



South East Water Limited and Mid Kent Water Limited

A report on the completed water merger of South East Water Limited and Mid Kent Water Limited

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The Competition Commission has excluded from this published version of the report information which the inquiry group considers should be excluded having regard to the three considerations set out in section 244 of the Enterprise Act 2002 (specified information: considerations relevant to disclosure). The omissions are indicated by ✂.

Acquisition by Hastings Diversified Utilities Fund and Utilities Trust of Australia of South East Water

Contents

	<i>Page</i>
Summary.....	3
Findings	9
1. The reference.....	9
2. Industry background and the companies	9
The water industry	9
The regulatory framework.....	10
European Community Directives.....	10
The role of water companies.....	11
The role of Ofwat.....	11
The role of the Environment Agency.....	13
The role of the Drinking Water Inspectorate.....	13
The role of the Consumer Council for Water.....	13
Actual/potential competition.....	13
Previous inquiries involving MKW and SEW.....	14
The parties to the merger.....	15
The acquirers and their existing interests	15
Mid Kent Water	16
South East Water	17
3. The merger	18
History of the acquisition.....	18
Structure of the acquisition	18
Rationale for the merger	19
Integration plans	19
Jurisdiction.....	20
4. Ofwat’s use of comparative competition	21
Overview.....	21
Methodology for price reviews	22
Analysis of companies’ data	23
Econometric models.....	24
Cost-base approach.....	25
Benchmark criteria.....	25
Adjustment of targets for company specific special factors	26
Setting targets for each company	27
Other adjustments.....	27
Ofwat’s other uses of comparators	28
Overall performance assessment	29
Common framework for capital maintenance planning.....	30
Security of supply.....	31
Leakage	31
Supply and demand balance.....	31
Quality enhancement—drinking water	32
Customer service (other than the OPA).....	32
Tariffs	32
Revenue.....	32
Financial performance.....	33
Transfer pricing	33
Competition	33
5. Assessment of the effect of the merger on Ofwat’s ability to make comparisons.....	33
Overview.....	33

Adverse impact on the benchmark	35
Existing rankings and bands	35
Future rankings and bands	37
Chances of MKW forming a benchmark	39
Chances of SEW forming a benchmark	40
Conclusions on adverse impact on the benchmark	41
Adverse impact on precision.....	42
Precision of Ofwat’s existing models.....	43
Impact of the merger on precision.....	44
Statistical theory approach.....	44
General approach	46
Specific approach.....	47
Discussion of results	48
Estimates of customer detriment.....	50
Conclusions on adverse impact on precision and estimates of customer detriment.....	53
Adverse impact on the cost base.....	53
Possible impact on the benchmark	53
Possible impact on dispersion.....	60
Conclusions on adverse impact on the cost base.....	62
Adverse impact on qualitative comparisons.....	62
Conclusions on adverse impact on qualitative comparisons.....	65
Event study	65
Conclusions on the effect of the merger on Ofwat’s ability to make comparisons.....	66
6. Possible alternative approaches.....	66
Alternatives available to Ofwat in making comparisons.....	66
Additional sources of data.....	67
Sub-company and panel data	67
International benchmarking, cross-sector comparisons, market testing	69
Alternative methodologies available to Ofwat in making comparisons	69
Approaches used by other regulators	70
Conclusions on alternative approaches	70
7. Conclusion on prejudice.....	70
8. Remedies.....	71
Proposed remedies.....	72
Option 1: Divestiture.....	73
Option 2: Maintaining separate sources of information.....	76
Option 3: Price reduction.....	80
Combination of remedies	85
Conclusions on remedies (before consideration of relevant customer benefits).....	86
Relevant customer benefits.....	87
Assessment of reasonableness and proportionality.....	93
Summary of conclusions on remedies	93

Appendices

- A: Terms of reference and conduct of the inquiry
- B: Financial information on MKW and SEW
- C: Ownership, management and capital structures
- D: Rationale for the acquisition
- E: Event study on corporate bond prices
- F: Adverse impact on the benchmark
- G: Adverse impact on precision
- H: Adverse impact on cost base
- I: Adverse impact on qualitative comparisons
- J: Alternatives available to Ofwat in making comparisons

Glossary

Summary

1. On 16 November 2006 the Office of Fair Trading (OFT) referred the acquisition by Hastings Diversified Utilities Fund (HDUF) and Utilities Trust of Australia (UTA) of South East Water Limited (SEW) to the Competition Commission (CC) for investigation and report. HDUF and UTA are also the owners of Mid Kent Water Limited (MKW). The reference was made under section 32(b) of the Water Industry Act 1991 (WIA). This is the first water merger inquiry to be referred to the CC under the new water merger provisions of the WIA. We are required to publish our final report by 2 May 2007.
2. The acquisition of SEW by HDUF and UTA was announced on 2 October 2006. Given that SEW and MKW are under common ownership and meet the turnover threshold in the Enterprise Act 2002 (the Act), a water merger has taken place. We therefore had to decide whether the merger has prejudiced, or may be expected to prejudice, the ability of the Water Services Regulation Authority (Ofwat), in carrying out its functions by virtue of the WIA, to make comparisons between different water enterprises. In this inquiry, Hastings made submissions to the CC on behalf of HDUF and UTA. References in this report to evidence received from Hastings also include evidence received from SEW and MKW.
3. MKW is a Water-only Company (WoC) that serves a population of around 590,000 in Kent and a small part of East Sussex. The population that it serves is expected to grow significantly. In 2005/06, MKW was the fourth largest WoC by regulatory capital value (RCV) and the sixth largest by turnover.
4. SEW is a WoC that serves a population of around 1.4 million. Its total supply area is split into two distinct, non-contiguous areas: the Northern region, which includes parts of Berkshire, Hampshire, Surrey and West Sussex; and the Southern region, which includes parts of Kent, East Sussex and West Sussex. The Southern region shares a boundary with MKW. SEW is the second largest WoC by turnover and by RCV.
5. Subject to the outcome of the present inquiry, Hastings intends to merge MKW and SEW into one company holding a single licence under the WIA. Hastings told us that the integration of SEW and MKW would give rise to benefits which could not be realized absent the integration. It said that these benefits were threefold: cost savings; the alignment of efficient practices; and better management of water resources.
6. The water industry in England and Wales includes ten Water and Sewerage Companies (WaSCs) and 12¹ WoCs. Ofwat is the economic regulator of the water industry. It succeeded the Director General of Water Services on 1 April 2006.
7. Within its area of operation each company is virtually a monopoly for the duration of its licence, making entry unlikely (other than on the basis of certain limited schemes). Domestic customers have no choice of supplier. There is some scope for competition for large users through inset appointments, water supply licensing (WSL), cross-border supplies and self-laying of pipes, but competition in the industry is very limited.

¹In addition, there are Cholderton Water and Albion Water, which each serve only a small number of customers.

8. In the absence of market competition, a system of comparative competition aims to simulate rivalry in a competitive market and help Ofwat to ensure that the regulated companies have incentives to improve efficiency and levels of service to customers. On the basis of comparisons between companies, Ofwat assesses each company's performance and sets price controls specific to each company. The most recent price caps were set in 2004 for the period from 2005 to 2010 (PR04).
9. Through comparative analysis, Ofwat seeks to identify the most efficient company in each cost area and the position of the other companies relative to the most efficient company. Ofwat uses econometric and cost-base approaches to determine the most efficient company in relation to each of operational expenditure, capital maintenance expenditure and capital enhancement expenditure.
10. In addition to the comparisons used in price reviews, Ofwat also uses data provided by water companies to undertake a number of other qualitative comparisons. Some involve ranking companies on the basis of a quantitative score, and some of these feed into companies' price caps. In making these comparisons, Ofwat uses league tables and other qualitative comparisons.
11. We identified four different ways in which the merger might adversely impact Ofwat's ability to make comparisons between water enterprises in carrying out its functions under the WIA:
 - the merger may result in the loss of a company which is expected to form the benchmark in Ofwat's econometric models;
 - the merger may reduce the precision of the econometric models from which Ofwat estimates technical efficiency targets;
 - the merger may adversely affect Ofwat's ability to make cost-base comparisons and challenge cost-base estimates; and
 - the merger may adversely affect Ofwat's ability to make other qualitative comparisons between companies.

We then considered whether any adverse impacts we identified together amounted to prejudice.

12. In discussing each of the possible adverse impacts, we compare the effects of the merger to the counterfactual situation which we take to be the industry with the existing number of comparators, including MKW and SEW being owned and operated independently.
13. We considered the effect of the merger in the foreseeable future. Given the long-term nature and relative stability of the water industry, we reached the view that the foreseeable future consisted of the period covering the next two price reviews. We therefore considered whether the merger may adversely affect Ofwat's ability to make comparisons at the next price review in 2009 (for the period 2010 to 2015: PR09) and at the following price review in 2014 (for the period 2015 to 2020: PR14).
14. We considered whether the merger may be expected to result in the loss of a company which is expected to form a benchmark in Ofwat's econometric models. We looked at the chances of MKW, SEW and the merged company forming a benchmark. We reached the view that MKW was not likely to form the benchmark in the next two price review periods for either operating expenditure or capital maintenance expenditure. We found that, given its current performance, SEW could

not be expected to reach the benchmark in either operating or capital maintenance expenditure in PR09. Looking to the period after PR09, we could not form an expectation that the merged company's performance would be worse than SEW's. We therefore concluded that this merger was not likely to result in an adverse impact arising from the loss of a company which is expected to form the benchmark in Ofwat's econometric models.

15. We looked at whether the merger might be expected to reduce the precision of the econometric models from which Ofwat estimates technical efficiency targets. We concluded that Ofwat's individual models were sufficiently robust to be of use with both 22 and 21 comparators. We thought, however, that the loss of a comparator from Ofwat's econometric models would, by removing information from the models, make the models less reliable and less accurate for the purposes of making comparisons between water companies. As a result, water companies may expect future price caps to be based to a greater extent on their own costs and have less incentive to achieve cost savings. This loss of precision can be expected to result in less effective comparative competition and higher customers' bills.
16. We concluded that the merger was likely to have an adverse impact on the precision of Ofwat's econometric models. We found that the adverse impact was likely to be small.
17. We used two approaches to estimate the Net Present Value (NPV) of the cumulative customer detriment from the increase in imprecision of Ofwat's combined operating and capital maintenance expenditure models in one price review period. We found that the detriment in one price review period was £1.2 million using one approach, or £10.3 million using another approach. We recognized that these figures were only indicative.
18. We looked at whether the merger might be expected adversely to affect Ofwat's ability to make cost-base comparisons and challenge cost-base estimates. We first considered whether the merger may be expected to result in the loss of a company which is expected to form a benchmark for standard cost comparisons. We concluded that this merger was not likely to result in an adverse impact arising from the loss of a company which is expected to submit standard cost estimates that would be selected as a cost-base benchmark.
19. We also considered whether the merger may be expected to reduce the dispersion of companies' cost-base estimates, removing an innovative or best practice solution that could be shared among other companies; valuable data that might allow Ofwat to challenge costs more successfully overall than it could with the remaining data it had available; or average data that helps Ofwat to identify valuable information, especially in categories of standard costs with few comparators.
20. We thought it unlikely that the merger would reduce Ofwat's ability to identify innovative or best practice solutions. However, we found that there was likely to be some adverse impact arising from the reduction in the dispersion of standard cost estimates, but that the adverse impact arising from this was likely to be small.
21. We looked at whether the merger might be expected adversely to affect Ofwat's ability to make qualitative comparisons. We looked at three ways in which Ofwat may make comparisons on the basis of qualitative data: publishing league tables; using information received from one company to challenge other companies' proposed approaches to particular issues; and publicizing both good and bad practice.

22. We concluded, given that Ofwat makes qualitative comparisons for various purposes, and in relation to a variety of different areas of industry practice, that the loss of information as a result of this merger would, in the foreseeable future, be likely to have some small adverse impact on Ofwat's qualitative comparisons.
23. We looked at whether there were alternative approaches available to Ofwat which might mean that, even with the loss of a comparator following the merger, there would be no prejudice to Ofwat's ability to make comparisons.
24. We found there to be scope for exploring the use of both sub-company data and, in particular, panel data. There might also be scope to ensure that Ofwat made the maximum use of the available data from other sources, and to use alternative techniques (such as stochastic frontier analysis (SFA) and data envelopment analysis (DEA)) to validate the results of Ofwat's existing econometric models where possible.
25. We found that it was not possible, in the context of a merger inquiry, for us to reach a definitive view as to the methodologies Ofwat should adopt for PR09 and for the future. We noted that Ofwat is actively exploring its methodologies for PR09, and that it was doing so independently of the merger. We were not persuaded that our views on the impact of a loss of a comparator as a result of this merger would differ significantly if Ofwat were to use any of the alternatives identified.
26. We concluded that the merger was likely to have adverse impacts on Ofwat's ability to make comparisons between water companies.
27. We considered whether the adverse impacts we identified together would amount to prejudice. Taking each of the adverse impacts into account, we concluded that the merger may be expected to prejudice Ofwat's ability, in carrying out its functions by virtue of the WIA, to make comparisons between different water enterprises. However, we concluded that the prejudice was likely to be limited.
28. We concluded that the prejudice that we identified may be expected to result in adverse effects for customers in England and Wales. Although we were not able to quantify the adverse effects that we expected to arise from the adverse impacts on the cost base and on Ofwat's qualitative comparisons, we regarded a range of £1 million to £10 million as indicative of the adverse effects on price that we expect as a result of the prejudice in one price review period.
29. Having decided that the merger may be expected to prejudice Ofwat's ability to make comparisons, we then considered remedies. In our remedies notice, we invited views on the following remedies:
 - (a) Option 1: Divestiture:
 - (i) full divestiture of either SEW or MKW; or
 - (ii) partial divestiture of part of either SEW or MKW.
 - (b) Option 2: Maintaining separate sources of information, by either:
 - (i) operating two enterprises under separate licences; or
 - (ii) providing two (or more) separate sets of data to Ofwat from a merged MKW/ SEW operating under a single licence.
 - (c) Option 3: Price reduction.

We also invited views on possible combinations of these remedies.

30. Having analysed each of the remedy options, we concluded that partial divestiture would not be an effective remedy in this case. We had particular concerns over the practicability of separating the Northern region of SEW from the remainder of SEW, and over whether this could be achieved in sufficient time for PR09. We concluded that a remedy based on separate sources of information would not be effective in mitigating the prejudice or the adverse effects. We accepted that Ofwat would not use such information separately in its models. We therefore did not consider these remedies further.
31. Full divestiture was the only fully effective remedy option that we identified. This would fully address the prejudice resulting from the merger. We thought that the divestiture of either MKW or SEW would be practicable.
32. We concluded that the price reduction remedy would mitigate the adverse effects resulting from the merger. There appeared to be no cost-effective mechanism to secure a transfer to customers beyond SEW and MKW to mitigate the adverse effects of the merger. However, we thought that a transfer only for SEW and MKW customers would go some way to addressing the adverse effects of the merger. In our view, a price reduction remedy implemented by means of a one-off lump sum transfer to SEW and MKW customers of £4 million in 2008/09, together with a requirement on SEW and MKW to have £3.1 million annual operating efficiency savings factored in its price determination in 2009, would be an effective and practicable remedy.
33. We therefore found that there were two effective, or partially effective, remedies, both of which were practicable. Before coming to a conclusion on the questions of reasonableness and proportionality, we considered relevant customer benefits.
34. It was our view that the merger was likely to result in some relevant customer benefits as a result of the change it would generate in the companies' incentives to share water resources, the reduced complexity of doing so under a single management team, and in the merged company's ability to plan across existing company boundaries. It was difficult for us to ascribe any scale to these benefits, but on balance, we considered that the benefit to customers was likely to be small.
35. We concluded that the merger would result in cost savings. We thought it likely that Hastings would achieve savings in operating expenditure of at least £3.1 million a year, as well as further savings on capital expenditure. We expected customers to receive these benefits in the foreseeable future, but we were not persuaded that, in the absence of any remedy that we might impose, they would be fully reflected in the price determination at PR09.
36. The prejudice that we have identified is limited. Taking account of the prejudice, and the relevant customer benefits that we have identified, our judgement was that the relevant customer benefits were substantially more important than the prejudice. We were therefore entitled, under the Act, to have regard to the impact of any effective remedies on relevant customer benefits.
37. We noted that full divestiture would result in the loss of all relevant customer benefits arising from the merger. We thought that a price reduction remedy would effectively mitigate the adverse effects we expect to result from the limited prejudice that we have identified, and would at the same time allow relevant customer benefits to be realized.

38. We concluded that a price reduction on the following terms would be effective in mitigating the adverse effects of the merger and was the most reasonable and proportionate remedy in the circumstances of this merger:
- (a) the price reduction should be given effect by a one-off lump sum transfer from MKW and SEW to their customers through bills for 2008/09;
 - (b) the price reduction should have a total value of £4 million distributed equitably across all customers of MKW and SEW; and
 - (c) the price reduction should be accompanied by a requirement for MKW and SEW to accept a price determination in PR09 that reflects £3.1 million annual operating expenditure savings.

Findings

1. The reference

- 1.1 On 16 November 2006 the OFT referred the acquisition by HDUF and UTA of SEW to the CC for investigation and report. HDUF and UTA are also the owners of MKW. The reference was made under section 32(b) of the WIA. Our terms of reference are set out in Appendix A. We are required to publish our final report by 2 May 2007.
- 1.2 In accordance with our terms of reference, if we find that a water merger has taken place (see paragraph 3.16), we must decide whether the merger has prejudiced, or may be expected to prejudice, the ability of Ofwat, in carrying out its functions by virtue of the WIA, to make comparisons between different water enterprises.
- 1.3 This document, together with its appendices, constitutes our final report which we are required to prepare under section 38 of the Act.² Further information, including non-sensitive versions of written submissions, summaries of third party arguments and views and our provisional findings report published on 8 March 2007, can be found on our website.³ We refer to these documents as appropriate.
- 1.4 This is the first water merger inquiry to be referred to the CC under the new water merger provisions of the WIA.⁴ Those new provisions were implemented by the Act, which made certain amendments to the WIA.⁵ The statutory framework for water merger inquiries is set out in the Water Mergers (Modification of Enactments) Regulations 2004, which make modifications to Part 3 of the Act for the purposes of water merger inquiries.

