for actual company margins

Industry	Company	Geography	Year
Energy	Centrica plc	UK	2009-2011
Energy	E.ON UK plc	UK	2009-2011
Energy	EDF Energy Holdings Ltd	UK	2009-2011
Energy	Scottish Power Ltd	UK	2009-2011
Energy	SSE plc	UK	2009-2011
Energy	RWE Npower plc	UK	2009-2011
Energy	First Utility Limited	UK	2009-2011
Energy	Good Energy Limited	UK	2009-2011
Water	Scottish Water Business Stream Limited	UK	2009-2011
Telecoms	BT Retail	UK	2009-2011
Telecoms	Tesco Mobile Limited	UK	2009-2011
Telecoms	Lebara Mobile Limited	UK	2009-2011
Telecoms	Lycamobile UK Limited	UK	2009-2011
Rail	London Overground Rail Operations Limited	UK	2009-2011
Rail	First Capital Connect Limited	UK	2009-2011
Post	Royal Mail Group Limited (Post Office Limited)	UK	2009-2011

Source: Company accounts. A broader number of comparators were examined within chosen sectors, but were rejected on the basis of size or a lack of segmental transparency within financial accounts. We include comparators with negative margins, but exclude companies with persistently negative margins, as this suggests the business is not sufficiently mature.

Regulatory determinations

Regulatory determinations represent margins for low risk monopoly providers, where there is little or no risk of new entrants or of customers switching. As a result of opening the retail non-household water market to competition, water retail businesses will be exposed to these risks (in the non-household sector). Therefore, the non-household margin should be higher than that set in these regulatory benchmarks.

Regulatory determinations in the past have been based on retail EBIT as a proportion of retail revenues, and do not include revenues associated with non-regulated assets as a component of EBIT or turnover (i.e. operating costs for regulated component plus allowed margin). This is on an equivalent basis to Ofwat’s proposed PR14 “ACTS + margin” approach for the household retail control.

Table 3: Margins from regulatory determinations

Regulator	Year	Margin/Turnover (%)	Segment
Commission for Energy Regulation	2012	2.0	HH and NHH
Utility Regulator Northern Ireland	2011	1.7	HH and NHH
Commission for Energy Regulation	2010	1.3	HH and NHH
Utility Regulator Northern Ireland	2009	1.5	HH and NHH
Water Industry Commission Scotland²¹	2005	3.2	NHH
Ofgem / Offer	1998	1.5	HH and NHH
Monopolies and Mergers Commission	1995	0.5	HH and NHH
Offer	1994	1.0	HH and NHH

Note: HH = Household, NHH = Non-household

²¹ WICS determined the gross margin required, the mean net margin has been calculated

Segmented entity accounts

Table 4 below sets out retail net margins from company retail activities contained within segmented financial accounts, or overall margins from predominantly retail companies. These comparators are now predominantly in competitive retail markets (and therefore more comparable to the non-household retail segment).

Table 4: Margins from actual company performance, 2011

Company	Retail EBIT/ Retail turnover	Household EBIT/ Household turnover	Non-household EBIT/ Non- household turnover
Centrica plc	6.84	6.86	6.79
E.ON UK plc	3.31	1.98	5.05
EDF Energy Holdings Ltd	(0.86)	(4.84)	2.38
Scottish Power Ltd	0.15	(0.43)	1.82
SSE plc	3.59	5.77	0.18
RWE Npower plc	1.18	(1.81)	4.24
First Utility Limited	1.65	N/A	N/A
Good Energy Limited	6.15	N/A	N/A
Average energy ²²	2.59	1.26	3.41
Scottish Water Business Stream Limited	6.98	N/A	6.98
Average energy and water	3.14	1.26	3.92
BT Retail	17.3	N/A	N/A
Tesco Mobile Limited	0.01	N/A	N/A
Lebara Mobile Limited	1.83	N/A	N/A
Lycamobile UK Limited	3.98	N/A	N/A
Average BT + mobile	5.78	N/A	N/A
London Overground Rail Operations Limited	0.65	N/A	N/A
First Capital Connect Limited	0.50	N/A	N/A
Royal Mail Group Limited (Post Office Limited)	7.37	N/A	N/A
Overall average	3.78	1.26	3.92

Source: Company accounts

We also set out average margins over a three year period to reduce some of the variation caused by focussing on a single year.

