

# Appendix 13i: Wholesale cost recovery rates

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### RCV run off rates

#### Source

Historical APR reporting and the statutory accounts have been used to review and establish the most appropriate “natural” asset lives to use in the run off rate forecast as part of PR19.

Statutory accounts have been analysed for the last 8 years to 31 March 2018, covering both the current and last AMP periods. The APR has only included a price control breakdown for the last two years to 31 March 2018, therefore only two years of APR data has been considered within the analysis.

#### Method

The initial exercise was to collate the fixed asset information from the statutory accounts. The average asset life over the last 8 years to 31 March 2018, which incorporates both the prior and current AMP periods was then calculated.

As shown by the table below this analysis resulted in an average of 25.9 years:

Year ending	Tangible Fixed Assets £m	Depreciation Charge £m	Asset Life years
31/03/2018	7,603.9	285.1	26.7
31/03/2017	7,250.4	273.5	26.5
31/03/2016	6,871.2	273.0	25.2
31/03/2015	6,917.9	275.5	25.1
31/03/2014	6,369.9	269.5	23.6
31/03/2013	6,279.6	237.4	26.5
31/03/2012	6,143.9	225.7	27.2
31/03/2011	5,965.7	222.7	26.8
<b>Average</b>	<b>6,675.3</b>	<b>257.8</b>	<b>Average = 25.9</b>

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Similar analysis was then conducted based on information included within our APR for the last 2 years to 31 March 2018. From this analysis we calculated the asset lives for each price control, using the reported net book value and the depreciation charge.

As shown by the table below this analysis gives a wholesale two-year weighted average asset life of 27.5 years.

Year ending		Water Network	Water Resource	WATER	Wastewater Network	Bio Resource	WASTE WATER	Total Wholesale
31/03/2018	Net book value (£m)	3,001.7	303.0	3,304.7	3,829.3	337.2	4,166.5	7,471.2
	Depn charge (£m)	100.4	6.9	107.2	149.0	16.1	165.1	272.3
	<b>Asset lives (yrs)</b>	<b>29.9</b>	<b>44.2</b>	<b>30.8</b>	<b>25.7</b>	<b>21.0</b>	<b>25.2</b>	<b>27.4</b>
31/03/2017	Net book value (£m)	2,868.2	294.7	3,162.9	3,650.8	313.6	3,964.4	7,127.3
	Depn charge (£m)	93.8	7.3	101.2	114.2	42.3	156.6	257.8
	<b>Asset lives (yrs)</b>	<b>30.6</b>	<b>40.2</b>	<b>31.3</b>	<b>32.0</b>	<b>7.4</b>	<b>25.3</b>	<b>27.6</b>
2 year weighted average	Net book value (£m)	2,934.9	298.9	3,233.8	3,740.0	325.4	4,065.5	7,299.3
	Depn charge (£m)	97.1	7.1	104.2	131.6	29.2	160.8	265.0
	<b>Asset lives (yrs)</b>	<b>30.2</b>	<b>42.1</b>	<b>31.0</b>	<b>28.4</b>	<b>11.1</b>	<b>25.3</b>	<b>27.5</b>

The statutory accounts average over the same two year period to 31 March 2018 is 26.6 years, with the difference to the APR figure of 27.5 years being predominantly due to capitalised interest included within the statutory accounts.

To check the figures calculated above, we also reviewed industry data across PR14 to ensure our run-off data was consistent with actual rates used at PR14. The table below summarises the PR14 data extracted from each company's financial model.