2. Industry background and the companies

- 2.1 In this section we describe the major features of the water industry and the companies that are the subject of this inquiry.

The water industry

- 2.2 Until 1989 the water industry in England and Wales comprised ten Water Authorities and 29 Statutory Water Companies (SWCs). The Water Authorities were public sector bodies responsible for providing both water and sewerage services in specified territories whose boundaries, broadly, were set by the catchment areas of the main rivers. The SWCs, which operated on a smaller scale, provided water services only, meeting about 20 per cent of demand. They were privately owned but subject to various statutory controls.⁶
- 2.3 Under the Water Act 1989 the water authorities were privatized under a new regulatory framework and became WaSCs. The controls on the SWCs were removed and they were allowed to become registered under the Companies Act 1985. They were regulated in the same way as the WaSCs and became known as water-only

²As amended by regulation 13 of the Water Mergers (Modification of Enactments) Regulations 2004 (see paragraph 1.4).

³www.competition-commission.org.uk.

⁴See in particular sections 32 to 35 and Schedule 4ZA.

⁵See section 70 of the Act.

⁶The SWCs were incorporated under individual local Acts of Parliament, many dating from the 19th century. The various controls included restrictions on the dividends they could pay, the amount they could borrow and the amount of profit they could retain. Any excess profits had to be passed on to customers by reducing prices in future years. SWCs were not subject to all the provisions of the Companies Acts.

companies (WoCs). The WaSCs and WoCs appointed to provide water and/or sewerage services under the Water Act 1989 are collectively referred to as water undertakers.⁷ Following a number of mergers, the water industry in England and Wales now includes 10 WaSCs and 12⁸ WoCs. Three of the WoCs are part of Veolia Water UK plc (Veolia); prior to the acquisition of SEW by HDUF and UTA the remaining WaSCs and WoCs were all under separate, independent ownership. The provisions of the Water Act 1989 relating to the water industry and its regulation were consolidated in the WIA.

- 2.4 In 2005/06 the water industry in England and Wales had a turnover of £8.2 billion, of which £4.1 billion was from water services and £4.1 billion from sewerage services. Water was delivered to over 24 million properties, occupied by over 53 million people. The total amount of water delivered per day was on average just over 12,650 megalitres (Ml); almost 70 per cent was delivered to domestic households and the remainder to non-household properties.

The regulatory framework

- 2.5 The main Acts that govern the economic regulation of the water industry are the Water Act 1989, the WIA and the Water Act 2003. The Water Act 1989 established the current structure of the water and wastewater industry in England and Wales.⁹ The Water Act 1989 also created a new quality regulation regime for the industry, operated by the National Rivers Authority (now part of the Environment Agency (EA)) and the Drinking Water Inspectorate (DWI).
- 2.6 The Water Act 2003 made wide-ranging changes to the WIA and the regulatory framework. These included the introduction of further measures to encourage competition to supply high-volume water users (see paragraph 2.24). Other Acts that have significantly modified the regulatory framework include the Competition and Service (Utilities) Act 1992, the Environment Act 1995 and the Water Industry Act 1999.

European Community Directives

- 2.7 Many of the UK's water quality and environmental standards derive from EC directives. The EC Drinking Water Directive¹⁰ sets standards for the quality of water intended for human consumption. The overall framework for the use and protection of water resources is set in the EC Surface Water Abstraction Directive, the EC Groundwater Directive and the EC Water Framework Directive.¹¹ Within England and Wales, these quality requirements are mainly enforced by the EA and the DWI.

⁷Hereafter we refer to the water undertakers as the water companies.

⁸In addition there are Cholderton Water and Albion Water, which each serve only a small number of customers.

⁹The publicly-owned water industries in Scotland and Northern Ireland are regulated separately from England and Wales. As Scotland and Northern Ireland operate under different statutory frameworks and industry regulators, they are not considered in this inquiry.

¹⁰EC Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy.

¹¹EC Drinking Water Directive: Council Directive 98/83/EC on the quality of water intended for human consumption. EC Surface Water Abstraction Directive: Directive 75/440/EEC on the quality of surface water abstracted for potable supply. EC Groundwater Directive: Directive 80/68/EEC on the protection of groundwater against pollution caused by certain dangerous substances.

The role of water companies

- 2.8 The Water Act 1989 gave the Secretary of State for Environment, Food and Rural Affairs (the Secretary of State) the power to appoint companies to be water or sewerage undertakers in England and Wales. Section 2 of the WIA imposes duties and confers powers on the Secretary of State and Ofwat. The Secretary of State has overall responsibility for the legal and policy framework for the water industry in England.¹² This role includes setting standards, appointing board members of Ofwat and issuing special permits, such as drought orders.
- 2.9 The WIA sets out the main duties of the water companies. Their general duties, set out in section 37 of the WIA, are:
- to develop and maintain an efficient and economical system of water supply within their area;
 - to provide supplies of water to premises in the area and make such supplies available to persons that demand them; and
 - to maintain, improve and extend their water mains and other pipes.

These duties are enforceable by the Secretary of State or, with his consent, by Ofwat.

- 2.10 The WIA also places specific duties on, and gives powers to, the water companies. These include duties to connect properties to the water main, supply sufficient water, provide water for various public services, provide water at sufficient pressure and supply wholesome water. The Water Act 2003 also requires water companies to produce water resource management and drought plans.
- 2.11 The water companies' instruments of appointment, commonly referred to as their licences, are subject to 25 years' notice of termination and include numerous conditions. These set out, among other things: the price cap formula; limits on the amount that can be charged for the first-time connection of a property; the timing of periodic reviews; a provision for the company to seek an interim determination of their price cap; a requirement to issue a charges scheme setting out domestic tariffs; prohibitions on undue preference or discrimination in setting tariffs; a requirement to produce a Code of Practice for dealing with customers; requirements to supply information to Ofwat; requirements to operate as an independent company and have sufficient assets; the role of the company's owners; a requirement to maintain an efficient and economic system of supply; a requirement to produce long-term plans for maintaining and developing their distribution systems; and arrangements for compensating customers in the event of interruptions to supply.

The role of Ofwat

- 2.12 Ofwat is the economic regulator of the water industry. It succeeded the Director General of Water Services on 1 April 2006. A key function of Ofwat is the monitoring of compliance of the WaSCs and WoCs with their licence obligations and revising the licences as circumstances change. Ofwat's duties are set out in the WIA as amended by the Water Act 2003.
- 2.13 Ofwat's primary duties are to act in the way it considers best calculated to:

¹²The Welsh Assembly Government has a similar role in Wales.

- protect the interests of customers, wherever appropriate by promoting effective competition;
- secure that the functions of each water company are properly carried out;
- ensure that companies are able to finance the proper carrying out of their functions, in particular by securing a reasonable rate of return on their capital; and
- secure that companies with water supply licences properly carry out their functions.

2.14 In carrying out these duties, Ofwat has secondary duties to:

- promote economy and efficiency;
- secure that no undue preference or discrimination is shown by companies in fixing charges;
- secure that consumers' interests are protected where companies sell land;
- ensure that transactions with associated companies are carried out at arm's length;
- ensure that each company maintains its accounts in a suitable form;
- contribute to the achievement of sustainable development;
- have regard to the principles of best regulatory practice; and
- contribute towards attaining any environmental and social policies set out in guidance from the Secretary of State.

2.15 Ofwat maintains and develops the structure of economic regulation which operates in place of market competition. It compares water companies' tariffs and approves their charges schemes. Ofwat gathers, evaluates and publishes comparative information from companies and issues consultation papers on all aspects of regulation. Ofwat also monitors the impact on the regulated enterprises of changes over which they have no control, such as new statutory obligations.

2.16 The main instrument of economic regulation is the provision in each water company's licence for a cap on annual price movements. Ofwat sets price caps for each WaSC and each WoC for a five-year period following a price review (known as the periodic review). The most recent price caps were set in 2004 for the period from 2005 to 2010.

2.17 A system of comparative competition underpins economic regulation in the water sector. It aims to enable Ofwat to take account of objective differences in the operating environments of the companies before making comparisons between them. These comparisons enable Ofwat to come to an informed assessment of how each company's performance compares with that of the most efficient companies. On this basis Ofwat sets a scoring system for levels of customer service and efficiency assumptions that are incorporated into price controls specific to each company which require the company to become more efficient. Companies have the incentive, once these price limits have been set, to achieve additional cost savings by operating even more efficiently. These savings are then reflected in efficiency assumptions set in subsequent periodic reviews. The benefits achieved are thus both local and national,

since a well-performing company will help to set future targets for the others. The process of comparative competition therefore maintains downward pressure on prices for all customers. We describe this process in more detail in Section 4.

The role of the Environment Agency

- 2.18 The EA is a non-departmental public body sponsored by the Department for Environment, Food and Rural Affairs (Defra) and the National Assembly for Wales. It was established under the Environment Act 1995 and consolidated the activities of several environmental regulators. It is the public body with main responsibility for protecting and improving the environment of England and Wales and the principal adviser to the Government on environmental matters.
- 2.19 The EA has a duty to secure the proper and efficient use of water resources in England and Wales. The principal means of securing this is through licensing the abstraction of groundwater and river water. The EA aims to use the licensing system to achieve a balance between the requirements of abstractors and adequate protection of the environment. The Water Act 2003 introduced major changes to abstraction licensing. These included time limits for new licences, greater flexibility to raise or lower licensing thresholds and the ability to revoke licences that cause serious environmental damage. The Secretary of State also requires water companies to prepare drought plans and 25-year water resource management plans.

The role of the Drinking Water Inspectorate

- 2.20 The DWI is part of Defra. The DWI's main task is to check that water companies in England and Wales supply water that is safe to drink and meet standards set in water quality regulations. Water companies have a duty under the WIA to supply water that is wholesome at the point of supply.¹³ The DWI's other tasks include: carrying out technical audits and inspections of water companies; investigating incidents that adversely affect drinking water quality; preparing cases for prosecution when water unfit for human consumption has been supplied; providing technical and scientific advice to Ministers and officials of Defra on drinking water quality issues; and providing authoritative guidance on analytical methods used in monitoring drinking water quality.

The role of the Consumer Council for Water

- 2.21 The Water Act 2003 established the Consumer Council for Water (CCWater) and its regional committees in place of the regional WaterVoice committees (formerly known as customer service committees). CCWater is an independent non-departmental public body, sponsored by Defra. Under the Water Act 2003 it is charged with handling complaints from customers and representing customers in the policy-making process.

Actual/potential competition

- 2.22 Within its area of operation each company is virtually a monopoly for the duration of its licence, making entry unlikely (other than on the basis of certain limited schemes). Domestic customers have no choice of supplier. However, there is some scope for

¹³'Wholesomeness' is defined by reference to the standards and requirements set out in the Water Supply (Water Quality) Regulations 2000 which incorporate the requirements of the EC Drinking Water Directive.

competition through inset appointments, water supply licensing (WSL), cross-border supplies and self-laying of pipes.

- 2.23 Inset appointments allow the appointed water or sewerage company to be replaced by another for a specific geographic area under particular circumstances, such as where demand exceeds 50 MI a year.¹⁴ In practice, only 11 inset appointments have been made and none of these concern customers in MKW's or SEW's geographic areas. The framework for inset appointments is set out in the WIA as amended by the Competition and Service (Utilities) Act 1992 and the Water and Sewerage Undertakers (Inset Appointments) Regulations 2005.
- 2.24 The Water Act 2003 extended the scope for competition. It placed a duty on Ofwat to protect the interests of customers, wherever appropriate by promoting effective competition, and introduced a new WSL regime which came into force in December 2005. The WSL regime enables new companies to supply water once they have been granted a licence by Ofwat. They can compete in two ways, either by means of a retail licence or a combined licence. A retail licence authorizes the holder to buy water wholesale from an appointed water company and use its supply system to sell it on to customers. A combined licence allows the holder to introduce water from its own water source into an appointed water company's supply system and supply customers. Only non-household customers that are likely to be supplied with at least 50 MI of water a year are currently able to benefit from the WSL regime.
- 2.25 Although a number of companies have been granted WSL licences, there are no customers being supplied by them. Ofwat wrote to Defra in November 2006 suggesting a review of the WSL regime. In April 2007 Ofwat completed an internal review of market competition. Following this review, Ofwat intends to consult on certain limited areas for short-term change that it identified. The review also found that changes to legislation would be required to overcome some of the constraints to the development of competition, including the mandatory method of pricing access to companies' networks and the 50 MI per year eligibility threshold.
- 2.26 Water companies have a duty under the WIA to supply water to customers outside their area (on a cross-border basis) provided that the customer is willing to pay the cost of making the connection. Ofwat told us that the costs of such connections meant that they were in practice limited to customers close to the border between companies' supply areas.
- 2.27 In common with other regulated network industries, attempts have been made to limit the extent of the natural monopoly. Self-lay arrangements enable developers to use their own contractor to install water mains and service pipes, rather than asking the water company to do the work. A significant number of developers have chosen to take advantage of this provision. The statutory framework is contained in the WIA as amended by the Water Act 2003.

Previous inquiries involving MKW and SEW

- 2.28 The CC has considered eight previous water merger inquiries since privatization of the industry in 1989: three in 1990, four between 1995 and 1996 and one in 2002. Previous water merger inquiries were carried out under the WIA, before it was amended by the Enterprise Act. The statutory test in those cases was a public interest test, although it similarly required the CC to have regard to the principle that the number of independent water enterprises should not be reduced so as to

¹⁴50 MI applies in England. In Wales the threshold is 250 MI.

prejudice Ofwat's ability, in carrying out its functions under the WIA, to make comparisons between different water enterprises. Three of the CC's previous inquiries involved SEW, MKW, or companies which now form part of SEW.¹⁵ Each merger considered by the CC is evaluated by reference to its individual facts and circumstances.

- 2.29 Under the WIA, Ofwat is also able to refer to the CC certain disputes relating to water companies' instruments of appointment. Under these provisions, the CC may be required to reconsider Ofwat's determinations in the quinquennial price review process. In 2000, the determination of MKW's prices in the 1999 price review was referred to the CC under these provisions.¹⁶ The detail of that inquiry is not material to the present merger inquiry. We note that such inquiries have required the CC to consider and evaluate Ofwat's methodology in the price review process.

The parties to the merger

The acquirers and their existing interests

- 2.30 HDUF and UTA are two Australian unit trusts managed by Hastings Fund Management Limited (Hastings). Each fund has acquired 50 per cent of the voting share capital of SEW, through the jointly-owned acquisition vehicle HDF (UK) Holdings Limited (HDF(UK)). Each fund also owns 50 per cent of MKW. Further details of the ownership structure of SEW and MKW are set out in Appendix C.
- 2.31 In its capacity as fund manager of HDUF and UTA, Hastings' role is to develop overall portfolio strategies, source investment opportunities, undertake industry analysis and due diligence, present potential opportunities to the funds' boards, structure financing arrangements, assess operations and management teams, monitor performance of the assets post-acquisition and represent the funds on the investees' boards. It receives management fees in return for its role. In this inquiry, Hastings made submissions to the CC on behalf of HDUF and UTA. References in this report to evidence received from Hastings also include evidence received from SEW and MKW.
- 2.32 Hastings performs the role of trustee for HDUF. The trustee is the legal title holder to the trust's assets and is the trust's ultimate decision-making body. It has overall responsibility for governance, communication with unit-holders and monitoring the performance of the fund manager. It is paid fees in return for its role. In Australian law, Hastings is known as the responsible entity for HDUF as it undertakes the role of both fund manager and trustee. UTA's trustee is Utilities of Australia Pty Ltd (UoA).
- 2.33 Hastings describes itself as one of the largest managers of infrastructure and alternative investments in Australia. Founded in 1994, as at 31 December 2006 it had over AUS \$4.6 billion in funds under management in infrastructure, private equity, timber and high-yield debt investments. Since 2005, it has been wholly owned by Westpac Banking Corporation, an Australian bank.
- 2.34 Hastings told us that it established HDUF in 2004 to invest in moderate risk utility infrastructure assets which offer predictable cash flows. Its stated intention is to target investments in gas and electricity regulated transmission and distribution businesses, as well as electricity generation, water and other essential utilities in

¹⁵*Southern Water plc and Mid Sussex Water Company: a report on the merger situation*, July 1990; *General Utilities plc and The Mid Kent Water Company: a report on the merger situation*, July 1990; and *Mid Kent Holdings plc and General Utilities PLC and SAUR Water Services plc: a report on the proposed merger*, January 1997.

¹⁶*Mid Kent Water Plc: a report on the references under sections 12 and 14 of the Water Industry Act 1991*, September 2000.

Australia and the OECD countries. Hastings told us that HDUF's investment philosophy is based on maintaining control or significant influence over underlying assets; thus the fund will seek board representation at the underlying asset level and at least a veto right on major decisions. HDUF has made three investments to date: 100 per cent of Epic Energy (Epic Energy operates and maintains gas transmission pipelines in South Australia, Queensland and Western Australia) in 2004, 50 per cent of MKW in 2005, and 50 per cent of the voting capital of SEW in 2006.¹⁷

- 2.35 UTA, established in November 1994, is an open-ended trust currently owned by a number of Australian superannuation funds. It describes itself as seeking consistently to provide investors with benchmark-plus returns by taking influential minority positions in infrastructure projects and public private partnerships both in Australia and internationally. Its benchmark return is the ten-year Commonwealth Government Bond Rate plus 4 per cent a year.