Table 5: Average margins from actual company returns, 2009-2011

Company	Average Retail EBIT/Retail turnover, 2009-2011 (%)	Household EBIT/ Retail turnover, 2009-2011 (%)	Non-household EBIT/ Retail turnover, 2009-2011 (%)
Centrica plc	6.69	7.78	4.70
E.ON UK plc	2.48	(0.05)	5.99
EDF Energy Holdings Ltd	(0.14)	(5.38)	3.54
Scottish Power Ltd	2.15	0.39	7.19
SSE plc	3.72	4.66	2.24
RWE Npower plc	(1.24)	(4.47)	2.27
First Utility Limited	(12.71)	N/A	N/A
Good Energy Limited	5.62	N/A	N/A
Average energy	1.45	0.49	4.32
Scottish Water Business Stream Limited	5.26	N/A	5.26

²² First Utility Limited and Good Energy Limited have been combined as one in calculating the average due to their small market size relative to the big 6.

Average energy and water	1.92	0.49	4.46
BT Retail	15.7	N/A	N/A
Tesco Mobile Limited	0.03	N/A	N/A
Lebara Mobile Limited	3.06	N/A	N/A
Lycamobile UK Limited	(9.53)	N/A	N/A
Average BT and mobile	2.32	N/A	N/A
London Overground Rail Operations Limited	2.99	N/A	N/A
First Capital Connect Limited	0.43	N/A	N/A
Royal Mail Group Limited (Post Office Limited)	4.67	N/A	N/A
Overall average	2.18	0.49	4.46

Source: Company accounts

We note that the margins for mobile telecoms retailers and train operator companies are particularly volatile from year to year, making comparisons to water retailing difficult. BT and Royal Mail's retail activities are also substantially more complex retail operations in industries with greater demand uncertainties²³. As such, we focus on energy and water retailers in Table 5.

We would expect that the large volumes available to retailers in the water industry and the relative simplicity of retailing water (particularly in relation to lower price variability) means that water retailing margins do not need to be as high as energy retail margins.

Table 6: Summary of ranges for retail margins

	Regulatory determination (%)	Retail EBIT / Retail Turnover	Household EBIT/ Retail Turnover	Non-household EBIT/ Retail Turnover
Retail net margin	0.5-3.2	(12.71)-15.7	(5.38)-7.78	2.24-7.19

Recommendations

We separate our recommendations into household and non-household retail net margins.

For household margins, the regulatory benchmarks provide the better guide, as they relate to determinations with little or no competition. The WICS comparator is for non-household activities, so is not appropriate for determining a household retail net margin. These other regulatory determinations therefore suggest a range of 0.5% to 2.0% for households (and non-households in Wales). We would expect the appropriate margin for water retailing in the household segment to be at the lower end of this range, because, in comparison to the benchmarks, it has simpler retailing processes, less price volatility, lower political risk and fewer requirements to discharge environmental and social obligations.

For non-household margins, we suggest a higher range is appropriate. This is because of the additional risks in this segment relating to the introduction of competition (albeit only from 2017). The only non-household regulatory comparator is the WICS determination for Business Stream activities, averaging at 3.2%, but there are considerable differences between water retailing in Scotland and England. Working capital requirements for water companies in England are likely to be more favourable, which indicates the net retail margin for non-household customers should be below the 3.2% figure.

For the low end of the non-household range, we start with the low end of segmented benchmarks, but adjust downward for differences between water retailing and energy retailing, while keeping it above the low end of

²³ We have taken Post Office Limited as representative of Royal Mail's retail operations. Post Office Limited run the national network of branches providing access to postal and other counter services.

the household margin range. This suggests a figure of around 1.0%. However, non-household margins achieved by comparators are typically significantly higher averaging, 4.5% over the period 2009-11. For reasons set out above, we do not consider non-household water retail margins should be as high as other sectors, including energy, so we suggest an upper bound to the range for non-household retail net margins of 4.0%, although actual realised non-household margins, across the industry, are likely to fall below this level.