Company	Water Asset Life (opening)	Water Asset Life (additions)	Water Asset Life (total)	Waste Asset Life (opening)	Waste Asset Life (additions)	Waste Asset Life (total)	Water & Waste Asset Life (opening)	Water & Waste Asset Life (additions)	Water & Waste Asset Life (total)
Anglian	25.3	24.4	25.2	26.0	25.2	25.9	25.7	24.8	25.6
Northumbrian	18.8	66.8	20.6	20.8	66.4	23.0	19.8	66.6	21.7
Severn Trent	29.2	21.9	27.9	19.9	21.9	20.2	23.5	21.9	23.2
South West	26.9	24.8	26.6	21.2	18.8	20.9	23.4	20.8	23.0
Southern	23.8	22.8	23.6	17.1	22.8	17.8	18.1	22.8	18.7
Thames	27.0	19.0	25.6	19.6	21.7	19.9	22.5	20.5	22.2
United Utilities	21.2	15.2	20.4	25.7	26.6	25.8	23.9	21.2	23.5
Welsh Water	29.7	28.5	29.5	44.2	43.1	44.1	38.4	35.8	38.1
Wessex	27.6	21.7	26.4	22.3	21.9	22.3	23.9	21.8	23.6
Yorkshire Water	31.2	33.5	31.5	24.5	26.4	24.7	27.0	28.6	27.2
Average	26.1	27.9	25.7	24.1	29.5	24.5	24.6	28.5	24.7
Minimum	18.8	15.2	20.4	17.1	18.8	17.8	18.1	20.5	18.7
Maximum	31.2	66.8	31.5	44.2	66.4	44.1	38.4	66.6	38.1

The analysis above shows a total range at PR14 between 19 and 38 years, with an average of 25 years.

### Conclusion

- The statutory accounts analysis gives an average asset life of 25.9 years.
- The APR analysis gives a wholesale asset life of 27.5 years.

### Appendix 13i – Wholesale cost recovery rates

Due to the longer period considered within the statutory accounts analysis, slightly more weight has been applied to this analysis; **therefore we have assessed the overall wholesale “natural” asset life to be 26.3 years.**

Further assurance is provided as this is reasonably close to the industry average used at PR14.

The overall wholesale “natural” asset life of 26.3 years has been allocated across the price controls on a pro rata basis to the 2 year weighted average allocation obtained from the APR data. This provides the following “natural” assets lives per price control.

	Water Network	Water Resource	WATER	Wastewater Network	Bio Resource	WASTE WATER	Total Wholesale
"Natural" asset life	28.9	40.3	29.7	27.2	10.7	24.2	26.3

**No adjustment to the above “natural” rates is considered necessary.**

## Appendix 13i – Wholesale cost recovery rates

### Pay as you go (“PAYG”) rates

#### **Source**

The data used for determining the pay as you go rates by price control is contained within data tables WS1 and WWS1 (i.e. operating and capital expenditure by business unit).

#### **Method**

A “natural” PAYG rate was calculated initially.

The “natural” PAYG rate has been calculated as the total of the operating costs (line 11 of WS1 and WWS1) and infrastructure renewals expenditure (“IRE”, base maintenance) costs (line 12 of WS1 and WWS1) as a proportion of total totex.

This results in an overall wholesale “natural” PAYG rate of 53.4% as shown by the table below:

	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Natural rate	49.1%	46.4%	49.4%	58.1%	70.0%	53.4%

Pension deficit costs have been included within the operating cost lines and not separately disclosed in WS1 and WWS1, therefore pension deficit costs have been included within operating costs when determining natural rates.

This methodology is consistent with PR14 and the prior CCD/IRC methodology of previous price controls.

To check the figures calculated above and “natural” rate methodology, we also reviewed industry data across PR14 to ensure our PAYG data and methodology was consistent with actual PAYG rates used at PR14. The table below summarises the PR14 data extracted from each company’s financial model.

	Actual PAYG (used)	Natural PAYG Opex + IRE
Anglian	57.4%	56.7%
Northumbrian	62.3%	62.3%
Severn Trent	58.6%	53.0%
South West	56.3%	55.8%
Southern	47.4%	48.5%
Thames	53.7%	52.2%
UU	57.0%	51.3%
Wales	63.0%	60.4%
Wessex	54.2%	50.4%
Yorkshire	55.3%	60.4%
Average	56.5%	55.1%
Minimum	47.4%	48.5%
Maximum	63.0%	62.3%

The table above shows that the average PAYG rate used (56.5%) is very close to the “natural” rate based on our methodology above of operating costs and IRE (55.1%).