Mid Kent Water

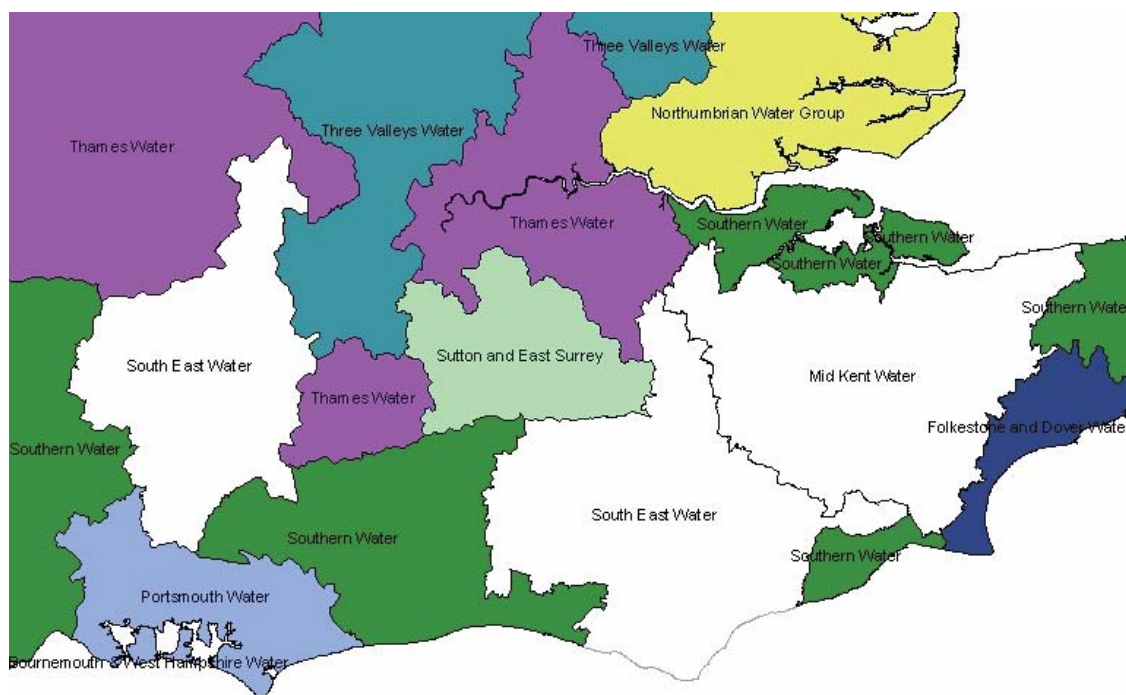
- 2.36 MKW was formed in 1888 to supply water to the parishes of Halling and Snodland. One year later it became an SWC. In subsequent years its operations expanded gradually to its current size. In March 1989 Mid Kent Holdings plc (MKH) was formed. In April 2001 MKH was taken private in a management buyout backed by Westdeutsche Landesbank Girozentrale (West LB) using an acquisition vehicle named Swan Capital Group Limited (Swan Capital Group). This was the first highly leveraged buyout in the water industry. In February 2005, the sale of MKW to HDUF and UTA was completed.
- 2.37 MKW is a WoC that serves a population of around 590,000 in about 2,050 sq km of Kent and a small part of East Sussex. Its operating area includes Ashford, Canterbury and Maidstone, together with a significant proportion of rural customers (see Figure 1). MKW supplies approximately 250,000 properties. The population that it serves is expected to grow by 29 per cent between 2005 and 2030. In particular, the Government has identified Ashford as a major regional growth area and Maidstone as a regional hub.
- 2.38 MKW puts an average of 162 million litres of drinking water a day into distribution. Following a rationalization in the early 1990s, MKW oversees all its distribution from its control centre at Snodland. Approximately 90 per cent of MKW's water is sourced from boreholes, with the balance from surface water sources, including supplies from the River Medway and Bewl Water reservoir.
- 2.39 MKW's turnover from its regulated water business was £44.4 million in 2005/06 and its average RCV in the same year was £202.9 million. In 2005/06, MKW was the fourth largest WoC by RCV and the sixth largest by turnover. As at 31 March 2006 the gearing of the regulated entity was 77.4 per cent.¹⁸ MKW's current cost regulatory profit and loss account, balance sheet and cash-flow statement for the two most recent financial years are in Appendix B, and further details of its ownership, management and capital structure are in Appendix C.

¹⁷Through HDF(UK).

¹⁸Calculated as net debt divided by RCV (source: Ofwat).

FIGURE 1

Map of MKW and SEW operating areas



Source: Hastings.

South East Water

- 2.40 The former South East Water was established in 1992 when SAUR Group (then part of French group Bouygues) brought together three local water companies: Mid Sussex Water, Eastbourne Water, and West Kent Water. In 1999, the company merged licences with Mid Southern Water to form SEW.
- 2.41 In 2003, the Macquarie European Infrastructure Fund (MEIF) acquired SEW from SAUR. HDUF and UTA jointly acquired the company in October 2006.
- 2.42 SEW is a WoC that serves a population of around 1.4 million and has about 604,000 customers. Its total supply area of around 3,600 sq km is split into two distinct, non-contiguous areas (see Figure 1). The Northern region consists of around 1,500 sq km in parts of Berkshire, Hampshire, Surrey and West Sussex. It includes Maidenhead, Wokingham, Basingstoke, Farnham and Petersfield. SEW's southern region covers around 2,100 sq km in parts of Kent, East Sussex and West Sussex. The Southern region includes Haywards Heath, East Grinstead, Tunbridge Wells and Eastbourne and shares a boundary with MKW. The population SEW serves is expected to increase by 9 per cent between 2005 and 2030.
- 2.43 SEW puts an average of 385 million litres of drinking water into distribution a day. SEW derives 68 per cent of its water supply from boreholes, 26 per cent from rivers and reservoirs and 6 per cent from bulk supply arrangements.
- 2.44 SEW's turnover from its regulated water business in 2005/06 was £112.6 million and its average RCV in the same year was £494 million. SEW is the second largest WoC

by turnover and by RCV. As at 31 March 2006 the gearing of the regulated entity was 82.2 per cent.¹⁹ SEW's current cost regulatory profit and loss account, balance sheet and cash-flow statement for the two most recent financial years are in Appendix B, and further details of its ownership, management and capital structure are in Appendix C.

- 2.45 SEW's and MKW's revenue base have similar characteristics. Households account for approximately three-quarters of their turnover. The proportion of households metered was between 30 and 35 per cent in 2005/06 for both companies. The majority of remaining turnover mostly comes from supplying water to non-household customers. Around 90 per cent of non-household customers are metered. Both companies have only a small proportion of turnover (2 to 3 per cent) from large customers that are supplied with 50 MI or more of water a year.

3. The merger

History of the acquisition

- 3.1 In August 2006 MEIF contacted prospective bidders for SEW, stating that it intended to increase significantly its exposure to the UK water sector through the acquisition of a large UK WaSC, and to this end was participating in the auction of Thames Water Utilities Ltd (Thames Water).
- 3.2 MEIF distributed a short document about the sale to a limited number of potentially interested parties. It then circulated a confidential information memorandum to interested parties who submitted non-binding indicative bids. On the basis of these bids, certain parties were invited to conduct further due diligence (including access to a data room and meetings with management), and on the basis of this make final offers for SEW. Hastings' bid (on behalf of HDUF and UTA) was successful.

Structure of the acquisition

- 3.3 SEW was acquired by HDUF and UTA through HDF(UK) (see paragraph 2.30). On acquisition, HDF(UK) purchased the entire share capital of Macquarie Luxembourg Water Sarl (subsequently renamed Hastings Luxembourg Water Sarl (Hastings Luxembourg)), which was the holding company of the SEW group of companies under MEIF ownership. Macquarie Water (UK) Limited (now renamed Hastings Water (UK) Limited (Hastings Water)) was a direct subsidiary of Hastings Luxembourg and was the SEW group's UK holding company. Ownership of Hastings Water was transferred from Hastings Luxembourg to HDF(UK) as part of a restructuring completed in December 2006.
- 3.4 The final binding bid price was £[redacted] million for the equity (or an enterprise value of £[redacted] million). Following acceptance of the bid, the final binding bid [redacted]. Details of Hastings' valuation of SEW are set out in Appendix D. The final consideration paid was £[redacted] million for the equity (representing an enterprise value of £665 million or approximately 127 per cent RCV of the regulated water business as at 31 March 2006).

¹⁹Calculated as net debt divided by RCV (source: Ofwat).

Rationale for the merger

- 3.5 Hastings has stated its intention to integrate the operations of SEW and MKW. However, in view of the uncertainty created by the mandatory reference to the CC, it assessed the economics of the acquisition on a stand-alone basis.
- 3.6 Hastings told us that HDUF and UTA aimed to increase their investments in infrastructure assets in Australia and internationally. HDUF's investor base is comprised of a combination of retail and institutional investors seeking investments in listed Australian infrastructure funds, which deliver a balance of low to moderate risk cash yield and capital growth. Demand from such investors has remained strong over the last few years. UTA's investors are predominantly Australian superannuation funds. Following the Superannuation Guarantee (Administration) Act 1992, a compulsory pension contribution system was introduced in Australia whereby employers are required to pay a proportion of employees' salaries and wages into superannuation funds. As a result of the increasing amount of these cumulative contributions, superannuation funds have sought to invest in a wide variety of assets with a mix of duration and risk/return characteristics. In particular, the infrastructure sector provides superannuation funds with: (a) a steady and dependable cash flow and dividend stream; (b) an investment performance that is not linked to that of other asset classes in the portfolio; and (c) long-term maturity, which matches the term of the funds' liabilities.
- 3.7 Hastings, as fund manager of HDUF and UTA, has been involved in the UK regulated water business since February 2005 when HDUF and UTA acquired MKW. Through this holding, Hastings said that the funds had gained significant sector knowledge and had actively supported MKW whilst delegating daily operational authority to a strong management team. Their ownership of MKW had reinforced the funds' interest in the UK water sector, given the established and transparent regulatory regime in force and the relatively stable and inflation-linked nature of the cash flows. As a result, HDUF and UTA sought to increase their long-term economic exposure to the industry through the acquisition of SEW. In particular, SEW's mature and fully regulated nature was a key portfolio requirement for UTA, whilst the strong cash-generative nature of the SEW business offered a cash-accretive investment opportunity for HDUF.
- 3.8 Hastings said that it believed there was the opportunity for making [✂] improvements at SEW in several areas:

[✂]

Further details of these planned improvements are set out in Appendix D.

Integration plans

- 3.9 Subject to the outcome of the present inquiry, Hastings intends to merge MKW and SEW into one company holding a single licence under the WIA. The post-integration structure is yet to be finalized, but Hastings said that it envisaged the capital structure of the combined group remaining largely unchanged.
- 3.10 Hastings told us that the integration of SEW and MKW would give rise to benefits which could not be realized absent the integration. It said that these benefits were threefold: cost savings; the alignment of efficient practices; and better management of water resources.

- 3.11 Possible gross savings in operating expenditure from combining the two companies are set out in paragraph 8.114. Hastings said that additional operational savings would be achievable from the integrated operation of the two water supply networks to the extent they can be interconnected quickly—for instance, reduced pumping costs arising from the interconnections proposed between MKW West and SEW Southern.
- 3.12 Hastings said that the transfer of best practice from MKW to SEW and vice versa could improve further the integrated company's efficiency since each company was relatively more efficient in different areas. In operating expenditure, Hastings said that MKW was relatively efficient in resources and treatment—where it had incorporated industry best practice—and in business activities (ie finance, business planning, overheads). SEW, conversely, is relatively efficient in distribution, where again it has incorporated industry best practice (eg remote working from laptops) and in power. The know-how in MKW with regard to business activities and resources and treatment will be capable of transfer to SEW, and vice versa for distribution, and represents a more immediate and complete transfer of industry and best practice than would be achievable absent the merger. These potential savings have not yet been quantified.
- 3.13 In addition, Hastings said that, by virtue of its size, the merged company would be more likely to innovate than a small WoC like MKW. In particular, the area served by MKW would be more likely to see management innovation after the integration with SEW given the ability to identify best practice across a larger company. In addition, Hastings said that the enhanced ability of the integrated group to invest in management resources would drive innovation.
- 3.14 Further details of proposed cost savings and water resource benefits are set out in paragraphs 8.108 to 8.116.

Jurisdiction

- 3.15 The reference was made by the OFT to the CC under section 32(b) of the WIA. Under section 33 of the WIA, the OFT is required to make a merger reference unless the value of the turnover of the water enterprise taken over does not exceed or would not exceed £10 million, or if the only water enterprises belonging to the acquirer are enterprises each of which has a turnover the value of which does not exceed or would not exceed £10 million. The UK turnover of both SEW and MKW exceeds £10 million and so the merger was referred to the CC.
- 3.16 Under section 35(1) of the Act as amended for the purposes of water merger inquiries, the first question the CC is required to decide is whether a water merger has taken place.²⁰ A water merger occurs if any two or more water enterprises cease to be distinct.²¹ Enterprises cease to be distinct if they come under common ownership or control.²²
- 3.17 The acquisition of SEW by HDUF and UTA was announced on 2 October 2006. HDUF and UTA already owned MKW. Given that SEW and MKW are under common ownership, a water merger has taken place.

²⁰Section 35(1) of the Act as amended by regulation 11 of the Water Mergers (Modification of Enactments) Regulations.

²¹Section 23 of the Act as amended by regulation 4 of the Water Mergers (Modification of Enactments) Regulations.

²²Section 26 of the Act.

- 3.18 As the merger was referred to the CC on 16 November 2006, the referral took place within four months of the date of the merger, so the test under section 24 of the Act²³ is met.

4. Ofwat's use of comparative competition

- 4.1 In the absence of market competition, a system of comparative competition aims to simulate rivalry in a competitive market and help Ofwat to ensure that the regulated companies have incentives to improve efficiency and levels of service to customers (see paragraphs 2.15 to 2.17). On the basis of comparisons between companies, Ofwat assesses each company's performance and sets price controls specific to each company. We first set out an overview of regulatory pricing (see paragraphs 4.2 to 4.5); we next discuss Ofwat's methodology for price reviews (see paragraphs 4.7 to 4.35); and then discuss Ofwat's other uses of comparators (see paragraphs 4.36 to 4.65).

Overview

- 4.2 Regulators use various methods to provide companies which face little effective competition with incentives to reduce their costs over time:

(a) One method is to adjust prices to reflect costs only after a period of time. By re-setting regulated prices only every few years, companies will retain any cost reductions achieved in the intervening period. After a few years the benefits of lower costs are received by customers in the form of lower prices.

(b) The RPI-X approach allows prices to increase with inflation (as measured typically by RPI) but requires some annual price reduction (X) to transfer benefits of cost reductions to customers. This X factor must be fixed in advance, to preserve incentives, and is usually set to reflect a regulator's expectations of reasonable productivity growth.

(c) A third approach involves the introduction of yardstick competition. A company whose price is determined solely on the basis of its own costs would have little incentive to reduce those costs. However, if a company's price is determined on the basis of another company's comparable costs, the first company will capture the full benefit from any reduction in its own costs in excess of the cost reductions achieved by the second company (and vice versa). If there are more than two companies, the first company's price can be determined on the basis of the average of the other companies' costs (sometimes called yardstick competition²⁴), or on the basis of the most efficient rival company's costs.

- 4.3 In the UK the industry regulators in water, gas and electricity all currently use variants of RPI-X. The way that RPI-X is used in each industry depends largely on the industry structure. Where there is a single regulated company, as in electricity transmission or gas transmission and distribution, the regulator is obliged to use a 'bottom-up' approach to assessing the efficient level of costs. The regulator examines the regulated company's cost projections in detail to estimate the extent to which cost savings could be made. It cannot, however, know the scope for cost reductions as well as the company does itself, and the company may be selective in the information it provides to the regulator. Regulators try, where possible, to make comparisons with companies in other, related industries or in other countries in order to challenge the

²³As amended by regulation 4 of the Water Mergers (Modification of Enactments) Regulations.

²⁴Schleifer, A (1985) 'A Theory of Yardstick Competition', *Rand Journal of Economics*, 16 (3): 319-327.

scope for cost savings more effectively. This can, however, be difficult as many activities are specific to a particular industry and international comparisons are often not possible.

- 4.4 Regulators of industries containing several companies, such as electricity distribution, water and sewerage, look for cost benchmarks within the same industry. A 'top-down' comparison of overall unit operating costs can be made, in which the regulator uses the company with the lowest unit costs as a benchmark to challenge the performance of companies with higher unit costs.
- 4.5 Top-down benchmarking does, however, have problems. Factors outside the control of the companies affect their unit cost levels and some companies inevitably have higher costs than others. Top-down benchmarking does not adjust for any differences between costs due to these external factors and might not therefore compare like with like. Such external factors may be adjusted for by constructing one or more economic models that relate the costs of a hypothetical efficient company to cost drivers that measure, say, its scale and key features of its operating environment. Such models, however, require additional data that explain external differences in costs in the form of data on cost drivers as well as a sufficient number of comparators to facilitate valid statistical analysis.
- 4.6 Regulators must attempt to adjust the company's costs to remove company-specific factors outside management control before comparing the relative efficiency of companies. Paragraphs 4.7 to 4.35 describe the way in which Ofwat's approach combines features of all three of these approaches: lagged prices (price review every five years), RPI-X (with an adjustment for quality) and a form of yardstick competition (with an adjustment for cost differences across companies which are beyond their control.)

Methodology for price reviews

- 4.7 In this section we look at the main stages in setting price limits. We outline the process used by Ofwat in its 2004 price review (PR04). As set out in paragraph 6.2, Ofwat and the industry are considering Ofwat's approach for the methodology to be used in its 2009 price review (PR09).²⁵
- 4.8 Ofwat uses a price cap formula of RPI+K. The adjustment factor, K, is a number (which may be positive, zero or negative), specific to each company, that limits permitted annual changes in prices in real terms (inflation is allowed for by including the RPI in the price formula).²⁶
- 4.9 The K factor is made up of an allowance for agreed improvements in output quality (Q) less an efficiency improvement target (X)—ie $K=Q-X$. Ofwat sets the efficiency improvement target X on the basis of comparative competition between different water enterprises. The efficiency improvement target X has two components: individual catch-up improvement and industry-wide continuing improvement. The process for determining these is outlined below.