Table 7: Summary recommendation of net margin ranges

Segment	Lower retail net margin bound (%)	Upper retail net margin bound (%)
Household in England and Wales and Non-household in Wales	0.5	2.0
Non-household in England	1.0	4.0

3. Cross-check

Return on capital approach

The return on capital cross-check requires quantification of both retail assets and working capital requirements. This capital employed is multiplied by a cost of capital and then expressed as a proportion of total allowed revenues to calculate a retail net margin. We carry out the return on capital cross-check using industry-wide data.

Capital requirement

The first stage of the return on capital approach requires an assessment of the capital employed in providing retail services. We have extracted retail asset net book values from company PR14 business plans submitted to Ofwat.

Over the whole period 2015 to 2020 the value of retail assets averages £483m at the industry level. For comparison purposes, the 2012-13 closing RCV for the industry was approximately £50bn, which provides an indication of the small scale of retail assets as a proportion of overall water industry assets.

We have extracted working capital information from company PR14 business plan submissions. The total working capital requirement across both household and non-household activities is projected by companies to be £757m in 2015 rising to £1057m by 2020.²⁴

Cost of capital

The cost of capital appropriate for retail activities is likely to be different to wholesale activities. We would expect retail activities to have lower gearing, and potentially higher systematic risk, but this would depend upon how much demand risk is borne by the retail business and the nature of the contractual terms with the wholesale business.

To calculate a cost of capital, we use the appointee WACC figure proposed by Ofwat in its pre-qualification guidance²⁵. Given we expect the retail WACC to be higher, this provides a further reason of why this return on capital cross-check will produce a figure that is likely to be less than an appropriate retail margin.

Because we are using a historic cost basis of valuing assets, we use a nominal WACC, which incorporates inflation. We also convert the appointee vanilla WACC into a pre-tax equivalent, which is then consistent with an EBIT margin. This converts the vanilla WACC of 3.85% into a pre-tax nominal WACC of 7.6%.

There are two options for assessing the cost of working capital. One perspective does not distinguish between the cost of capital across the different assets used by a business, whether fixed assets, or working capital. Essentially, all the financing of a business goes to finance all of its assets. This explains why the source of financing should not determine the cost of capital for a project or investment, rather the cost of capital is determined by the project or investment's risk characteristics. This perspective suggests the business cost of capital should be used as the cost of capital for working capital.

²⁴ We have not sought to examine or validate the efficiency of the industry working capital requirements. If Ofwat were to identify efficiencies in working capital requirements, then the return on capital approach would produce lower retail margin estimates.

²⁵ Ofwat (2014). "Setting price controls for 2015-20 – risk and reward guidance"

An alternative perspective is that working capital is typically more short-term and lower risk than other assets used in a business. Incremental working capital can usually be financed through relatively cheap short-term finance facilities. This suggests that if the overall business cost of capital were deconstructed, working capital balances should attract a lower cost of capital (and other parts of the business would attract a higher rate).

We have prepared our analysis using both approaches to the cost of capital for working capital. For the purpose of assessing a specific cost of working capital, using short-term debt facilities, we reviewed water company PR14 business plans for companies' estimate of their working capital cost of financing rate. A number of water companies suggested their working capital cost of financing was higher than their long-term cost of debt, which we consider unrealistic given the short-term nature of financing working capital. For this reason we selected a figure towards the bottom end of company submissions, averaging 3.2%. This is already a pre-tax rate and needs no further adjustment.

Results

Our calculations of the retail net margin required to cover the cost of retail assets and working capital is set out below.

Table 8: Return on capital cross-check

Whole industry 2015-2020 averages	Household and Non-household in Wales	Non household in England
Net book value of assets (£m)	428	55
Working capital (£m)	563	333
Total capital employed (£m)	991	388
Pre-tax cost of capital (%)	7.6%	7.6%
Short-term borrowing rate (%)	3.2%	3.2%
Overall cost of capital (£m)	50 to 75	15 to 29
Total allowed revenue (£m) ²⁶	8523	2671
Net margin equivalent (%)	0.59% to 0.88%	0.55% to 1.10%

²⁶ The total allowed revenue is extracted from PR14 business plans and does not incorporate any Ofwat adjustments, for example a lower allowed cost of capital. The net margin may therefore be slightly higher if calculated on the basis of a lower allowed revenue base.