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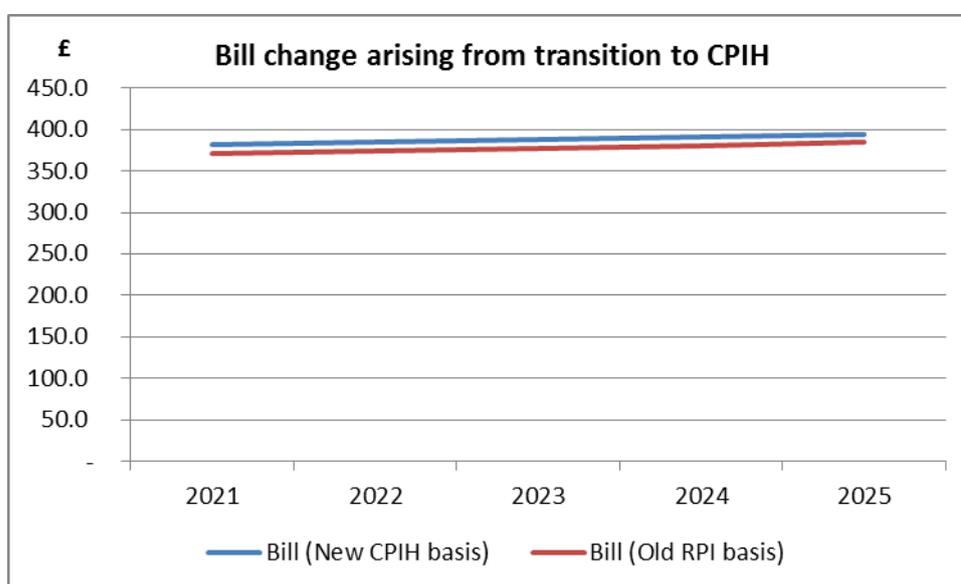
After calculating the “natural” rate, we then assessed whether any adjustments to this “natural” rate were appropriate.

### **CPIH transition**

We have considered the alternative bill impact and bill profile which does not take into account the transition to CPIH.

All other things being equal the level of bill and profile would be different as shown below:

Bill change Transition to CPIH	FY21	FY22	FY23	FY24	FY25
Nominal bill change	(12.1)	(11.8)	(11.4)	(11.1)	(10.7)
Real bill change	(11.4)	(10.8)	(10.3)	(9.7)	(9.2)



If we were to use levers to negate this impact we would need to adjust our natural cost recovery rates to slow revenues by c£160m for the five year period.

We would do this only if there was a compelling reason to do so, as per Ofwat guidance on cost recovery. The compelling reason would come from customer acceptability.

The customer acceptability level for our proposed bill is 87%, an extremely high level. Additionally, customers and the YWCF do not support intergenerational transfers which result from the slowing down of money. To slow down money would cause an opposite impact of +£12 on the average bill in AMP8 when reversed.

We conclude, therefore, that we have demonstrated how our proposed bill profile differs from a bill profile on a RPI basis; and have provided the evidence why we consider a proposed bill profile reflecting the transition to CPIH is the most appropriate method.

We find no compelling reason to delay the transition to CPIH by the use of cost recovery levers.

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### ***Bill smoothing***

Following further consultation with our customers, the following two amendments have been made to our “natural rate:

#### **1. IRE smoothing**

IRE (base maintenance) expenditure has been smoothed across the five-year period based on the average cost across the five years for each of the price controls.

This treatment is consistent with the previous IRC methodology which averaged IRE costs, which can often be ‘lumpy’ and could cause bill volatility.

This adjustment has been made as it helps to smooth customer bills, which is consistent with our customer’s preferences.

#### **2. Customer bill smoothing**

The results of customer acceptability testing have shown that our customers would prefer a smooth profile of increasing bills, rather than an inconsistent profile with increases and decreases.

The IRE smoothing above has helped to smooth the profile of customer bills, but due to the annual profile of totex the bill profile is not totally smooth. To provide a bill profile that meets our customer’s requirements we have adjusted the PAYG rate to deliver a smooth bill profile.

**Both of the adjustments above only impact revenues in the 2020-25 period. We have not slowed down, nor accelerated cost recovery into the 2025-30 period.**

We have not found a compelling reason to slow down or accelerate revenues into subsequent periods.