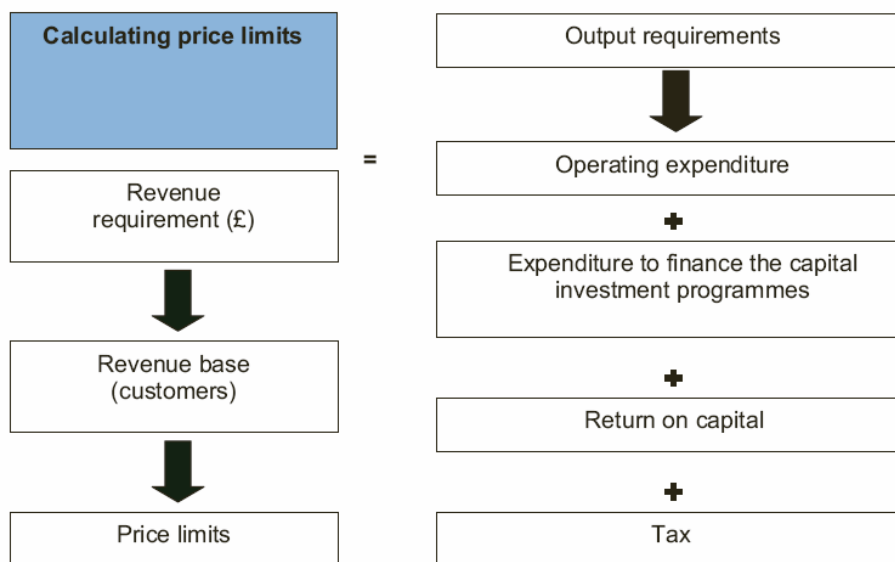
²⁵Assuming Ofwat follows the same methodology as for PR04, the water companies will prepare their business plans for use in PR09 at 2007/08 prices. Ofwat will also prepare its draft price determination at these prices. In the final price determination, base operating expenditure will be based on the companies' June 2009 returns, which will reflect 2008/09 expenditure. Other costs will be adjusted in line with the RPI. Ofwat's methodology for PR09 will be the subject of consultation in the second half of 2007.

²⁶Licences also provide for interim determinations of adjustment factors between reviews, at the initiative of Ofwat or a water company. This enables particular unexpected circumstances that have a substantial impact on a water company's position to be taken into account.

- 4.10 Ofwat sets prices to allow each company to collect sufficient revenue to finance its operating expenditure and its capital investment programme. This includes the ability to finance capital investment through the return the company earns on its RCV and to pay tax. This is shown in Figure 2.

FIGURE 2

Calculating price limits



Source: Ofwat.

- 4.11 If a company outperforms the targets set by Ofwat, it is able to keep any additional savings for five years. This creates a 'carrot' to encourage increased efficiency.
- 4.12 Initially Ofwat determines a set of minimum service obligations, based on maintaining existing service levels, as well as any required quality enhancements and other service improvements that are agreed in conjunction with Defra, the DWI and the EA.
- 4.13 Once the service obligations have been set, the main stages in the operation of the comparative system leading to the setting of efficiency assumptions and price limits are:
- publication of guidance from Ofwat;
 - collection of data from the companies and comparisons between companies;
 - analysis of the data and setting of benchmarks;
 - adjustment of targets for company-specific special factors; and
 - setting of targets for each company based on the benchmarks.

Analysis of companies' data

- 4.14 Through comparative analysis of the data, Ofwat seeks to identify the most efficient company in each cost area and the position of the other companies relative to the most efficient company. Ofwat uses econometric and cost-base approaches as appropriate to determine the most efficient company in relation to each of operational

expenditure, capital maintenance expenditure and capital enhancement expenditure. This section details Ofwat's econometric models and cost-base approach before outlining their use in each area of expenditure.

Econometric models

- 4.15 Ofwat's econometric models attempt to measure the relative efficiency of water companies. In order to do so, Ofwat must adjust for heterogeneity among the operating and capital maintenance costs of water enterprises in order to compare like with like. Ofwat's econometric models attempt to remove the major variation in costs between water companies which are due to company-specific factors outside management control that are unrelated to efficiency. In this way it makes the remaining costs more directly comparable and therefore useful for the purposes of evaluating efficiency.
- 4.16 The econometric models Ofwat uses for its efficiency analysis in operational expenditure and capital maintenance rely on regression analysis. Regression analysis is a statistical technique which models the relationship between one dependent variable (in this case, costs) and one or more other independent variables that affect the dependent variable (in this case, cost drivers selected on an engineering and economic basis), and finds the magnitude of that relationship (ie the level of confidence with which we can say that the costs that are predicted by the model are in fact close to the true costs). Regression analysis does this by finding the relationship of best fit between the dependent variable and independent variables, using a number of statistical measures.
- 4.17 Ofwat's Water and sewerage service unit costs and relative efficiency report sets out the cost drivers that Ofwat has selected for each of its seven water econometric models. Ofwat finds the straight line of best fit between the cost and associated cost driver(s) by minimizing the variance of the differences between that straight line and each pair of cost and cost driver(s).
- 4.18 In PR04, Ofwat used four econometric models in considering operating costs. These covered water distribution costs, water resources and treatment costs, water power costs and the costs associated with other business activities. Ofwat used three econometric models in assessing capital maintenance expenditure: water distribution infrastructure; water distribution non-infrastructure; and water management and general. Ofwat also used a unit cost model of water resources and treatment costs. In PR04 Ofwat used six-year average expenditure for the period 1998/99 to 2003/04 to take account of annual variations in capital maintenance expenditure.
- 4.19 The results from each of the four operating expenditure econometric models are used to determine the expected costs of an averagely efficient company if it operated in each particular company's operating environment. This is done in the context of a combined operating expenditure model, which is not itself an econometric model, but which combines the actual and predicted costs from the individual econometric models. The difference between the particular company's actual costs and these predicted costs is known as the residual. Ofwat adjusts the residuals to ensure that they are all positive. This is equivalent to a parallel shift of the regression lines in each model to run through the combined benchmark company's costs. The combined adjusted residuals are then used as a basis for ranking companies in terms of efficiency, determining efficiency bands and calculating catch-up targets for each company.
- 4.20 A similar process is applied to the results from the three capital maintenance econometric models and the one unit cost model. However, in this case the capital

maintenance efficiency ranking, efficiency bands and catch-up targets are determined by taking an equally weighted combination of the results from the econometric and unit cost models and the results of the cost-base analysis.

Cost-base approach

- 4.21 Ofwat's cost-base analysis is based on unit cost data (known as standard costs) for 120 standardized capital projects submitted by the companies. The standardized projects cover a wide range of activities typical of water and sewerage services. Seventy-one of these standard costs are for water services, grouped into 8 main categories²⁷ and 18 sub-categories.²⁸
- 4.22 Companies provide Ofwat with estimates for the standard costs that have been audited by their reporters. As far as possible these are based on their own current or recent capital works programmes and reflect their future capital programmes. Ofwat then compares companies' standard cost estimates within each cost sub-category to gauge their relative efficiency. A benchmark company is selected for each sub-category. Each company's costs for the standardized projects within each sub-category are then compared with those of the benchmark company for the sub-category.
- 4.23 Under the cost-base assessment, the efficiency of each company is measured relative to the benchmark for each cost sub-category to identify the efficiency gap that can be caught up. This determines efficiency catch-up factors which are then weighted to reflect the make-up of each company's capital programme and combined to determine each company's overall capital maintenance and capital enhancement catch-up factors.²⁹
- 4.24 Ofwat considers that the econometric models measure overall efficiency in the planning, procurement and delivery of capital maintenance while the cost-base analysis measures efficiency in procurement and delivery. For this reason it averages the results of both analyses to determine a company's capital maintenance catch-up.
- 4.25 Capital enhancement efficiency is assessed solely on the basis of the cost-base analysis.

Benchmark criteria

- 4.26 The most efficient company in relation to each of operating expenditure, capital maintenance and capital enhancement is known as the frontier company. However, the benchmark company against which Ofwat judges relative efficiency will not necessarily be this frontier company. Ofwat told us that, for the frontier company to qualify as a benchmark:
- Ofwat must have no concerns about the consistency of the frontier company's data;

²⁷Five of the categories are for water infrastructure projects (ie below-ground projects): mains laying, mains laying by directional drilling, mains rehabilitation, communication pipes, household meters. Three of these categories are for water non-infrastructure projects (ie above-ground projects): water treatment works, water storage and water pumping.

²⁸The five water infrastructure categories are subdivided into 15 sub-categories; the three water non-infrastructure categories are not subdivided.

²⁹These are determined in four areas: capital maintenance infrastructure, capital maintenance non-infrastructure, capital enhancement infrastructure and capital enhancement non-infrastructure.

- the frontier company must have no special characteristics outside management control that significantly reduce its costs;
- the frontier company (or companies) must represent a reasonable proportion of industry turnover (historically typically 2.5 to 3 per cent);³⁰ and
- the company must have stable or improving serviceability (for capital maintenance).

4.27 Additional criteria apply to the selection of benchmarks for the cost-base analysis:

- the benchmark has an engineering judgement grade³¹ that is high enough (ie always B3 or better, mostly B2 or better);
- the business plan of the company that submits the benchmark estimate indicates significant planned investment in the particular capital project; and
- the benchmark is endorsed by Ofwat's engineering consultants.

4.28 In addition, where possible Ofwat chooses a single benchmark for each of the 18 sub-categories of standard costs.

Adjustment of targets for company specific special factors

4.29 Ofwat's econometric models take account of factors that describe the size or operating environment of the different companies. There are, however, other factors specific to the operating environment of particular companies, or groups of companies, that cannot be incorporated into the models; these special factors may lead to additional operating or capital maintenance costs that are outside management control. Special factors can include additional legal requirements or circumstances peculiar to an individual company's area of operation.³² Ofwat asks companies to submit claims for any special factors that should be taken into account in its relative efficiency assessments, together with a supporting case. Ofwat assesses the validity of these claims and the effect on the relevant companies' costs. Where appropriate, Ofwat takes the special factors into account by adjusting the results from the econometric models.

4.30 For the cost-base assessment, Ofwat takes account of regional cost variations before setting companies' catch-up factors. Ofwat makes company-specific regional

³⁰Ofwat's benchmark selection process is set out in Appendix 4 of Future water and sewerage charges 2005–10, Final determinations, Ofwat. Ofwat told us that the turnover threshold for cost-base benchmarks was a guide and was not considered in isolation. Small companies could be selected as cost-base benchmarks for projects if they had a large amount of relevant investment, even if their overall capital programme was small. For example, Portsmouth Water (a WoC smaller than MKW) had been used as the benchmark for the communications pipes group of standard costs.

³¹Engineering judgement grades (EJGs) reflect the confidence that can be placed on individual submitted standard costs. Companies are required to assign both a reliability grade (A to D) and an accuracy grade (1 to 4) to each standard cost that they submit, and must be certified by their reporters. An EJC of A1 would be assigned to the standard cost for which the company had considerable experience in its own region and could call on data from a series of similar completed projects (reliability grade A), and where the standard cost represented works for which reliable company-specific data was available and site-specific costs had been removed (accuracy band 1). An EJC of B2 indicates that the standard cost estimates are to within +/-20 per cent of the likely costs of carrying out the standardized project. An EJC of B3 indicates that standard cost estimates are based mostly on company-specific data and are to within +/-30 per cent of the likely costs of carrying out the standardized project. An EJC of D4 (the lowest) might be assigned to a standard cost based on national estimates for work not usually carried out by the company. At PR04, only 5 per cent of submitted costs had an EJC worse than B3. (Source: Ofwat *Future water and sewerage charges 2005–10—Final determinations: Periodic review 2004*, p259 and Table A5.)

³²Examples include a legal requirement for two companies to soften water before it is put into supply; and the high labour costs in south-east England. Further examples are given in *Water and sewerage service unit costs and relative efficiency*, Ofwat, December 2006.

adjustments to the estimated standard costs, to allow for the fact that construction, tender and labour costs are higher in the South of England, particularly around London.

Setting targets for each company

- 4.31 For each of the combined econometric models, Ofwat adjusts the residuals by 10 per cent to take account of errors in measuring costs and of the possible omission of relevant cost drivers.³³ Ofwat does not, therefore, assume that the residuals are made up entirely of inefficiency, but also captures errors in the data and in the statistical process. This treats water companies as if they were more efficient than if Ofwat were to assume that the residuals were made up only of inefficiency, with the result that price caps are less strict than would otherwise be the case. Ofwat then allocates companies into relative efficiency bands based on these adjusted residuals and calculates their catch-up factors to the benchmark.
- 4.32 To allocate the companies to relative efficiency bands, Ofwat ranks the companies by relative efficiency and divides them into five bands, where A is the most efficient. For operational expenditure, Ofwat sets band A to include companies with operational expenditure within 5 per cent of the benchmark. Subsequent bands are set at ten percentage point intervals from the bottom of band A; band E includes companies with costs more than 35 per cent greater than those of the benchmark company. Band A also includes companies that are more efficient than the benchmark company but are not considered a suitable benchmark. For capital maintenance, Ofwat sets band A to include companies within 10 per cent of the benchmark company's costs, and subsequent bands at ten percentage point intervals from the bottom of band A.
- 4.33 Once the benchmark company for each of operating expenditure, capital maintenance and capital enhancement is identified, the efficiency gap for each cost function for each company is calculated. The efficiency gap is the difference between the company's current performance and that of the chosen benchmark. In PR04 Ofwat's efficiency assumptions were based on each company catching up the following proportions of the gap with the benchmark company:
- 60 per cent over five years for operating expenditure;
 - 40 to 50 per cent³⁴ over three years for capital maintenance expenditure; and
 - 75 per cent in one year for capital enhancement expenditure;

Other adjustments

- 4.34 Ofwat allowed a premium to the annual cost of capital for the WoCs at PR04 (the small company premium (SCP)). This was to reflect an equity return premium to compensate for higher trading costs; an interest rate premium on the cost of debt; and premiums on the cost of raising capital (both debt and equity).
- 4.35 Ofwat also made additional revenue allowances to ensure that companies could raise capital to finance their capital programmes at reasonable rates (the

³³To do this, Ofwat multiplies each company's residual by 0.9. When considering the models for sewerage services, Ofwat adjusts the residuals by 20 per cent (ie it multiplies each company's residual by 0.8).

³⁴40 per cent for the catch-up derived from the econometric models, and 50 per cent for the catch-up derived from the cost base.

'financeability adjustment'). These revenue allowances were calculated on an annual basis for each company and effectively increased the cost of capital allowance for these companies. The net present values (NPVs) of the total financeability allowances across the industry were around £400 million over PR04.

Ofwat's other uses of comparators

- 4.36 In addition to the comparisons used in price reviews, Ofwat also uses data provided by water companies to undertake a number of other comparisons. Some involve ranking companies on the basis of a quantitative score, and some of these feed into companies' price caps.
- 4.37 Ofwat publishes its comparisons on an annual basis in a series of reports. A summary of recent reports is in Table 1.

TABLE 1 **Summary of key Ofwat reports, 2006**

<i>Ofwat report</i>	<i>Publication date</i>	<i>Comparisons made</i>
Water and sewerage service unit costs and relative efficiency: 2005–2006 report	December 2006	<ul style="list-style-type: none"> Models used in price reviews and summary of each company's relative efficiency for operating expenditure and capital maintenance
Security of supply, leakage and water efficiency: 2005–2006 report	November 2006	<ul style="list-style-type: none"> Comparisons of security of supply Assessment of company performance against leakage targets Estimation of water delivered to metered and unmetered households Comparisons of companies' performance on promotion of water efficiency to customers highlighting good and poor performance
Levels of service for the water industry in England and Wales: 2005–2006 report	November 2006	<ul style="list-style-type: none"> Annual performance against DG indicators—measures of customer service Overall performance assessment (OPA)
Financial performance and expenditure of the water companies in England and Wales: 2005–2006 report	September 2006	<ul style="list-style-type: none"> Headline numbers for the financial position of each company Industry-wide assessment of actual capital expenditure outputs Transfer pricing analyses Five-year review 2000–05.
Report on company performance in 2005–2006	September 2006	<ul style="list-style-type: none"> Financial reports for each company (P&L, cash flow) and financial ratios analysis
Water and sewerage charges 2006–2007 report	May 2006	<ul style="list-style-type: none"> Price limits and average bills Approval of charges schemes Household charges and bills
International comparison of water and sewerage service 2006 report: covering the period 2003–04	February 2006	<p>Assesses relative performance internationally:</p> <ul style="list-style-type: none"> Bills to customers Customer service levels Water quality and environmental performance Water delivered, leakage and water efficiency Unit costs and relative efficiency Network activity Financial performance

Source: CC analysis.

- 4.38 Comparisons made by Ofwat that involve the ranking of companies on the basis of a quantitative score are:
- the OPA;
 - the common framework for capital maintenance planning; and

- the assessment of security of water supply.
- 4.39 Other comparisons made by Ofwat that do not involve the ranking of companies are:
- performance against leakage targets;
 - supply and demand balance;
 - quality enhancement—drinking water;
 - customer service (other than the OPA);
 - tariffs;
 - revenue;
 - financial performance;
 - transfer pricing; and
 - competition.
- 4.40 In making these comparisons, Ofwat uses league tables and other qualitative comparisons which draw attention to particular companies' best practice. Ofwat also makes comparisons on companies' corporate governance and ring-fencing arrangements.
- 4.41 At price reviews, Ofwat looks at each company's draft business plan, setting out the company's strategy and approach, its objectives and how it plans to meet them. Ofwat told us that this allowed it to understand each company's overall performance. This comparison of the draft business plans allows Ofwat to challenge the company's proposals and may lead to revisions in its final business plans.

Overall performance assessment

- 4.42 Ofwat makes an annual assessment of the service companies deliver to customers through the OPA. The OPA reflects the broad range of services provided to customers. The key areas measured for water services are:
- water supply;
 - customer service; and
 - environmental impact.
- 4.43 The measures used in the most recent OPA report³⁵ are detailed in Table 2 and the maximum mark for each measure indicates its importance in the overall score.