4. Adjustments

Single Margin Rule

Ofwat proposes to set separate retail net margins from wholesale returns for the first time in PR14. In addition, Ofwat has decided to allocate all existing RCV to the wholesale price control, including those assets used to support retail activities. The single margin rule (SMR) adjustment in the final methodology statement is therefore intended to reduce retail margins by the amount of returns earned on these legacy assets contained in the wholesale control. It avoids double counting the return on retail assets.

Estimation of retail assets (2015 – 2020)

Our approach to determining the value of assets during 2015-2020 is to apply depreciation on existing retail assets through the period 2015-2020. The net book values of retail assets of each company are provided in company PR14 business plans as well as the depreciation charges on these existing assets.

Our calculations indicate the value of the retail assets to be £459 million at the beginning of the 2015-2020 regulatory period. Many of these assets are already significantly depreciated, and the average life of retail assets is estimated at around 9 years. We therefore assume that the NBV of existing or legacy retail assets will be *de minimis* by 2020, although we accept there may be some companies who have made recent investments in retail assets which may have residual value in their retail assets by 2020. Ofwat could review this assumption as part of its PR19 process.

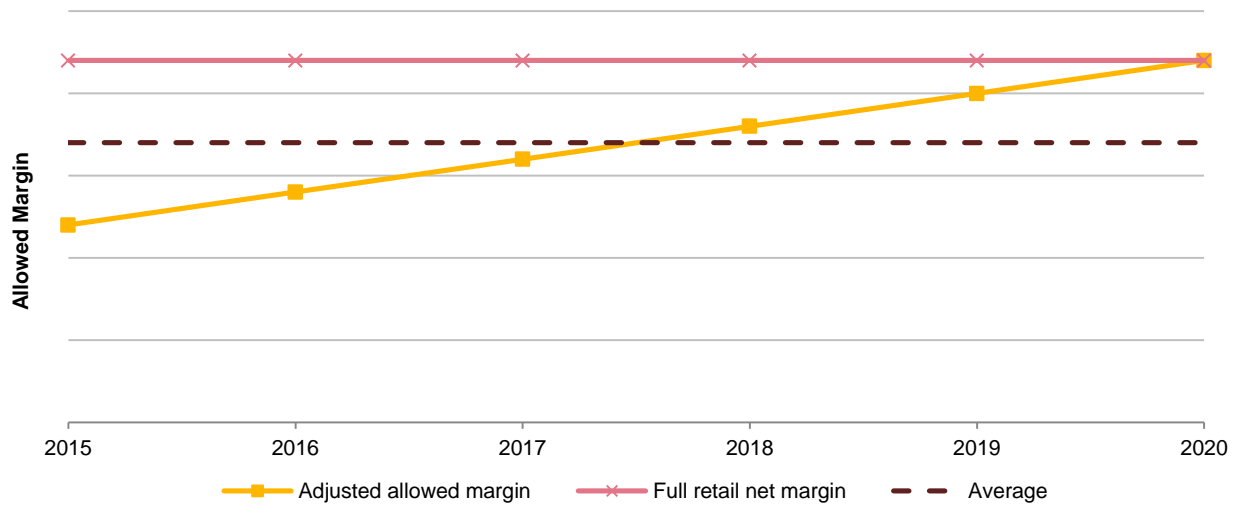
This suggests that there will be considerable retail asset value allocated to the wholesale price control over the period 2015-2020. This supports the argument for making the SMR adjustment.

Approach to SMR adjustment

We are unable to quantify the amount for the return on assets incorporated into comparators' margins, as such disaggregated information is not available. However, the margin earned on retail assets in water can be stripped out of the retail net margin calculated from comparators, to arrive at an approximate adjustment.

The adjusted retail net margin should be allowed to 'drift' upwards to the full retail net margin level during the period 2015 to 2020, as the return on the legacy assets falls proportionally to their reducing net book value. The adjustment could also be applied equally over the five year period, to maintain a constant retail net margin, as shown in Figure 2 below.