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The tables below shows the full workings of our PAYG rates per price control:

Water resources (£m)	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Opex	27.6	27.7	27.6	27.7	29.0	<b>139.5</b>
IRE	12.4	9.1	13.1	8.6	2.4	<b>45.6</b>
Capex	9.0	7.8	10.9	9.2	4.4	<b>41.3</b>
Totex	<b>49.0</b>	<b>44.6</b>	<b>51.6</b>	<b>45.5</b>	<b>35.7</b>	<b>226.4</b>
<b>Natural split</b>						
Fast money (Opex & IRE)	40.0	36.8	40.7	36.3	31.3	<b>185.1</b>
Slow money	9.0	7.8	10.9	9.2	4.4	<b>41.3</b>
	<b>49.0</b>	<b>44.6</b>	<b>51.6</b>	<b>45.5</b>	<b>35.7</b>	<b>226.4</b>
PAYG %	81.7%	82.4%	78.8%	79.7%	87.8%	81.7%
<b>Smoothed IRE</b>						
Fast money	36.7	36.8	36.7	36.8	38.1	<b>185.1</b>
Slow money	12.3	7.8	14.9	8.8	(2.4)	<b>41.3</b>
	<b>49.0</b>	<b>44.6</b>	<b>51.6</b>	<b>45.5</b>	<b>35.7</b>	<b>226.4</b>
PAYG %	74.9%	82.5%	71.2%	80.8%	106.7%	81.7%
<b>Bill smoothing</b>						
Fast money	36.9	36.4	36.8	36.6	38.3	<b>185.1</b>
Slow money	12.1	8.1	14.8	8.9	(2.6)	<b>41.3</b>
	<b>49.0</b>	<b>44.6</b>	<b>51.6</b>	<b>45.5</b>	<b>35.7</b>	<b>226.4</b>
PAYG %	75.3%	81.7%	71.3%	80.4%	107.3%	81.7%
Natural PAYG %	81.7%	82.4%	78.8%	79.7%	87.8%	81.7%
IRE smoothing variance	-6.7%	0.0%	-7.7%	1.1%	18.9%	0.0%
Bill smoothing variance	0.4%	-0.7%	0.1%	-0.4%	0.6%	0.0%
<b>PAYG %</b>	<b>75.3%</b>	<b>81.7%</b>	<b>71.3%</b>	<b>80.4%</b>	<b>107.3%</b>	<b>81.7%</b>

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Water networks (£m)	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Opex	208.1	201.9	196.4	196.3	200.0	<b>1,002.7</b>
IRE	32.8	36.0	38.2	43.5	43.7	<b>194.2</b>
Capex	124.7	128.8	134.2	117.4	95.6	<b>600.7</b>
<b>Totex</b>	<b>365.6</b>	<b>366.7</b>	<b>368.8</b>	<b>357.2</b>	<b>339.3</b>	<b>1,797.6</b>
<b>Natural split</b>						
Fast money (Opex & IRE)	240.9	237.9	234.6	239.8	243.7	<b>1,196.9</b>
Slow money	124.7	128.8	134.2	117.4	95.6	<b>600.7</b>
	<b>365.6</b>	<b>366.7</b>	<b>368.8</b>	<b>357.2</b>	<b>339.3</b>	<b>1,797.6</b>
PAYG %	65.9%	64.9%	63.6%	67.1%	71.8%	66.6%
<b>Smoothed IRE</b>						
Fast money	246.9	240.7	235.3	235.2	238.8	<b>1,196.9</b>
Slow money	118.7	126.0	133.5	122.0	100.5	<b>600.7</b>
	<b>365.6</b>	<b>366.7</b>	<b>368.8</b>	<b>357.2</b>	<b>339.3</b>	<b>1,797.6</b>
PAYG %	67.5%	65.6%	63.8%	65.8%	70.4%	66.6%
<b>Bill smoothing</b>						
Fast money	248.0	238.5	235.7	234.1	240.5	<b>1,196.9</b>
Slow money	117.6	128.1	133.1	123.1	98.8	<b>600.7</b>
	<b>365.6</b>	<b>366.7</b>	<b>368.8</b>	<b>357.2</b>	<b>339.3</b>	<b>1,797.6</b>
PAYG %	67.8%	65.1%	63.9%	65.5%	70.9%	66.6%
Natural PAYG %	65.9%	64.9%	63.6%	67.1%	71.8%	66.6%
IRE smoothing variance	1.7%	0.8%	0.2%	-1.3%	-1.4%	0.0%
Bill smoothing variance	0.3%	-0.6%	0.1%	-0.3%	0.5%	0.0%
<b>PAYG %</b>	<b>67.8%</b>	<b>65.1%</b>	<b>63.9%</b>	<b>65.5%</b>	<b>70.9%</b>	<b>66.6%</b>