³⁵An additional OPA measure for security of supply will be introduced into the OPA in 2007/08—RD 20/06: *Reflecting the security of supply in the overall performance assessment (OPA)* (December 2006).

TABLE 2 OPA measures and weightings*

	<i>Levels of service</i>
<i>Water supply</i>	
Properties at risk of low pressure (DG2)	38
Properties with unplanned interruptions (DG3)	38
Population with hosepipe bans	25
Water quality failing DWI standards	50
<i>Customer service</i>	
Customer contact score (DG6, 7, 8 and 9 combined)	38
Other customer service	38
<i>Environmental impact</i>	
Category 1 and 2 pollution incidents	13
Leakage assessment	<u>50</u>
Total score	288

Source: Ofwat.

*A full explanation of OPA measures and their calculation is provided in *Updating the overall performance assessment (OPA)—Conclusions and methodology for 2004–05 onwards*, March 2004.

4.44 Companies' OPA scores for each year from 2004/05 to 2008/09 will affect their price cap for PR09. In PR04 Ofwat could set adjustments from –1 to +0.5 per cent. However, Ofwat only chose to apply adjustments in the range –0.1 to +0.4 per cent, since no company's absolute performance justified a wider range of adjustments.

Common framework for capital maintenance planning

4.45 For PR04 the industry and Ofwat jointly developed a common framework for estimating the future level of capital maintenance required, using a forward-looking, risk-based approach.

4.46 Ofwat uses a four-stage process to assess each plan by category of spend:

- Stage A: considers expenditure necessary to maintain service to customers now and in the future based on past trends.
- Stage B: considers whether the future period is different.
- Stage C: considers scope for improvements in efficiency.
- Stage D: considers the impact of improvement programmes.

4.47 In stage B the plans are then ranked into five bands from A (leading) to E (trailing). Each company's 'non-exceptional' capital maintenance expenditure is adjusted according to the company's band.³⁶

4.48 Ofwat told us that by comparing the companies' business plans it can identify best practice, and challenge ones that do not provide value for money. Ofwat estimated that in PR04, this resulted in £400 million savings to customers.

³⁶Leading companies (band A) receive 100 per cent of their non-exceptional capital maintenance expenditure. This falls to 75 per cent for band B, 50 per cent for band C, 25 per cent for band D and 0 per cent for band E.

Security of supply

4.49 Ofwat uses a security of supply index to assess each company's compliance with its duty to ensure the security of its water supplies. Ofwat told us that it was able to track changes over time and, by publication of relative rankings, drive improvements in the service offered to customers. Ofwat publishes a comparison of all companies' performance in its annual security of supply, leakage and water efficiency report. Ofwat told us that its comparisons enabled it to identify publicly companies that were performing relatively poorly.

Leakage

4.50 At price reviews, companies produce plans for managing leakage in the future. As part of their water resource planning, they produce an analysis of the economic level of leakage and estimate how much it will cost to reduce leakage. Ofwat uses the comparisons to challenge these costs and the approach used to derive them. Companies are then required to report details on annual leakage performance in their June returns. Ofwat compares the estimated leakage against the company's leakage target that was set during the price review. Ofwat publishes data on an annual basis outlining the absolute and relative performance of companies and what action they are taking against poor performers.

Supply and demand balance

- 4.51 To assess companies' supply and demand balance, Ofwat makes comparisons on:
- security of supply (see paragraph 4.49);
 - leakage (see paragraph 4.50);
 - water resource planning and the options used by companies to balance supply and demand;
 - water efficiency;
 - metering;
 - costs and efficiency; and
 - drought management.
- 4.52 Ofwat makes comparisons of companies' performance in promoting the efficient use of water in its Security of supply, leakage and water efficiency report. Ofwat uses these comparisons to identify companies that are underperforming in this area and name them in the report. Ofwat also recently published a 'good practice register' which sets out companies' experience in implementing water efficiency measures.
- 4.53 Ofwat compares the various approaches to metering used by companies and the outcome achieved by each approach to identify good performance and challenge other companies to improve their policies.
- 4.54 Companies can recover contributions from developers for a range of works relating to new connections as set out in the WIA. Ofwat makes comparisons on performance in recovering these funds, and based on these Ofwat has developed a view of acceptable recovery rates.

- 4.55 Ofwat makes comparisons on companies' strategies for drought management. Based on the comparisons Ofwat challenges poor performers to improve their drought response as well as publicizing best practice.

Quality enhancement—drinking water

- 4.56 Ofwat compares approaches to meeting quality obligations and resulting costs. In addition, comparisons of companies' performance against water quality standards are made and published to drive performance improvements. Ofwat told us that these comparisons were an important element in defining the capital enhancement programme for each price review and had a substantial effect on reducing the final costs allowed in price limits.

Customer service (other than the OPA)

- 4.57 Ofwat makes various comparisons on the quality of service that companies are providing to their customers. Ofwat publishes the results and identifies better-performing companies. Ofwat told us that it developed guidelines to promote best practice and to assist companies improve their service (for example, compensation policies, debt handling and codes of practice). In addition, Ofwat may take regulatory action in respect of individual companies where performance is unsatisfactory.
- 4.58 CCWater carries out annual audits of companies' complaint-handling and debt-recovery activities and periodic reviews of other areas. When comparing companies' performance, it tends to concentrate on softer aspects of how customers have been treated rather than the harder quantified measures used in Ofwat's OPA analysis.

Tariffs

- 4.59 Ofwat told us that it had used ad hoc comparisons to develop a set of checks for Condition E of a company's licence. Condition E of the licence states that the company has a duty to ensure that no undue preference or discrimination is shown to any class of customers or potential customers, such as those covered by the vulnerable groups regulations for water charges.³⁷
- 4.60 In addition, Ofwat uses the information collected to develop policies on innovative tariff structures that go beyond Condition E of the licence.³⁸

Revenue

- 4.61 As part of price reviews, Ofwat calculates each company's base revenue (the revenue the company would receive without any change in price limits). At PR04, Ofwat used an econometric model to compare companies' projections of the number of customers opting for a meter and so paying on a volumetric basis. Ofwat also compares the various assumptions within each company's base revenue forecast and challenges companies using unusual assumptions. However, Ofwat told us that these comparisons were not essential for revenue forecasting but were important for metering projections.

³⁷For example, metered customers on low incomes with certain medical conditions that necessitate the use of extra water.

³⁸Ofwat gave us the example of one water company that had pioneered a tariff for customers on low incomes with certain medical conditions that necessitated the use of extra water but who were not metered and who were not covered by the vulnerable groups regulations for water charges.

Financial performance

4.62 Condition F of a company's licence requires it to submit annually a set of regulatory accounts prepared on a current cost and historic cost bases. Ofwat told us that making comparisons of these accounts allowed it to:

- monitor each company's compliance with the regulatory accounting guidelines;
- compare performance between companies both now and over time;
- identify outliers and understand the reasons why their activities/figures are different from the rest of the industry;
- challenge poor performers to improve;
- consider if specific companies' accounting policies and assumptions are appropriate;
- consider if the commentaries submitted with the annual returns meet the requirements it has specified;
- comment on industry-wide trends in its annual report on the financial performance and expenditure of companies; and
- establish the base position for modelling of future price limits.

Transfer pricing

4.63 The companies have a statutory duty to ensure that there is no cross-subsidy between the appointed business and other group companies. Ofwat produces a regulatory accounting guideline to assist companies in meeting these requirements. This ensures that the appointed business pays a fair price for services and products received from associates and that costs are allocated in relation to the way resources are consumed.

4.64 Ofwat makes comparisons of information gained through transfer pricing review visits and annual monitoring. Ofwat told us that these comparisons allowed it to raise any issues with companies and highlight areas of best practice.

Competition

4.65 Ofwat told us that it had used comparative competition relatively little in relation to market competition, and the merger was likely to have minimal impact on its approach. However, Ofwat told us that it could use comparisons to assist actual competition under inset appointments or WSL.

5. Assessment of the effect of the merger on Ofwat's ability to make comparisons

Overview

5.1 During our inquiry, we identified four different ways in which the merger might adversely impact Ofwat's ability to make comparisons between water enterprises in carrying out its functions under the WIA:

- the merger may result in the loss of a company which is expected to form the benchmark in Ofwat’s econometric models (see paragraphs 5.7 to 5.36);
 - the merger may reduce the precision of the econometric models from which Ofwat estimates technical efficiency targets (see paragraphs 5.37 to 5.82);
 - the merger may adversely affect Ofwat’s ability to make cost-base comparisons and challenge cost-base estimates (see paragraphs 5.83 to 5.112); and
 - the merger may adversely affect Ofwat’s ability to make other, qualitative comparisons between companies (see paragraphs 5.113 to 5.128).
- 5.2 We considered the four possible adverse impacts separately largely for convenience and clarity of discussion. We note that there are important linkages between some of the different impacts, and that some of the issues (for example, the discussion of the adverse impact on the benchmark for the econometric and cost-base analyses) are similar.
- 5.3 We discuss each of these possible adverse impacts in turn in this section. We then consider whether there is any evidence that the merger announcement had an impact on the prices of corporate bonds issued by companies active in the water sector (see paragraphs 5.129 to 5.131). We set out our conclusions on the possible adverse impacts in paragraphs 5.132 and 5.134). We discuss possible alternative approaches that Ofwat might use to make comparisons between water companies in Section 6, before reaching our conclusions as to whether the merger would be likely to prejudice Ofwat’s ability to make comparisons between water companies in Section 7, having regard to our views on the possible adverse impacts.
- 5.4 In the absence of the merger, there are 22 companies, including MKW and SEW, providing water services in England and Wales.³⁹ Our discussion of the possible adverse impacts of the merger assumes that, should the merger be allowed to proceed, Hastings would merge the operations of MKW and SEW so that the two existing companies operated as a single company under one licence (see paragraph 3.9). The merger would therefore result in the loss of one company. In discussing each of the possible adverse impacts, we compare the effects of the merger to the counterfactual situation which we take to be the industry with the existing number of comparators, including MKW and SEW being owned and operated independently.
- 5.5 Ofwat said that with each successive merger there would be an erosion in its ability to make comparisons, and that we should take this into account. We recognized that the current merger would be likely to result in the permanent loss of a comparator. However, we formed the view that, under the Act, we could consider only whether this merger may be expected to prejudice Ofwat’s ability to make comparisons. We could not take into account the cumulative effect of further successive mergers on Ofwat’s ability to make comparisons.
- 5.6 We considered the effect of the merger in the foreseeable future. Given the long-term nature and relative stability of the water industry, we reached the view that the foreseeable future consisted of the period covering the next two price reviews. We therefore considered whether the merger may adversely affect Ofwat’s ability to

³⁹See paragraph 2.3: two very small WoCs are excluded from these numbers. We note that there are not necessarily 22 comparators in every instance. Some of Ofwat’s comparisons may be made only between 19 or 20 independent companies—as three WoCs (Folkestone & Dover, Tendring Hundred and Three Valleys) are owned by Veolia. In Ofwat’s view, the ownership of more than one water enterprise by a single owner of itself impacts adversely upon its ability to make comparisons between water enterprises.

make comparisons at the next price review in PR09 and at the following price review in PR14.

Adverse impact on the benchmark

- 5.7 The first possible adverse impact that we consider is whether the merger may be expected to result in the loss of a company which is expected to form the benchmark in Ofwat's econometric models. The effect of this would be adversely to shift Ofwat's statistically estimated technical efficiency benchmark for operating or capital maintenance expenditure. This might arise in one of two ways:
- (a) both MKW and SEW may individually be expected to form a benchmark, so that the merger would result in the loss of an expected benchmark;⁴⁰ or
 - (b) only one of MKW or SEW may be expected to form a benchmark, and the merged company would be less likely than the individual company to form a benchmark.
- 5.8 Ofwat told us that the loss of a benchmark company would lead to a very substantial permanent loss of efficiency across all companies in England and Wales, since it would lead it to set lower efficiency catch-up factors than would otherwise be the case. Its calculation looked at the impact of less challenging efficiency assumptions at one periodic review which would reduce the incentive on companies to achieve improved efficiency. It estimated the NPV over 30 years of the permanent loss of efficiency in one review period at several hundred million pounds, with the bulk of the impact occurring as a result of less challenging targets for operating expenditure efficiency.

Existing rankings and bands

- 5.9 In order to assess whether either of the scenarios set out in paragraph 5.7 was likely to arise, we considered MKW's and SEW's rankings for overall operating expenditure, overall capital maintenance expenditure and each of the individual econometric models for 2005/06. We also looked at potential movements in rankings and in bands over time, both for companies in general and for MKW and SEW in particular, and the likelihood of the merged company forming a benchmark, based on movements in rankings and bands over the recent past.
- 5.10 We focused on rankings and bands in Ofwat's combined operating expenditure and capital maintenance expenditure models since this is the level at which Ofwat reports results and sets targets.
- 5.11 We recognized that, in order to form a benchmark, it was not necessary for a company to reach the top of the rankings. Ofwat's criteria for setting a benchmark in its econometric models were set out in paragraph 4.26. In practice, this means that, based on 2005/06 data, ten WoCs, including MKW, are excluded from forming a benchmark individually because they are each too small. The three companies that are under the common ownership (of Veolia) are also excluded from forming a benchmark individually, which leads to the exclusion of one further WoC, Three

⁴⁰This also assumes that the merged company would be less likely than the two companies taken together to form a benchmark.

Valleys.⁴¹ Hastings told us that Ofwat usually selected companies from the top three. Ofwat told us that although the benchmark may have been selected from the top three in recent years for operating expenditure, it was not the case for capital maintenance expenditure where, in the last seven years, the benchmark was ranked 3rd twice, 4th twice, and 6th, 7th and 13th (Northumbrian Water Ltd, the capital maintenance benchmark in 2005/06) once. However, Hastings told us that the choice of a benchmark company was particularly important in the year of a price review, and, in such a year, the selection of a benchmark which was not considered credible by the industry for any reason was likely to be challenged strongly. Consistent with this, Ofwat told us that in the draft determinations for PR04, Thames Water was the benchmark company for sewerage operating expenditure. However, this was changed for the final determination, following challenge from the industry suggesting that Thames Water's costs were too strongly affected by the presence of very large sewage treatment works for it to be considered representative of the industry.

- 5.12 Hastings and Ofwat told us that neither MKW nor SEW had ever formed the benchmark in either operating or capital maintenance expenditure. In 2005/06, neither company was at, or close to, the efficiency benchmark for operating or capital maintenance expenditure. The rankings are set out in Table 3. Overall, MKW was ranked 13/22 for operating expenditure and 18/22 for capital maintenance expenditure efficiency; SEW was ranked 14/22 for operating expenditure and 16/22 for capital maintenance expenditure efficiency. The only econometric models for which the companies were ranked higher than 10th were for water distribution operating expenditure (where SEW was ranked 5th), water business activities operating expenditure (where MKW was ranked 8th), and water power operating expenditure (where SEW was ranked 9th).

TABLE 3 Rankings of MKW and SEW in 2005/06 for operating and capital maintenance expenditure efficiency

	Ranking 2005/06	
	MKW	SEW
<i>Operating expenditure</i>		
Resources and treatment	12/22	15/22
Distribution	16/22	5/22
Power	18/22	9/22
Business activities	8/22	20/22
Overall	13/22	14/22
<i>Capital maintenance expenditure</i>		
Distribution infrastructure	18/22	19/22
Distribution non-infrastructure	21/22	10/22
Management and general	17/22	20/22
Overall	18/22	16/22

Source: Ofwat.

- 5.13 In the past ten years, MKW has never been in band A for either type of expenditure, and was banded B in both operating expenditure and capital maintenance expenditure in 2005/06.⁴² SEW was banded B for both operating and capital maintenance expenditure in 2005/06. Since it was formed from the merger of Mid Southern Water and the previous South East Water company in 1997/98, SEW has not been banded A for operating expenditure; in capital maintenance expenditure, it

⁴¹Three companies are currently under investigation for inconsistencies in the submission of data (Severn Trent Water Ltd, Southern Water Services Ltd and Thames Water) and are therefore currently excluded from being used as a benchmark. However, Ofwat told us that this was an exceptional situation which it was making every effort to resolve ahead of the next price review.

⁴²MKW was banded C for capital maintenance expenditure in 2005/06 prior to Ofwat updating its unit cost and relative efficiency report.

was banded A three times between 1999/2000 and 2003/04. Hastings told us that, given that Ofwat averaged data over several years, SEW's ranking was now falling and was likely to continue to fall, until its lower capital maintenance spend of 1998/99, 1999/2000 and 2000/01 dropped out of the averaging process. The late 1990s was a period of relatively low investment in capital maintenance which was unlikely to recur in the foreseeable future. Ofwat, however, told us that there was no direct correlation between a company's average expenditure and its efficiency band/ranking, since this would depend on the performance of the rest of the industry and actual expenditure in coming years.

Future rankings and bands

- 5.14 In considering whether we might expect either company to form a benchmark in the foreseeable future, we took account of companies' movements in ranking and bands in the recent past. Whilst we recognize that the past is not necessarily a good predictor of the future, this is a common analytical approach and one that seemed to us to be a reasonable one. We also note that Ofwat looks at performance measures from the recent past when making regulatory decisions that affect the future, so our approach was consistent with industry practice. We acknowledge, however, that many factors might contribute to companies' relative performance over time, and these would not necessarily be captured in the companies' past performance.
- 5.15 Ofwat told us that it could not, and would not, seek to predict individual company performance in the future. However, it told us that it had seen examples of companies making significant progress in ranking in a relatively short space of time (sometimes within a year). Yorkshire Water Services Ltd (Yorkshire Water) and South Staffordshire Water Plc (South Staffordshire Water), for example, leapfrogged up the rankings for both operating and capital maintenance expenditure efficiency in the past.⁴³
- 5.16 Hastings submitted an analysis of the probability of MKW and SEW improving the required number of places in the rankings to be benchmark companies for operating expenditure efficiency in time for PR09 or PR14. Hastings' analysis concluded that the probability was low. Depending on which methodology was used, Hastings estimated that the probability of MKW or SEW becoming benchmark companies for PR09 (ie improving 13 operating or capital maintenance expenditure places in two years to rank in the top 5) was between 3 and 5 per cent for operating expenditure, and between 1 and 10 per cent for capital maintenance expenditure efficiency (see Table 4). For PR14, Hastings said that the probability was 20 per cent for operating expenditure and 36 per cent for capital maintenance expenditure.