Figure 2: The adjusted revenue will drift towards the retail net margin



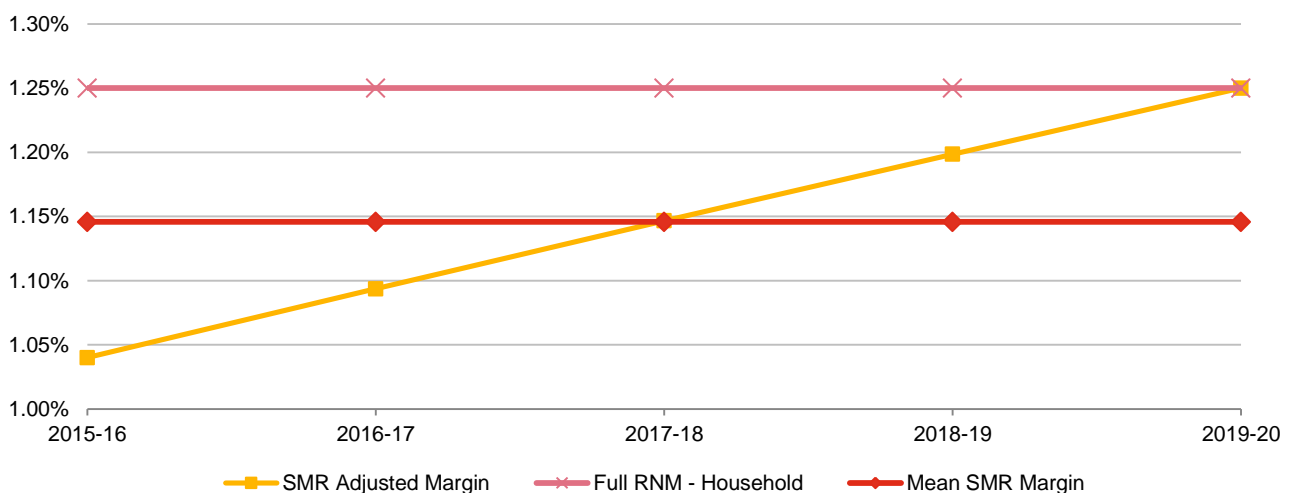
Quantification of SMR adjustment

We estimate the size of the SMR adjustment at an industry level. We calculate the single margin adjustment based on the evolution of the legacy retail assets, total industry revenues and the appointee pre-tax WACC using the following formula.

$$Margin = \frac{Legacy\ MEAV \times WACC}{Turnover}$$

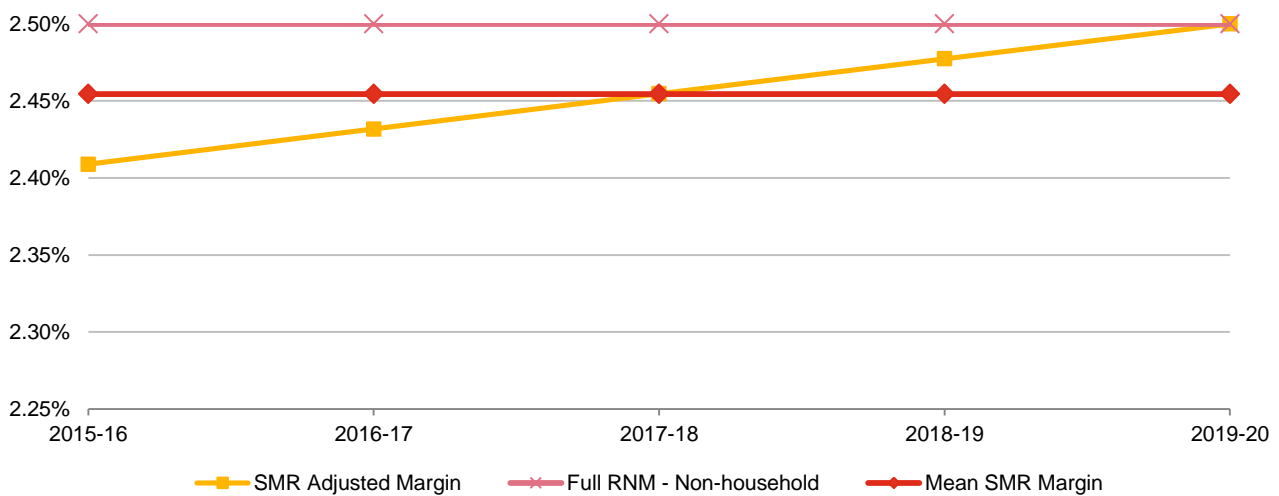
Our assumed legacy retail asset value for the industry is £459m in 2015, with straight line depreciation applied over five years. The margin adjustment is calculate separately for household and non-household activities using a real pre-tax WACC of 4.4%²⁷ and picking the central point in our margin ranges (1.25% for household and 2.5% for non-household). The margin calculation is calculate on an annual basis, but also presented as an average adjustment.