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Wastewater network (£m)	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Opex	141.2	145.2	143.2	153.0	159.3	<b>741.9</b>
IRE	86.9	60.0	46.3	47.6	52.8	<b>293.6</b>
Capex	392.2	418.4	334.9	220.3	110.9	<b>1,476.7</b>
<b>Totex</b>	<b>620.4</b>	<b>623.6</b>	<b>524.4</b>	<b>421.0</b>	<b>323.0</b>	<b>2,512.3</b>
<b>Natural split</b>						
Fast money (Opex & IRE)	228.2	205.2	189.5	200.7	212.1	<b>1,035.6</b>
Slow money	392.2	418.4	334.9	220.3	110.9	<b>1,476.7</b>
	<b>620.4</b>	<b>623.6</b>	<b>524.4</b>	<b>421.0</b>	<b>323.0</b>	<b>2,512.3</b>
PAYG %	36.8%	32.9%	36.1%	47.7%	65.7%	41.2%
<b>Smoothed IRE</b>						
Fast money	200.0	203.9	201.9	211.8	218.0	<b>1,035.6</b>
Slow money	420.4	419.7	322.4	209.2	105.0	<b>1,476.7</b>
	<b>620.4</b>	<b>623.6</b>	<b>524.4</b>	<b>421.0</b>	<b>323.0</b>	<b>2,512.3</b>
PAYG %	32.2%	32.7%	38.5%	50.3%	67.5%	41.2%
<b>Bill smoothing</b>						
Fast money	201.0	202.0	202.3	210.9	219.4	<b>1,035.6</b>
Slow money	419.4	421.5	322.1	210.1	103.6	<b>1,476.7</b>
	<b>620.4</b>	<b>623.6</b>	<b>524.4</b>	<b>421.0</b>	<b>323.0</b>	<b>2,512.3</b>
PAYG %	32.4%	32.4%	38.6%	50.1%	67.9%	41.2%
Natural PAYG %	36.8%	32.9%	36.1%	47.7%	65.7%	41.2%
IRE smoothing variance	-4.5%	-0.2%	2.4%	2.6%	1.8%	0.0%
Bill smoothing variance	0.2%	-0.3%	0.1%	-0.2%	0.5%	0.0%
<b>PAYG %</b>	<b>32.4%</b>	<b>32.4%</b>	<b>38.6%</b>	<b>50.1%</b>	<b>67.9%</b>	<b>41.2%</b>

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Bioresources (£m)	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Opex	41.5	42.1	41.1	41.4	41.7	<b>207.7</b>
IRE	-	-	-	-	-	-
Capex	44.8	47.2	38.2	26.0	16.3	<b>172.5</b>
<b>Totex</b>	<b>86.3</b>	<b>89.3</b>	<b>79.3</b>	<b>67.4</b>	<b>58.0</b>	<b>380.3</b>
<b>Natural split</b>						
Fast money (Opex & IRE)	41.5	42.1	41.1	41.4	41.7	<b>207.7</b>
Slow money	44.8	47.2	38.2	26.0	16.3	<b>172.5</b>
	<b>86.3</b>	<b>89.3</b>	<b>79.3</b>	<b>67.4</b>	<b>58.0</b>	<b>380.3</b>
PAYG %	48.1%	47.1%	51.8%	61.4%	71.9%	54.6%
<b>Smoothed IRE</b>						
Fast money	41.5	42.1	41.1	41.4	41.7	<b>207.7</b>
Slow money	44.8	47.2	38.2	26.0	16.3	<b>172.5</b>
	<b>86.3</b>	<b>89.3</b>	<b>79.3</b>	<b>67.4</b>	<b>58.0</b>	<b>380.3</b>
PAYG %	48.1%	47.1%	51.8%	61.4%	71.9%	54.6%
<b>Bill smoothing</b>						
Fast money	41.7	41.7	41.2	41.2	42.0	<b>207.7</b>
Slow money	44.7	47.6	38.1	26.2	16.0	<b>172.5</b>
	<b>86.3</b>	<b>89.3</b>	<b>79.3</b>	<b>67.4</b>	<b>58.0</b>	<b>380.3</b>
PAYG %	48.3%	46.7%	51.9%	61.1%	72.4%	54.6%
Natural PAYG %	48.1%	47.1%	51.8%	61.4%	71.9%	54.6%
IRE smoothing variance	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bill smoothing variance	0.2%	-0.4%	0.1%	-0.3%	0.5%	0.0%
<b>PAYG %</b>	<b>48.3%</b>	<b>46.7%</b>	<b>51.9%</b>	<b>61.1%</b>	<b>72.4%</b>	<b>54.6%</b>