⁴³Yorkshire Water improved from 18th in the capital maintenance expenditure rankings for 2002/03 to 1st in 2003/04. South Staffordshire Water moved from 13th in the operating expenditure efficiency rankings for 2001/02 to 2nd in 2002/03. Hastings told us that South Staffordshire Water's improvement in performance arose as a result of centralization of its management functions, which has already taken place at both MKW and SEW. Ofwat told us that this example was intended to illustrate the type of improvement which had taken place in the past.

TABLE 4 Hastings' estimated probabilities of MKW or SEW reaching first rank for PR09 and PR14

	<i>per cent</i>			
	<i>MKW</i>		<i>SEW</i>	
	<i>PR09</i>	<i>PR14</i>	<i>PR09</i>	<i>PR14</i>
Operating expenditure efficiency	1.5–3.0*	11.0	1.5–2.0*	9.0
Capital maintenance expenditure efficiency	1.4–5.0*	18.0	0.0–5.0*	18.0

Source: Hastings.

*Depending on methodology used (ie whether 2 x one-year movements are considered or 1 x two-year movement).

- 5.17 In order to assess Hastings' probability analysis, we considered whether, on average, companies were more likely to be moving up the rankings or bands than staying in the same place or moving down. Recognizing that companies did not necessarily progress in a linear fashion, we also looked at the frequency and magnitude of changes in rankings of operating and capital maintenance expenditure. We set out the results of these analyses in paragraphs 5.18 to 5.23; further details are set out in Appendix F.
- 5.18 We looked at the changes in both the operating and capital maintenance expenditure efficiency rank of the 22 water companies from 2001/02 to 2005/06 and the changes in band from 2000/01 to 2005/06. We found that, for operating expenditure, it was most likely that companies' movements up the rankings were followed by subsequent movements down the rankings and vice versa (see Table 1 of Appendix F).
- 5.19 Looking at the extent to which a company might move between operating expenditure bands, we found that the greatest probability associated with being in band B in a particular year was that of staying in band B (69 per cent), rather than improving to band A (see Table 2 of Appendix F).
- 5.20 We also looked at the frequency and magnitude of changes in rankings of the 22 water companies from 2000/01 to 2005/06. We considered the ranking a company would have to reach to have a chance of forming the benchmark. Ofwat told us that the current capital maintenance benchmark, Northumbrian Water, was ranked 13th; SEW was only three places, and MKW five places, behind the company ranked 13th. We thought, however, that it was exceptional for Ofwat to take a benchmark ranked 13 (see paragraph 5.11) and we did not accept that SEW would only need to climb three places, or MKW five places, to become a benchmark. We looked at the probabilities of a company climbing into the top 7, the top 5 and the top 3, based on the current position of SEW and MKW and having regard to the benchmark ranks in paragraph 5.11.
- 5.21 The results for operating expenditure are shown in Tables 3 to 6 and Figures 1 and 2, and summarized in Table 7, of Appendix F. These showed that the highest probabilities were associated with small changes in rank (improving or worsening by a few places at most), or staying in the same place. We also calculated improvements in ranking over two years (ie in time for PR09). The highest probability associated with climbing at least seven places up the ranking in two years (into the top 7) was 23 per cent. We also considered the probability associated with climbing at least 9 places (into the top 5) and at least 11 places (into the top 3) by PR09, given that benchmarks appeared more often to be selected from these higher ranks. We found that the highest probabilities associated with such changes in rank were 13 and 10 per cent respectively.

- 5.22 For capital maintenance expenditure efficiency, our analysis of transition probabilities suggested that the highest probabilities were again associated with companies' movements up the rankings being followed by subsequent movements down the rankings and vice versa (see Table 11 of Appendix F).⁴⁴ In terms of band, we found there to be a 50 per cent probability of a company moving up from band B to band A (see Table 12 of Appendix F). In terms of frequency and magnitude of changes in rankings, the highest frequencies were again associated with small changes in rank (improving or worsening by a few places at most), or staying in the same place (see Tables 13 to 16 and Figures 3 and 4 of Appendix F). The highest probability associated with climbing at least eight places up the ranking in two years (into the top 7) was 33 per cent. For climbs of at least 10 and at least 12 places (to fifth and third position, respectively), the highest probabilities were both 20 per cent respectively (see Table 17 in Appendix F).
- 5.23 We did not have enough data to make an estimate of the probability of reaching the benchmark for PR14 which allowed for the lack of independence in the year-on-year movements in the rankings. We therefore estimated the probability of reaching the benchmark for PR14 by considering permutations of five-year and two-year changes (see Tables 8 and 9 of Appendix F for operating expenditure and Tables 18 and 19 of Appendix F for capital maintenance expenditure). For operating expenditure, we found that the probability of improving at least 7 places in 7 years was 34 per cent; that the probability of improving at least 9 places in 7 years was 24 per cent; and that the probability of improving at least 11 places was 16 per cent (see Table 10 of Appendix F). For capital maintenance expenditure, we found that the probability of improving at least 8 places in 7 years was 32 per cent; that the probability of improving at least 10 places in 7 years was 24 per cent; and that the probability of improving at least 12 places was 17 per cent (see Table 20 of Appendix F).
- 5.24 Overall, the historical analysis described in paragraphs 5.14 to 5.23 suggests that past improvement in rank is most likely to be followed by a worsening in rank as other companies outperform the companies that were relatively successful in previous periods. It also suggests that, for operating expenditure, it was most likely that a company in band B would stay in band B rather than improve to band A. However, the position was less clear for changes in capital maintenance expenditure band. Having identified these general trends, we looked specifically at the chances of MKW and/or SEW forming a benchmark.

Chances of MKW forming a benchmark

- 5.25 MKW's turnover is too low (at less than 2.5 per cent of the total) to form a benchmark alone (see paragraph 4.26).⁴⁵ It would, in theory, be possible for MKW to form a benchmark as part of a group of smaller companies, as was the case in 2004/05 for operating expenditure, when the benchmark was formed by Portsmouth Water Plc, South Staffordshire Water, Dee Valley Water Plc and Cambridge Water Company Plc. Hastings said that, in its view, this was very unlikely to occur.⁴⁶
- 5.26 We looked at the likelihood of MKW reaching the benchmark at the same time as other small companies in the next review period. In particular, we looked at the probability of MKW reaching the top two alongside Bristol Water Plc (Bristol Water) or

⁴⁴The estimated probabilities of a worsening in rank in the year after an improvement in rank and vice versa are both around 50 per cent. The estimated probability of experiencing a continued improvement in rank year on year is 41 per cent.

⁴⁵MKW had a 1.1 per cent share of total industry water service turnover in 2005/06.

⁴⁶Ofwat told us that, even if MKW could not be expected to reach the efficiency frontier at the same time as other small companies and hence form part of the benchmark, if it reached the frontier its performance could be used to corroborate that of the benchmark company.

South Staffordshire Water (both WoCs), either one of which, when combined with MKW, appeared to be large enough to form the benchmark. This seemed to us to be the most likely way in which MKW would reach the benchmark, since it involved only one other WoC reaching the benchmark at the same time. For MKW and South Staffordshire Water or Bristol Water to form a combined benchmark with each other, the two companies would have to rank higher than any company that could set the benchmark on its own, according to Ofwat's rules. Given that there are other WoCs—too small to form an individual benchmark—that could be ranked above MKW and South Staffordshire Water or Bristol Water and form a combined benchmark, MKW and South Staffordshire Water or Bristol Water essentially would have to reach the top of the rankings to form a combined benchmark.

- 5.27 In 2005/06, Bristol Water was ranked 17 for operating expenditure, meaning it would have to improve at least 15 places in the operating expenditure rankings to form a benchmark alongside MKW (which would have to improve 12 places). We found that the probability associated with this was 2 per cent, so the combined probability of both MKW and Bristol Water forming the benchmark was less than 2 per cent.⁴⁷ In 2005/06, Bristol Water was ranked 11 for capital maintenance expenditure, meaning it would have to improve at least nine places in the capital maintenance expenditure rankings to form a benchmark alongside MKW (which would have to improve by 17 places). We found that the probability associated with Bristol Water improving by at least nine places was 15 per cent, so the combined probability of MKW forming the benchmark and Bristol Water reaching second was less than 3 per cent.⁴⁸
- 5.28 In 2005/06, South Staffordshire Water was ranked 5 for operating expenditure, meaning that it would have to improve at least two places to form a benchmark with MKW. We found that the probability associated with this was 37 per cent, so the combined probability of MKW and South Staffordshire Water forming the benchmark was 3 per cent. For capital maintenance expenditure, South Staffordshire Water was ranked 7 in 2005/06, so the probability of it improving at least five places to form a combined benchmark with MKW was 1 per cent.
- 5.29 We further looked at the probability of MKW forming the benchmark in PR09 with two or three other water companies. We assumed for this purpose that other small water companies would need to improve a comparable number of places to MKW in the operating and capital maintenance expenditure rankings to form a benchmark with it. This would mean that the probability of one or two of them forming the benchmark alongside MKW would be no greater than the probability of MKW doing so alone, which we estimated to be low.
- 5.30 On the basis of the analysis set out in paragraphs 5.9 to 5.23 and 5.25 to 5.29, we reached the view that MKW was not likely to form the benchmark in the next two price review periods for either operating expenditure or capital maintenance expenditure and that the scenario set out in paragraph 5.7(a) was not likely to occur.

Chances of SEW forming a benchmark

- 5.31 We also looked at factors specific to SEW. Hastings said that it was not clear whether SEW was large enough to form the benchmark as a stand-alone company, since Ofwat had in the past used water service turnover of between 2.5 and 3 per cent as its threshold. Ofwat, however, told us that SEW was sufficiently large to be

⁴⁷If two events, A and B, are not independent, the probability of A and B occurring is less than or equal to the minimum of the probability of A and the probability of B. Here, one probability is 7 per cent and the other is 2 per cent.

⁴⁸One probability is 15 per cent and the other is 3 per cent and they are not independent, so the probability of both occurring is less than or equal to the minimum of these.

used on its own as a benchmark company. It also told us that SEW was one of the ten most efficient companies for capital maintenance expenditure when Ofwat last undertook its cost-base analysis in PR04.

- 5.32 The relevant comparison, however, is between the likelihood of SEW, on a stand-alone basis, and the merged company reaching the benchmark. Ofwat told us that company performance, as reflected in its banding criteria, was as likely, if not more likely, to worsen as to improve after the merger, suggesting that the merged company's performance was unlikely to be as good as SEW's alone. For example, in the merger that formed South East Water, the two merging companies were in bands E (the old South East Water) and A (Mid Southern), but the merged company was banded E for the two years following the merger, and even following the merger of operations and licences, only achieved a band C. Other examples of worsening performance band following a merger included the merger of Northumbrian Water and Essex & Suffolk Water, and the Three Valleys Water/North Surrey Water merger.
- 5.33 Hastings, on the other hand, told us that the merged company was more likely to form the benchmark than either company was individually, since it would benefit from the best practices of both companies, and the cost synergies that would result from the merger. Hastings also told us that within two to three years of the mergers of Northumbrian and North East Water (in April 1996), Bournemouth and West Hampshire (in July 1994), and the formation of Dee Valley (in April 1998),⁴⁹ the resulting company was at the frontier for operating expenditure. Ofwat said that it only introduced efficiency bands and ranks in 1996/97 and hence the evidence of relative performance following the first two of these mergers was not clear. Further, Ofwat said, Dee Valley did not improve the year after it was formed and—although it improved two years after it was formed—it was neither a frontier nor a benchmark company.
- 5.34 We thought that there was some force in Hastings' argument that this merger would create a more efficient company that would be more likely to form a benchmark. We are also aware, however, that mergers sometimes fail to create a more efficient company, at least in the short term.
- 5.35 On the basis of the analysis set out in paragraphs 5.9 to 5.23 and 5.31 to 5.34, we reached the view that:
- (a) given its current performance, SEW could not be expected to reach the benchmark in either operating or capital maintenance expenditure in PR09; and
 - (b) looking to the period after PR09, we could not form an expectation that the merged company's performance would be worse than SEW's.

We therefore found that the scenario set out in paragraph 5.7(b) was not likely to occur.

Conclusions on adverse impact on the benchmark

- 5.36 In paragraphs 5.30 and 5.35 we found that the scenarios set out in paragraph 5.7 were not likely to occur. We therefore conclude that this merger is not likely to result in an adverse impact arising from the loss of a company which is expected to form the benchmark in Ofwat's econometric models.

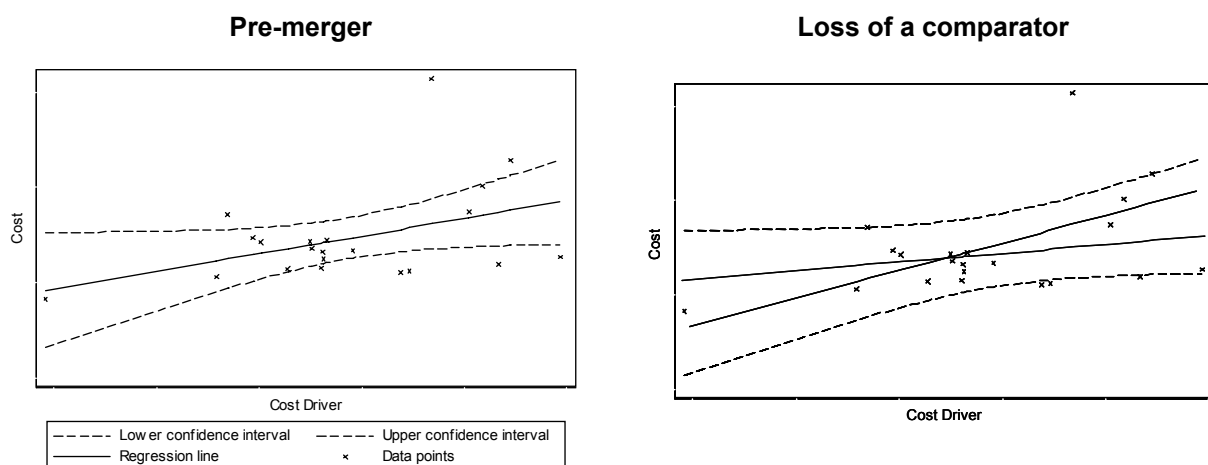
⁴⁹Merger of Chester Waterworks and Wrexham & East Denbighshire.

Adverse impact on precision

- 5.37 The second possible adverse impact that we consider is whether the merger might be expected to reduce the precision of the econometric models from which Ofwat estimates technical efficiency targets, regardless of whether SEW or MKW is likely to form a benchmark.
- 5.38 Figure 3 illustrates the possible impact of the merger on the precision of Ofwat's econometric models. The left panel in the figure shows the straight-line relationship of best fit between the data for each company on costs and cost drivers (the x's) estimated by Ofwat's regression analysis. The dashed curved lines above and below the straight regression line mark the confidence interval: the interval within which Ofwat can be sure (with 95 per cent confidence) that its estimate of the slope of the straight line lies.
- 5.39 Ofwat essentially measures companies' relative inefficiency based upon the distance of each data point (ie each combination of one company's cost and cost driver) from the regression line, ie the 'residuals'. Ofwat does this in terms of an overall model that combines its four models of operating expenditure, and in terms of an overall model that combines its three econometric models of capital maintenance expenditure and its capital maintenance expenditure based only on comparisons of unit costs. In fact, Ofwat adjusts the residuals in each of the combined models by shifting the regression line down in parallel, to ensure that all the residuals are non-negative, as efficiency differences must all be positive.⁵⁰ Ofwat also reduces the residuals by 10 per cent, to allow for the fact that not all the difference is inefficiency but arises in part from measurement error and the omission from its models of some cost drivers (see paragraph 4.19).

FIGURE 3

Illustration of possible impact of merger on precision



Source: CC.

- 5.40 The right panel of Figure 3 shows how, in theory, the loss of a comparator widens the confidence interval (the dashed lines) because Ofwat has less data with which to determine the regression line and statistical estimates are less precise with less data.

⁵⁰Residuals may be positive if companies are beyond the benchmark, but do not satisfy Ofwat's benchmark criteria. Ofwat sets these residuals to zero in its analysis, as we do in ours.

- 5.41 The increase in the width of the confidence interval means that Ofwat is less certain about the slope of the regression line. For example, the regression line may tilt from its position in the left panel of Figure 3 to either of the solid lines in the right panel. If so, the residuals—the gap between each ‘x’ data point and the regression line—would change. A wider confidence interval means that the line would tilt up or down more. This means that Ofwat’s measure of companies’ relative inefficiency changes: this is the adverse impact that would in principle arise as a result of the widening of the confidence interval.
- 5.42 In order to assess this possible adverse impact we considered the following:
- (a) the precision of Ofwat’s existing individual econometric models for operating expenditure and capital maintenance expenditure; and
 - (b) the effect of the removal of a comparator as a result of the merger on the precision of Ofwat’s individual and combined models.

We discuss each of these in turn; further details are set out in Appendix G.

Precision of Ofwat’s existing models

- 5.43 We investigated the precision of Ofwat’s existing individual econometric models in two different ways. First, we used the standard error of the slope of regression line between the cost and the cost driver⁵¹ (the standard error) as a measure of the width of the confidence interval around Ofwat’s estimate of the regression line.⁵² As the number of comparators in each econometric model becomes smaller, the standard error will increase, indicating that the model has become less precise. In principle, the standard error can become so imprecise (as the number of comparators reduces) that the econometric model is of little use.
- 5.44 We used a statistical resampling technique called bootstrapping to assess the precision of Ofwat’s models. This involved resampling Ofwat’s data 1,000 times, re-estimating Ofwat’s models each time.⁵³ We compared the standard errors from this technique (the bootstrapped standard errors) with those derived from Ofwat’s models. The results of our comparisons are set out in Tables 1 (individual operating expenditure models) and 2 (individual capital maintenance expenditure models) of

⁵¹The width of the confidence interval (CI) is proportional to the standard error (denoted σ) of the estimated slope of the regression line (denoted β) according to $CI = \beta \pm t\sigma/\sqrt{(n-k)}$, where n is the number of data points, k is the number of parameters being estimated and t is a number obtained from statistical tables. The precise value of t depends upon the value of $n-k$ and the confidence probability such that for a 70 per cent confidence interval the value of t is approximately 1 while for a 95 per cent confidence interval t is approximately 2. The \pm in the formula indicates that the CI has upper and lower bounds (ie it is expressed as two numbers). For this reason, we use the standard error in our analysis because it is a single number, which makes our results easier to express.