Figure 3: SMR adjusted margin for household activities



²⁷ Because we are concerned with the recovery of costs across wholesale and retail controls we use a real WACC. The recovery of the cost of legacy retail assets contained within the RCV will benefit from RPI indexation.

Figure 4: SMR adjusted margin for non-household activities



The SMR adjustment is around 0.1% for household activities and 0.05% for non-household activities. The figure is greater for household retail activities because of a greater capital intensity in providing retail services (i.e. the proportion of assets allocated to household is greater than the share of retail revenues)²⁸, illustrating the benefit of scale economies in providing non-household retail services.

Application of the Single Margin Rule interacts with the assessment of the wholesale WACC. Because the Ofwat assessment of appropriate wholesale returns deducts a portion of the retail margin from the appointee WACC²⁹, this means that any Single Margin Rule adjustment to the retail margin is reversed in the calculation of the wholesale WACC. Application of the Single Margin Rule does not therefore impact overall appointee returns, but it does impact the balance of returns across retail and wholesale controls. Application of the Single Margin Rule will better reflect appropriate returns in each control, in relation to the capital employed, but over the longer-term, as legacy retail assets contained in the RCV fall, the Single Margin Rule will not be required.

Working capital

Overview

There is normally a difference in timing between the payment terms to a wholesale business and the payments received from retail customers. In the case that wholesale payment terms require payment in advance of retail customer billing or collection, there will be a working capital requirement for water retailers. Ofwat's proposed retail net margin should be sufficient to allow retail businesses to cover the costs of accessing this working capital.

In order to determine if an adjustment to the retail net margin is required for differences in working capital, the working capital requirements for both comparators and water companies must be understood. The trade working capital requirement in our comparator companies can be calculated. This can then be compared to the working capital required in water companies. If the working capital requirement is higher in water, this would suggest an upward adjustment to the retail net margin is required, and vice versa.

In this Section we undertake an assessment of different working capital requirements of the energy and water company comparators which are used in the comparator assessment. We calculate the working capital

²⁸ This allocation is provided by companies in their PR14 business plan submissions. We have not validated this allocation.

²⁹ Ofwat (2014), 'Setting price controls for 2015-20 – Risk and Reward Guidance', Appendix C

requirements of water companies to assess any differences in working capital required. Our analysis then calculates the adjustment to the retail net margin required to normalise the working capital requirements of the comparators and the water companies to which the margin will be applied.

Analysis

The following comparators were included:

Table 9: Sources for comparator company returns

Industry	Company	Geography	Year
Energy	British Gas Trading Ltd	UK	2009-2011
Energy	Eon UK Plc	UK	2009-2011
Energy	EDF Energy Plc	UK	2009-2011
Energy	Scottish Water UK Plc	UK	2009-2011
Energy	SSE Plc	UK	2009-2011
Energy	NPower Plc	UK	2009-2011
Water	Business Stream Ltd	UK	2009-2011

For each of the comparator companies listed above, the trade working capital requirements were calculated based on the best information available: Companies House filings for the UK organisation. The trade working capital requirement was examined spanning the three years of accounts used to calculate comparator working capital requirements, and are presented as a three year average. The values are calculated as:

$$\text{Trade Debtor Days} = \frac{\text{Trade debtors}}{\text{Turnover}} \times 365$$

The equivalent calculation is also performed using trade creditors, with results shown below.