## Appendix 13i – Wholesale cost recovery rates

### Conclusion

- Natural PAYG rates have been calculated as the total of operating costs and IRE
- Natural rates have been smoothed within AMP to provide a smooth linear increase in customer bills, which is in accordance with our customers' preferences
- There is no speeding up or slowing down of AMP7 revenues into subsequent AMP's

A summary of PAYG rates per price control is provided below

	2020/21	2021/22	2022/23	2023/24	2024/25	Total
<b>Water resources</b>						
Natural PAYG %	81.7%	82.4%	78.8%	79.7%	87.8%	81.7%
IRE smoothing variance	-6.7%	0.0%	-7.7%	1.1%	18.9%	0.0%
Bill smoothing variance	0.4%	-0.7%	0.1%	-0.4%	0.6%	0.0%
<b>Actual PAYG %</b>	<b>75.3%</b>	<b>81.7%</b>	<b>71.3%</b>	<b>80.4%</b>	<b>107.3%</b>	<b>81.7%</b>
<b>Water networks</b>						
Natural PAYG %	65.9%	64.9%	63.6%	67.1%	71.8%	66.6%
IRE smoothing variance	1.7%	0.8%	0.2%	-1.3%	-1.4%	0.0%
Bill smoothing variance	0.3%	-0.6%	0.1%	-0.3%	0.5%	0.0%
<b>Actual PAYG %</b>	<b>67.8%</b>	<b>65.1%</b>	<b>63.9%</b>	<b>65.5%</b>	<b>70.9%</b>	<b>66.6%</b>
<b>Wastewater networks</b>						
Natural PAYG %	36.8%	32.9%	36.1%	47.7%	65.7%	41.2%
IRE smoothing variance	-4.5%	-0.2%	2.4%	2.6%	1.8%	0.0%
Bill smoothing variance	0.2%	-0.3%	0.1%	-0.2%	0.5%	0.0%
<b>Actual PAYG %</b>	<b>32.4%</b>	<b>32.4%</b>	<b>38.6%</b>	<b>50.1%</b>	<b>67.9%</b>	<b>41.2%</b>
<b>Bioresources</b>						
Natural PAYG %	48.1%	47.1%	51.8%	61.4%	71.9%	54.6%
IRE smoothing variance	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bill smoothing variance	0.2%	-0.4%	0.1%	-0.3%	0.5%	0.0%
<b>Actual PAYG %</b>	<b>48.3%</b>	<b>46.7%</b>	<b>51.9%</b>	<b>61.1%</b>	<b>72.4%</b>	<b>54.6%</b>
<b>Wholesale</b>						
Natural PAYG %	49.1%	46.4%	49.4%	58.1%	70.0%	53.4%
IRE smoothing variance	-2.3%	0.1%	0.9%	0.8%	1.0%	0.0%
Bill smoothing variance	0.2%	-0.4%	0.1%	-0.3%	0.5%	0.0%
<b>Actual PAYG %</b>	<b>47.1%</b>	<b>46.1%</b>	<b>50.4%</b>	<b>58.7%</b>	<b>71.5%</b>	<b>53.4%</b>