⁵²We ignore the standard error around Ofwat’s estimated intercept term in each econometric model because, by shifting its estimated relationship between costs and cost drivers in parallel to arrive at the efficiency frontier and to estimate companies’ distance from it, Ofwat essentially does not make use of it.

⁵³We drew 1,000 random samples from Ofwat’s data. In each of these samples, some of Ofwat’s comparators appeared once, some appeared more than once and some did not appear at all. With each of these 1,000 random samples, we re-estimated Ofwat’s models, generating 1,000 estimates of the slope of the straight-line relationship between cost and cost driver(s). The standard deviation of the distribution of these 1,000 estimates (known as the bootstrapped standard error) gives us a measure of how precise the standard errors of Ofwat’s estimates could be, if Ofwat had more comparators.

Appendix G.⁵⁴ These suggested that Ofwat's existing individual models have enough comparators to be of use.

5.45 Second, we looked at the statistical power of Ofwat's individual econometric models by assessing Ofwat's ability to identify statistically significant relationships in each of its models both with 22 and 21 comparators. The detailed results of this analysis are set out in Tables 3 (individual operating expenditure models) and 4 (individual capital maintenance expenditure models) of Appendix G. We found, in general, that the individual models for both operating and capital maintenance expenditure were sufficiently robust (ie they enabled the slope of the regression line to be estimated with reasonable certainty). We also found that the slope of the regression line could still be estimated with reasonable certainty with 21 rather than 22 comparators. We note that the water distribution operating expenditure model appeared to have a lower statistical power with either 22 or 21 comparators than the other models (around 50 per cent chance of detecting a statistically significant slope).

5.46 We therefore conclude that Ofwat's individual models are sufficiently robust to be of use with both 22 and 21 comparators.

Impact of the merger on precision

5.47 Having reached a view that Ofwat's individual econometric models were sufficiently robust to be of use, we looked at the possible impact of the merger on the precision with which Ofwat can estimate its individual regression lines, and hence its ability to set appropriate efficiency catch-up targets from its combined models.

5.48 We assessed this in three different ways:

- (a) by examining the effect of reducing the number of comparators on the basis of statistical theory;
- (b) by examining the effect of reducing the number of comparators in general from the individual and combined models on the basis of historical data; and
- (c) by examining the effect of the loss of MKW and SEW as comparators in the individual and combined models and their replacement with a new, merged comparator again on the basis of historical data.

Statistical theory approach

5.49 For a given number of cost drivers, a statistical model which includes more data has more 'degrees of freedom.' In particular, the precision of the results from a statistical model increases with its 'degrees of freedom.'

5.50 There is a direct relationship between degrees of freedom and the number of comparators. Six out of seven of Ofwat's individual models have one cost driver.⁵⁵ The degrees of freedom for these models equal two less than the number of

⁵⁴We found that Ofwat's standard errors could be different were Ofwat to have more data but that the size of this difference was small when expressed as a proportion of Ofwat's standard errors (ie between 0.5 and 3.3 per cent for operating expenditure, and between 0.5 and 2.4 per cent for capital maintenance expenditure). Expressed as a proportion of the bootstrapped standard deviation, the difference is between 4.2 and 17.4 per cent for operating expenditure and between 1.7 and 7.7 per cent for capital maintenance expenditure). In general, the difference is not considered to be an issue when it is less than 25 per cent of the bootstrapped standard deviation as it is here. (See Efron, B (1982), *The Jackknife, the Bootstrap and other Resampling Plans*, Society for Industrial and Applied Mathematics: Philadelphia.)

⁵⁵These models have a slope parameter (ie the impact of the cost driver on cost) and an intercept parameter.

observations (ie there are 20 degrees of freedom with 22 comparators). The seventh individual model has two cost drivers. The degrees of freedom reduce by one with each additional cost driver.

- 5.51 According to statistical theory, the width of a confidence interval is inversely proportional to the square root of the degrees of freedom.⁵⁶ It follows that the confidence interval will widen as the number of comparators decreases. Table 5 shows the marginal rate of increase in the width of the confidence interval with the loss of a comparator for different numbers of existing comparators. If there were 50 comparators, the loss of one would lead to an increase in the width of the confidence interval of just over 1 per cent. With ten comparators, the loss of one increases the width of the confidence interval by 6.9 to 8 per cent. The loss of one comparator from 22 to 21 increases the width of the confidence interval by 2.6 to 2.7 per cent.

TABLE 5 Attrition in the precision of the estimate of the efficiency frontier from the loss of a comparator

Number of comparators	Rate of increase in width of confidence interval (%)	
	One cost driver	Two cost drivers
50	1.1	1.1
30	1.8	1.9
25	2.2	2.4
22	2.6	2.7
21	2.7	2.9
20	2.9	3.1
19	3.1	3.3
15	4.1	4.4
10	6.9	8.0

Source: CC.

- 5.52 We recognize that this calculation from statistical theory singles out the loss in precision in moving from 22 to 21 comparators and sets aside other factors. The other factors either definitely increase the confidence interval⁵⁷ due to the loss of a comparator or have an uncertain effect that is not directly the result of the number of comparators but is the result of having a different sample of observations. Our calculation implicitly assumes that the characteristics of the industry are not materially changed by the merger, consistent with Ofwat's assumption that the deviations from the frontier are randomly drawn from a hypothetical population, which we have assumed is the same after the merger. Hastings put it to us that this was not the case in the merger, where two data points were lost (MKW and SEW) and one data point was gained (the merged company), so that the population would be different after the merger. Since the merger is not creating a major reorganization of the industry, we think it more reasonable to assume that the merger would not materially alter the hypothetical population from which the sample is drawn.⁵⁸

⁵⁶If there were n observations and one cost driver, the estimate of the confidence interval around the slope of the OLS regression would be $\pm t \{SSR/SSX/(n-2)\}^{1/2}$. Here, there would be $(n-2)$ degrees of freedom, SSR is the residual sum of squares and SSX is the cost driver sum of squares. The value of t is obtained from statistical tables and depends on $(n-2)$. The dependence of t on $(n-2)$ assumes that the true residual error is estimated from the sample of observations, but if the error were estimated from previous years the value of t would be that corresponding to large n and would not change if n changed. We have suppressed the increase in the interval due to changes in t .

⁵⁷The value of t from statistical tables would definitely increase.

⁵⁸Hastings said that SSR and SSX (see second footnote to paragraph 5.44) could only be known empirically and thus the effect of the loss of a comparator on the width of the confidence interval could not be identified for future years. The ratio of SSR to SSX could increase, decrease or leave the confidence interval unchanged. However, since our objective is to single out the effect of moving from n comparators to $n-1$, in the table we assume that the ratio of SSR/SSX is unchanged.

- 5.53 We therefore thought that, having regard to statistical theory, the loss of a comparator from Ofwat's econometric models will, by removing information from the data sets, make the models less reliable and less accurate for the purposes of making comparisons between water companies. As a result, water companies may expect future price caps to be based to a greater extent on their own costs and have less incentive to achieve cost savings. This loss of precision can be expected to result in less effective comparative competition and higher customers' bills.
- 5.54 We supplemented this theoretical approach by attempting to value the impact of removing a data point in two different ways. First, we used the historical data for 2005/06 to model the impact of removing a data point on the total estimated inefficiency in the industry (see paragraph 5.48(b) and paragraphs 5.55 to 5.58). This modelled the impact of removing a comparator in general, rather than removing SEW or MKW in particular. Second, we used the historical data for 2005/06 to model the impact of removing SEW and MKW and replacing both of them by a single, merged company (see paragraph 5.48(c) and paragraphs 5.59 to 5.61).

General approach

- 5.55 To look at the impact of removing a comparator from the 2005/06 data in general, we measured: (a) with the current number of comparators, the sensitivity of efficiency to values of the slope within an approximate 70 per cent confidence interval; and (b) the sensitivity with one fewer comparator. To do so, we proceeded in four steps. First, we found the total cost difference of all companies from the efficiency frontier benchmark.⁵⁹ Second, we found the total cost difference of all companies corresponding to a line whose slope was made shallower (as illustrated in the right panel of Figure 3). Third, we found the total cost difference of all companies corresponding to a line whose slope was made steeper (also as illustrated in the right panel of Figure 3).⁶⁰ Fourth, we compared the total cost from the second and third steps with the total cost from the first step and computed the average difference in cost in absolute terms.
- 5.56 Next we computed how much steeper or shallower the slope would be expected to be if there was one less comparator and repeated the four steps to arrive at a new average difference in cost in absolute terms. To find the incremental increase in imprecision due to the loss of a comparator, we compared the average differences in absolute terms obtained from steps one to four with 22 and with 21 comparators.
- 5.57 The results of this analysis are set out in Table 6 and described in more detail in Section 3 of Appendix G.⁶¹ We found that, using this methodology, the loss of a comparator increases the imprecision by up to 2.7 per cent for the individual operating expenditure models and by 2.7 to 3.6 per cent for the individual capital maintenance expenditure models. These figures broadly support the theoretical finding set out in paragraph 5.51.
- 5.58 We also looked at the impact of the loss of a comparator on the combined models. The increase in imprecision for the combined operating expenditure model was somewhat larger, 5.6 per cent, than for the individual operating expenditure models.

⁵⁹This was the COLS line passing through the benchmark company defined by Ofwat.

⁶⁰In steps two and three, we believed that a reasonable estimate of the existing uncertainty was obtained by tilting the regression line by changing its slope around a fulcrum that ensured it predicted the same average expenditure for an average company within an approximate 70 per cent confidence interval. This led to a change of benchmark in two of the models. Greater tilting (for example, by two standard errors) could have led to more changes in benchmark.

⁶¹In the light of comments received from Hastings and Ofwat, the results in Table 6 and Appendix G are different from those reported in our provisional findings.

The increase in imprecision for the combined capital maintenance model was comparable, at 3 per cent, to those from the individual models. These percentages were derived from the change in the total cost differences of all companies from the benchmark following the loss of a comparator, which amounted to £0.5 million in one price review period for operating expenditure and £0.1 million in one price review period for capital maintenance expenditure.

Specific approach

- 5.59 Finally, we looked at the historical data over the past five years to model empirically the impact of removing MKW and SEW and replacing them with a merged company with costs totalling the sum of the costs of both companies. As set out in paragraph 5.14, we recognized the limitations of using historical data as a predictor of the future, but nevertheless considered this approach to be worthwhile.
- 5.60 Using a comparable methodology to that described in paragraph 5.55,⁶² we found that the increase in imprecision using the historical simulation of this merger was less than the theoretical impact associated with the loss of a data point in general (particularly for operating expenditure). This was because the two companies concerned were in the middle of the pack, and so removing them from the statistical analysis made less difference to the overall distribution of results than would have been the case had they represented more extreme positions. The results are shown in Table 6 and described in more detail in Appendix G. The imprecision increased by up to 2 per cent on the individual operating expenditure models and by up to 2.1 per cent on the individual capital maintenance models.
- 5.61 The increase in imprecision for the combined operating expenditure model was somewhat smaller, 0.2 per cent, than for the individual operating expenditure models. The increase in imprecision for the combined capital maintenance model was comparable, at 2 per cent, to those from the individual models. These percentages were derived from the change in the total cost differences of all companies from that of the benchmark when MKW and SEW are replaced with the merged company, which amounted to £0.4 million in one price review period for operating expenditure and £1.1 million in one price review period for capital maintenance expenditure.

⁶²We estimated Ofwat's models with 22 comparators and calculated the total cost difference of all 22 companies from the benchmark. We re-estimated Ofwat's models replacing the two comparators of MKW and SEW with a new comparator (MKW+SEW) simulating the effect of the merger on costs and cost drivers. We then calculated the total cost difference of these 21 companies from the re-estimated benchmark. We compared the total cost difference from the models with 22 and 21 comparators to arrive at the figures in Table 6.

TABLE 6 Results of two methods of calculating impact on precision of loss of a comparator

Value of loss of precision in model from ...

	<i>General loss of comparator</i>		<i>Loss of MKW and SEW; replace with merged company</i>	
	<i>%*</i>	<i>£m†</i>	<i>%*</i>	<i>£m†</i>
<i>Operating expenditure model</i>				
2005/06 Power	2.7	0.1	2.0	0.7
2005/06 Resources and Treatment	-0.8‡	-0.2	-0.4	-0.4
2005/06 Distribution	2.6	0.5	0.5	0.7
2005/06 Business Activities	2.7	0.0	0.3	0.3
2005/06 Combined	5.6	0.5	0.2	0.4
<i>Capital maintenance expenditure model</i>				
2005/06 Distribution Infrastructure	2.7	0.1	0.6	0.4
2005/06 Distribution Non-Infrastructure	3.6	0.2	2.1	1.4
2005/06 Management and General	2.7	0.3	-0.6	-0.3
2005/06 Combined	3.0	0.1	2.2	1.1

Source: Ofwat, CC calculations.

*Increase in imprecision of the model.

†Monetary equivalent of increase in imprecision of the model measured as aggregate value of all companies' residuals (ie difference between actual expenditure and predicted efficient expenditure), cumulated over a five-year price review period in 2005/06 prices.

‡The resources and treatment model has two cost drivers, whereas the other models have just one. The impact given is the net effect on the imprecision of the model for both cost drivers moving as one but individually they have effects comparable to the other models (ie around 2.7 per cent).

Discussion of results

5.62 We considered how to interpret the apparent improvement in precision of two of the individual models—the operating expenditure resources and treatment and the capital maintenance expenditure management and general models—as a result of the loss of a data point under the specific approach.⁶³ We recognized that, in a particular case, it may appear that the combination of two data points results in an improvement in the model if the new data point is a better ‘fit’ than the two original data points. However, given that statistical estimates with fewer data points are inherently less precise, there is less chance of any improvement in fit being real. The precision of the model may be estimated to be better, but the estimate of the precision itself is subject to greater statistical uncertainty. There is a greater chance that the estimated ‘better’ precision is just a poorer estimate and that the precision has not actually improved. We do not believe that any apparent improvement in the estimates would represent a real reduction in the uncertainty of the model.

5.63 Hastings told us that it was more appropriate to consider the impact of the merger by reference to the combined model rather than the individual econometric models. We considered that the measures at the individual model level also provide a useful indication of the impact of the merger on the precision of Ofwat’s econometric models, given that the combined model uses the results of the individual econometric models (see paragraph 4.19).

5.64 In our deliberations about how to interpret the results set out in Table 6, we recognized that there are limits on the ability of any single measure, or quantitative measures generally, to provide a complete description of the impact of the loss of a comparator from an econometric model. We used two possible quantitative

⁶³The apparent improvement in the resources and treatment model under the general loss of a comparator approach is because the model has two cost drivers. See notes to Table 6 for details.

approaches: the general approach on the one hand and the specific approach on the other, both of which have strengths and weaknesses. The general method looks at the impact of the loss of a comparator, assuming that the model is otherwise unchanged. Assuming that the population from which the comparator has been removed is essentially unchanged, it finds that more data gives a better result. It is independent of the current performance of the two merging companies relative to the industry as a whole, and hence produces a more general estimate of the impact. The specific approach looks at this merger in particular, but cannot take account of how the companies, and the industry, might change going forward. Hastings disagreed with our use of the general approach and argued that we should base our conclusions only on the specific approach. Our view was that, whilst neither approach could be expected to provide the 'correct' answer, both approaches resulted in valid estimates of the impact of the merger on precision.

- 5.65 Hastings submitted that the impacts set out in Table 6 were not statistically significantly different from zero.⁶⁴ In our view, as the loss of information will have an adverse impact on the precision of the models (see paragraph 5.53), we thought that the correct distribution of the impacts will only take on positive numbers (not zero or negative numbers). Hence, notwithstanding Hastings' analysis, we concluded that the hypothesis that the impacts are less than or equal to zero cannot be correct. Therefore we thought that, whilst Hastings' analysis indicated that the impacts are likely to be small in magnitude, it did not indicate that the impacts were unlikely to be adverse.
- 5.66 Hastings told us that any estimate of the impact of the merger on Ofwat's ability to make comparisons should be considered in the context of the degree of judgement that Ofwat applied to its econometric models in the form of adjustments to the data. For 2005/06, these adjustments amounted to £[redacted] million for operating expenditure (4.5 per cent of industry expenditure) and £[redacted] million for capital maintenance expenditure (4.1 per cent of industry expenditure).
- 5.67 The impact of these adjustments on the results of Ofwat's econometric models was considerable. We found that—using Ofwat's methodology to rank and band companies' relative efficiency without the adjustments—companies' operating expenditure ranks could change by as much as seven places as a result of the adjustments (and by two bands),⁶⁵ and by as much as ten places (and one band) for capital maintenance expenditure.
- 5.68 We recognized that Ofwat exercises its judgement in making adjustments to the data and felt that greater transparency in relation to these adjustments would improve the transparency of the price determinations. However, these adjustments are made with a view to improving the accuracy of Ofwat's estimates. We found nothing to suggest that the adjustments made by Ofwat were not appropriate. We were not therefore persuaded that any adverse impact on the precision of Ofwat's models should be quantified or evaluated by reference to the value of the adjustments made by Ofwat.
- 5.69 We conclude that the quantitative measures set out in Table 6, whilst not definitive, nonetheless supported our view that the loss of information from Ofwat's econometric models as a result of this merger is likely to have an adverse impact on the precision

⁶⁴In support, Hastings relied on statistical tests which assessed the null hypothesis that the impacts are equal to zero against the alternative hypothesis that the impacts are positive. In our view, the relevant null hypothesis would in fact be that the impacts are greater than zero, rather than that the impacts are equal to zero.