Table 10: Comparator debtor and creditor days

Comparator	2009-2011 mean debtor days	2009-2011 mean creditor days
British Gas Trading Ltd	25	19
E.On UK Plc	37	8
EDF Energy Plc	25	51
Scottish Power UK Plc	35	32
SSE Plc	41	38
NPower Plc	38	17
Business Stream Ltd	52	1
Comparator mean	36	24

The analysis above shows that the retail net margin, as drawn from comparators is associated with an average number of debtor days of 36 and an average number of creditor days of 24.

Business Stream reports a low number of creditor days, potentially attributed to the rapid payment terms to the parent wholesaler, Scottish Water. They also have a higher debtor day figure than other comparators. This is largely because they are a non-household only provider, and therefore do not benefit from the advantageous payment terms in the household sector.

Water company payment cycles

To determine if an adjustment to the retail margin derived from comparators is necessary, the number of debtor and creditor days in Water only Companies (WoCs) and Water and Sewerage Companies (WaSCs) is assessed.

We have calculated the trade debtor days of all water companies for a two year period, using the figures reported to Ofwat in Regulatory Statements. Using the Regulatory Statements, we have calculated the trade debtors by including the metered income accrual is included in the debtor sum, as this will increase the working capital requirements of the company. Customer advance receipts are netted off the trade debtors as these reduce the working capital requirement posed by debtors. We have also reported the gross trade debtor days before the customer advance receipts are netted off.

The presence of customer advance payment is largely unique to water, with energy firms only collecting payment in advance in the minority of cases. Stock is not included in the working capital calculation. The trade creditor values are taken as the value quoted in Regulatory Statements.

Short term capital is excluded from the calculation, as this is not a function of payment cycles, rather a financial factor. Similarly the Prepayments and Other debtors and Accruals and other creditors are not included in the summation, as these represent unknown, non-trade assets and liabilities.

Table 11: Water and Sewerage Companies trade debtor and creditor days 2011-12

WaSCs	Metered Turnover	Gross Debtor Days	Net Debtor Days (net of advance receipts)	Creditor Days
Anglian	67%	108	69	23
Dŵr Cymru	39%	59	28	21
Northumbrian	41%	64	56	5
Severn Trent	46%	73	40	3
Southwest	66%	54	50	13
Southern	47%	62	38	20
Thames Water	41%	90	71	60
United Utilities	45%	73	42	12
Wessex Water	51%	75	52	2
Yorkshire	45%	53	33	21
WaSC Mean	49%	71	48	18

Table 12: Water only Companies debtor and creditor days 2011-12

WoCs	Metered Turnover	Gross Debtor Days	Net Debtor Days (net of advance receipts)	Creditor Days
Bristol	44%	76	38	4
Cambridge	32%	56	-12	85
Dee Valley	59%	60	53	17
Portsmouth	33%	54	26	8
Sembcorp	66%	65	48	11
Southeast	47%	90	47	9
South Staffs	37%	53	15	28
Sutton & E Surrey	44%	58	21	35
Veolia Central	46%	68	32	9
Veolia E	74%	112	76	79
Veolia SE	85%	86	86	48
WoC Mean	51%	71	39	30

As Table 11 and Table 12 show, water and sewerage companies have greater debtor days and fewer creditor days, meaning they will generally have higher trade working capital requirements than water only companies. For the purposes of this analysis the WaSCs and WoCs are aggregated to industry average trade debtors and creditors, as shown below.

Table 13: Comparator and water industry debtor and creditor days

	Net Debtor days	Creditor days
Mean comparator	36	24
Mean water (WaSC & WoC)	43	24
Water difference	7	0

Using the results shown, we show that the comparators have seven (7) debtor days trade working capital advantage, while also having zero (0) creditor day disadvantage over water. We have not examined an efficient amount of working capital for the water industry, rather we take the figures as provided in annual reports. The result is that a net seven (7) days trade working capital allowance could be added to the retail net margin, to achieve equivalent working capital treatment for water companies as for the comparators.

Adjustment to retail margin

In order to calculate the appropriate adjustment to retail net margin, the cost of funding working capital is required. We have assumed that working capital is funded by debt, at a rate of 3.2% when calculating the cost of working capital.³⁰

Using the water industry turnover average from 2015-2016 of £11bn, seven (7) days of trade working capital equates to £211m, and an associated annual cost of accessing this working capital of £6.75m. The uplift on the margin required to compensate for this additional working capital requirement is 0.06%.³¹

³⁰ The figure of 3.2% short-term borrowing cost is taken from the lowest quartile of water company submissions for their working capital cost of financing rate. A number of water companies suggested their working capital cost of financing was higher than their long-term cost of debt, which we consider unrealistic given the short-term nature of financing working capital. For this reason we selected a figure towards the bottom end of company submissions.

The retail net margin could therefore be increased by this percentage point adjustment to reflect the trade working capital cost difference between the comparators and water companies. There may be some variation across water companies, as factors driving working capital requirements include the proportion of metered to unmetered customers; the size and number of the non-household customers; and the overall cost to serve of those customers (i.e. wholesale inputs costs). For this reason it will still be important for Ofwat to carry out its retail headroom check to ensure the retail margin is sufficient to cover the cost of efficient working capital.

³¹ This adjustment is applicable for the comparators as a whole. The adjustment to Business Stream would be significantly different, given its working capital requirements. Using the same approach as set out above the adjustment would reduce the Business Stream allowed margin from 3.2% to 2.9% on an equivalent working capital basis (its achieved margins have been lower).

5. Conclusions

The table below sets out our findings for net Earnings Before Interest and Taxation (EBIT) margin range for retail water and wastewater businesses in England & Wales.

Table 14: Retail net margin range for E&W water and sewerage businesses

Retail net margins	Household margin and Non-household margin in Wales	Non-household Margin for England
Benchmark approach	0.5% to 2.0	1.0% to 4.0%
Cross-check: return on capital approach	0.59% to 0.88%	0.55% to 1.10%

The range for the household segment of 0.5% to 2.0% is drawn from regulatory determinations in largely non-competitive markets. We expect water retailing risks to be below other regulated sectors, such as energy, which faces higher price variability, political risks and requirements to discharge environmental and social obligations. This suggests a lower figure in the range is appropriate.

For the non-household segment we suggest a higher range is appropriate. This is because of the additional risks in this segment relating to the introduction of competition (albeit only from 2017). The only purely non-household regulatory comparator is the WICS determination for Business Stream activities, averaging at 3.2%, but there are considerable differences between water retailing in Scotland and England. Working capital requirements for water companies in England are likely to be more favourable, which indicates the net retail margin for non-household customers should be below the 3.2% figure.

For the low end of the non-household range, we start with the low end of segmented benchmarks, but adjust downward for differences between water retailing and energy retailing, while keeping it above the low end of the household margin range. This suggests a figure of around 1.0%. However, non-household margins achieved by comparators are typically significantly higher, averaging 4.5% over the period 2009-11. We do not consider non-household water retail margins should be as high as other sectors, including energy, so we suggest an upper bound to the range for non-household retail net margins of 4.0%, although actual realised non-household margins, across the industry, are likely to fall below this level.

The cross-check return on capital approach suggests a minimum margin of 0.6% for both household and non-household retail activities. Given this approach is likely to omit some sources of economic capital and some retail specific risks, this suggests that both the household and non-household margins should be set above 0.5% and not at the bottom end of the benchmark range.

We also considered two factors which could be used to adjust the retail net margin: the Single Margin Rule and working capital.

The Single Margin Rule adjustment in Ofwat's final methodology statement is intended to reduce the retail returns by the amount of return earned on legacy retail assets which remain in the wholesale RCV. This avoids double counting the return on retail assets in both the wholesale and retail controls. We estimate the size of the single margin rule adjustment to be around 0.1 percentage points on the retail net margin. This is likely to have diminished to a negligible amount by the end of the 2015-2020 period.

We have analysed working capital differences in water companies compared to the benchmarks we examined. The result is that a seven (7) days trade working capital allowance could be added to the retail net margin, to achieve equivalent working capital treatment for water companies compared to the comparators. We have

assumed that this additional working capital is funded by debt, at a rate of 3.2%, and this suggests retail net margin from the benchmarks could be increased by a 0.06 percentage point adjustment to reflect the trade working capital cost difference between the comparators and water companies.

The overall net impact of the Single Margin Rule and adjusting for working capital differences is therefore likely to be negligible.



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