⁶⁵Ofwat told us that if the pensions special adjustment was excluded, the change in operating expenditure efficiency rank was as much as nine places.

of those models. The results indicated that the degree of adverse impact on precision is likely to be small, but we thought that the impact was likely to be appreciable.

Estimates of customer detriment

- 5.70 We further considered the customer detriment which might arise as a result of the adverse impact on precision. The monetary impacts set out in Table 6 are not an appropriate measure of the customer detriment.⁶⁶ As set out in paragraph 5.53, we recognized that the loss of a comparator would make the econometric models less reliable for Ofwat's purposes and so less likely to result in effective comparative competition. It was difficult to quantify this effect, in part because the adverse impact will depend on the way in which water companies react to different incentive regimes.
- 5.71 Ofwat estimated the financial impact of a decrease in the precision of its econometric models through the loss of a comparator. Ofwat's analysis started from its assumption that, with 22 comparators, the error in the residuals of its econometric models is 10 per cent. On the sewerage side, with ten comparators (albeit with the use of some sub-company data), Ofwat assumes that the error in the residuals is 20 per cent. Ofwat considered that the loss of a comparator could, at least in theory, increase the error on the water side from 10 per cent towards 20 per cent.
- 5.72 Ofwat was unable to estimate the magnitude of any such increase associated with the loss of a single comparator, but chose to model the effects of increasing the residual adjustment to 12.5 per cent and 15 per cent as illustrations. Ofwat then calculated the efficiency savings that would have been included in its price limits at PR04 from its catch-up efficiency targets if the residual adjustment was 12.5 per cent or 15 per cent instead of 10 per cent.
- 5.73 Ofwat considered that the loss in efficiency savings to customers was permanent, since customers would never be repaid the extra amount, so calculated the NPV of the loss that would be incurred in one price review period over 30 years at a discount rate of 5.1 per cent.⁶⁷ Using a residual adjustment of 12.5 per cent, Ofwat estimated the NPV over 30 years to be £33 million for operating expenditure and £9 million for capital maintenance expenditure. Ofwat suggested that this methodology would be an appropriate way to estimate the customer detriment associated with this merger.⁶⁸
- 5.74 In our view, although it is not possible accurately to calculate the customer detriment expected as a result of the loss of precision in Ofwat's models, such a methodology provides a useful means of estimating the order of magnitude of that detriment. We increased the residual adjustment in Ofwat's combined operating expenditure and combined capital maintenance expenditure models by the percentage increases in imprecision for these models given in Table 6.^{69,70}

⁶⁶In our provisional findings we had taken these estimates, adjusted by reducing the residuals by 10 per cent and applying the appropriate catch-up factor, to measure customer detriment.

⁶⁷The weighted average cost of capital of the water sector used in PR04.

⁶⁸Ofwat said that we could calculate the measured inefficiency in the industry with 22 companies and a 10 per cent adjustment and compare this with the measured inefficiency in the industry with 21 companies and a larger adjustment to the residuals.

⁶⁹Hastings said that, because Ofwat adjusts the COLS residuals, any percentage increase in imprecision must only be expressed relative to those residuals. We thought that this took our valuation methodology too literally. We noted that Ofwat adjusts its residuals to take account of measurement error in costs and the omission of relevant cost drivers from its models. We noted that Ofwat told us that we could value the customer detriment arising from the increase in imprecision by increasing this adjustment, notwithstanding that (a) Ofwat would not necessarily do this in practice and (b) the loss of a comparator need not affect either measurement error or omitted cost drivers. We saw no reason to force our approaches to be comparable with each other (given neither considered measurement error or omitted cost drivers), still less so to force them to be comparable in terms of Ofwat's COLS residuals (given that Ofwat said it would not necessarily adjust its COLS residuals in practice).

- 5.75 Our general loss of a comparator approach found the increase in imprecision to be 5.6 per cent for the combined operating expenditure model, and 3 per cent for the combined capital maintenance expenditure model. We applied these percentage increases in imprecision to the residual adjustment to enable us to estimate the customer detriment. We increased the 10 per cent residual adjustment to 10.56 per cent (ie 0.1×1.056) for operating expenditure. The combined capital maintenance expenditure model contributed only half of the efficiency catch-up target in PR04, with the remainder being set by the cost-base analysis. Therefore the adjustment to the residuals effectively is 5 per cent, not 10 per cent (as the cost-base analysis has no residuals), and the catch-up is 45 per cent and not the 40 per cent from only the econometric model (as the catch-up from the cost-base analysis is 50 per cent). Our general loss of a comparator approach found the increase in the imprecision of the combined capital maintenance expenditure model to be 3 per cent, which therefore increased the residual adjustment to 5.15 per cent (ie 0.05×1.03).⁷¹
- 5.76 Our specific approach found the increase in the imprecision of the combined operating expenditure model to be 0.2 per cent: this increased the residual adjustment to 10.02 per cent (ie 0.1×1.002). This approach found the increase in the imprecision of the combined capital maintenance expenditure model to be 2.2 per cent and we therefore increased the residual adjustment to 5.11 per cent (ie 0.05×1.022).⁷²
- 5.77 The impact of increasing the residual adjustments in this way is given in Table 7 and described in detail in Section 4 of Appendix G. This valuation method results in an estimate of cumulative customer detriment from the impact on precision in one price review period of £0.3 million (from the specific approach) or £2 million (from the general approach).

⁷⁰Ofwat told us that it did not think our general and specific approaches appropriately measured the increase in imprecision, and that it would not use such marginal changes as our approaches found to guide its judgement about the appropriate size of the adjustment to its residuals to reflect the loss in precision of its models (see paragraph 5.80).

⁷¹Alternatively, we could increase the residual adjustment for the combined capital maintenance model from 10 to 10.3 per cent and then halve the resulting loss. This would result in consumer detriment that was £0.31 million instead of £0.29 million over one price review period; or £1.35 million instead of £1.28 million in NPV terms.

⁷²Alternatively, we could increase the residual adjustment for the combined capital maintenance model from 10 per cent to 10.22 per cent and then halve the resulting loss. This would result in consumer detriment that was £0.23 million instead of £0.21 million over one price review period; or £0.99 million instead of £0.94 million in NPV terms.

TABLE 7 Results of valuing customer detriment from two methods of calculating impact on precision of loss of a comparator

	Customer detriment from value of loss of precision in model from ...					
	General loss of comparator			Loss of MKW and SEW; replace with merged company		
	%*	£m†	NPV £m‡	%*	£m†	NPV £m‡
2005/06 Combined Operating Expenditure Model With 60% catch-up and 10% residual adjustment	10.56	1.7	9.0	10.02	0.1	0.3
2005/06 Combined Capital Maintenance Expenditure Model With 45% catch-up and 5% residual adjustment§	5.15	0.3	1.3	5.11	0.2	0.9
Total customer detriment		2.0	10.3		0.3	1.2

Source: Ofwat and CC calculations.

*Residual adjustment allowing for effect of loss of precision in model.

†Cumulative difference in total expenditure allowed in one review period in 2005/06 prices from using higher residual adjustment.

‡Net present value over 30 years of difference in total expenditure allowed from using higher residual adjustment, discounted by Treasury's social rate of time preference (3.5 per cent).

§Catch-up factors in PR04 were based equally on the econometric model and cost-base analysis. Catch-up for the econometric model was 40 per cent and catch-up for the cost-base analysis was 50 per cent, so the average catch-up was 45 per cent. Further, the 10 per cent residual adjustment applied only to the econometric model, so the average adjustment was 5 per cent.

Note: Figures include all post-model adjustments made by Ofwat.

5.78 We calculated the NPV of the estimated cumulative customer detriment that would be incurred in one price review period over 30 years at a discount rate of 3.5 per cent.⁷³ Using this method, we found that the NPV of the estimated cumulative customer detriment from the increase in the imprecision of Ofwat's combined operating and capital maintenance expenditure models was £1.2 million (from the specific approach) or £10.3 million (from the general approach).

5.79 We recognized that these calculations, though generating apparently precise numbers, were in reality only indicative of the level of customer detriment which we might expect to occur as a result of the loss of precision arising from the merger. Nevertheless, in our view, a change of around 5 per cent (or half a percentage point) on the 10 per cent residual adjustment, which is the upper end of the percentage increases that we have identified, was reasonable having regard to Ofwat's current residual adjustments. We note that, as set out in paragraph 5.71, Ofwat adjusts the residuals on the water side by 10 per cent (with 22 comparators) and the residuals on the sewerage side by 20 per cent (with ten comparators, and the use of some sub-company data).

5.80 We considered whether Ofwat would, in practice, adjust its estimate of the error in the residual as a result of the merger. Hastings told us that Ofwat used the same assumption at all price reviews for the proportion of the gap to be closed for both water and sewerage. We did not think it necessary to expect that Ofwat would, in practice, make this adjustment to expect there to be an adverse impact resulting from the loss of a comparator. This is because, regardless of the adjustment factor, there would be a real decrease in the precision of the predicted costs which would result in Ofwat having to set less challenging catch-up factors.

⁷³This is the Treasury's social rate of time preference—given that the loss is to customers and not companies—as opposed to the 5.1 per cent WACC used by Ofwat. For comparison, discounting Ofwat's increase in the residual adjustment from 10 to 12.5 per cent over 30 years with this 3.5 per cent social rate of return instead of the 5.1 per cent WACC gives a customer detriment of £40 million on operating expenditure and £11 million on capital maintenance expenditure.

Conclusions on adverse impact on precision and estimates of customer detriment

- 5.81 Overall, given the evidence set out in paragraphs 5.47 to 5.68, we conclude that the merger is likely to have an adverse impact on the precision of Ofwat's econometric models. We found that the adverse impact was likely to be small and would be likely to lead to higher price caps being set for companies in England and Wales than would otherwise be the case.
- 5.82 Based on the evidence set out in paragraphs 5.70 to 5.80, we estimated that the NPV of the cumulative customer detriment from the increase in the imprecision of Ofwat's combined operating and capital maintenance expenditure models in one price review period was £1.2 million (from the specific approach) or £10.3 million (from the general approach). We recognized that these figures were only indicative.

Adverse impact on the cost base

- 5.83 The third possible adverse impact that we consider is whether the merger might be expected adversely to affect Ofwat's ability to make cost-base comparisons and challenge cost-base estimates. We considered whether:
- (a) the merger may be expected to result in the loss of a company which is expected to form a benchmark for standard cost comparisons; or
 - (b) the merger may reduce the dispersion of companies' cost-base estimates.

Possible impact on the benchmark

- 5.84 We first considered whether the merger may be expected to remove a benchmark. As discussed in paragraph 5.7, this might arise in one of two ways:
- (a) both MKW and SEW may individually be expected to form a benchmark so that the merger would result in the loss of an expected benchmark; or
 - (b) only one of MKW or SEW may be expected to form a benchmark, and the merged company would be less likely than the individual company to form a benchmark.
- 5.85 In order to assess whether either of the scenarios in paragraph 5.84 was likely to arise, we considered MKW's and SEW's recent contributions to cost-base benchmarks, and the likelihood of them forming a benchmark in the foreseeable future (see paragraph 5.5).
- 5.86 In the last price review, MKW submitted 55 costs out of 70 and SEW submitted 59 but neither MKW nor SEW provided any cost-base benchmarks.⁷⁴ MKW was below the size threshold for forming a benchmark on a stand-alone basis and was not chosen in conjunction with any other small water companies to provide a benchmark; SEW had thought that it was also excluded due to its size, but Ofwat told us that it was primarily related to issues around EJJ.
- 5.87 Ofwat told us, however, that SEW might form a benchmark in the future for a number of reasons:

⁷⁴We note that Ofwat analysed 70 standard costs rather than 71 because it had too few estimates for the remaining standard cost.

- at PR04, SEW was ranked in the top 5 for 25 standard costs in the cost-base analysis;
 - Ofwat expected SEW's EJGs to improve in the future; and
 - in 2005/06, SEW had stable serviceability for water infrastructure and improving serviceability for water non-infrastructure.
- 5.88 Hastings told us that any issues that applied to SEW's data in PR04 were likely to continue to apply in future years and, hence, SEW was no more likely to submit benchmark standard cost estimates in the future than in the past. Hastings also said that, since all companies were funded in PR04 to achieve stable serviceability by 2008/09 or earlier, it was inappropriate to treat this as a distinguishing factor for SEW.
- 5.89 Table 8 summarizes SEW's 59 EJGs and those for Ofwat's 70 selected benchmark standard cost estimates for PR04, and the difference in grades between them.⁷⁵ We found that SEW's engineering judgement grades were, on average, two levels below those which formed a benchmark at the last price review (one accuracy grade and one reliability grade), although there are 36 standard costs, in particular infrastructure standard costs, where SEW's EJM would need to improve by only one grade (mostly one accuracy grade) to have the same EJM as the benchmark.⁷⁶

⁷⁵Ofwat excluded one standard cost for mains rehabilitation by pipe insertion from the 70 standard costs in its cost-base analysis at PR04.

⁷⁶In our provisional findings, we reported that SEW's EJGs were on average three grades below the benchmark but Ofwat pointed out that this was because we did not separate out the accuracy and reliability components of the overall EJM.

TABLE 8 EJGs for benchmark standard cost estimates and SEW's standard cost estimates from PR04

Cost-base category	EJG		Difference (grades)		
	Benchmark	SEW	Reliability	Accuracy	Total
<i>Infrastructure (number of standard costs in parentheses)</i>					
Mains laying—grassland (6)	A2	B2	1	0	1
Mains laying—rural/suburban highway (6)	A2	B2	1	0	1
Mains laying—urban highway (6)	A2	B2	1	0	1
Mains laying by directional drilling—grassland (3)	A2	B3*	1	1	2
Mains laying by directional drilling—rural/suburban highway (3)‡	A2	B3*	1	1	2
Mains rehabilitation—surface applied internal coating (4)	3xA1, A2	B3	1	1–2	2–3
Mains rehabilitation—slip-lining (3)	A1	B3	1	2	3
Mains rehabilitation—pipe insertion (5)†	A2	C3	2	1	3
Mains rehabilitation—pipe bursting (3)	B2	B3	0	1	1
Communication pipes—long side (2)	A1	A2	0	1	1
Communication pipes—short side (2)	A1	A2	0	1	1
Household meters—internal (2)	A1	A2	0	1	1
Household meters—external excluding boundary box (2)	A1	A2	0	1	1
Household meters—external including boundary box (2)	A1	A2, B2	1–2	0–1	1–2
Average			1	1	2
<i>Non-infrastructure§</i>					
New treatment works type SW2, output 30MI/d	A2	C3	2	1	3
Replacement filtration system, output 30MI/d	B3	C3	1	0	1
New abstraction borehole treatment works, output 8MI/d	A2	C3	2	1	3
Fitting new plumbosolvency control, output 8MI/d	B3	A2	–1	–1	–2
Alterations to water treatment works, output 30MI/d	B2	B3	0	1	1
New service reservoir, capacity 4MI	B2	C3	1	1	2
New service reservoir, capacity 15MI	B2	C3	1	1	2
Refurbishment of service reservoir, capacity 6MI	A2	C3	2	1	3
Replacement of variable speed pump motors, rated 110kW	B2	B3	0	1	1
Replacement of borehole pump-sets, output 4MI/d	B2	B3	0	1	1
Replacement of borehole pump-sets, output 10MI/d	B2	B3	0	1	1
New fixed-speed pump-set, output 10MI/d	B2	C3	1	1	2
New fixed-speed pump-set, output 30MI/d	B2	C3	1	1	2
Replacement MCC, 15kW total installed capacity	B2	C3	1	1	2
Replacement MCC, 90kW total installed capacity	B2	C3	1	1	2
Average			1	1	2

Source: Ofwat and CC calculations.

*SEW submitted one standard cost estimate out of three.

†Ofwat excluded one standard cost for mains rehabilitation by pipe insertion.

‡SEW did not submit standard cost estimates for three standard costs for mains laying by directional drilling in urban highways.

§SEW did not submit standard costs for three non-infrastructure standard costs.

5.90 Paragraphs 4.26 to 4.27 set out the criteria used by Ofwat to select standard cost benchmark companies. For reasons similar to those set out in paragraphs 5.26 to 5.29, we considered it unlikely that MKW would form a benchmark due to its size.⁷⁷ Hastings told us that a group of smaller companies had never been used to set the benchmark on standard costs.⁷⁸ We also note that, where possible, as set out in paragraph 4.28, Ofwat chooses a single benchmark company for a single sub-category of standard costs which might include several individual standard costs. This seemed to us to make it less likely that a group of small companies would reach the benchmark at the same time across a sub-category of standard costs. In addition, Hastings told us that small companies had often undertaken an insufficient number of schemes to produce the data to support EJGs acceptable to Ofwat.

5.91 We considered the likelihood of the merged company having improved EJGs in the future. Hastings told us that a larger company would be better able to submit standard cost estimates with good EJGs because of the greater amount of work that

⁷⁷We note that in order to satisfy the 3 per cent of industry turnover threshold, MKW would need to be combined with between one (Bristol Water or South Staffordshire Water) and three other WoCs.

⁷⁸It also told us that, for plumbosolvency in PR04, SEW had the lowest cost and MKW the second lowest, but Ofwat did not choose to identify the two companies as the benchmark but instead went down the rankings to Severn Trent Water.

it would be undertaking in relation to particular activities (EJGs being to some extent dependent on experience).

- 5.92 We examined the correlation between the water service turnover in 2005/06 of each WaSC and WoC and its EJC in the cost-base analysis in PR04.⁷⁹ Our results are summarized in Figure 4.⁸⁰ We considered (a) the proportion of standard costs for which the correlation coefficient⁸¹ between water service turnover and EJC accuracy and reliability grades is negative, as this may give an indication of the likelihood of a larger company having better EJGs than a smaller company, and (b) the average value of the correlation coefficients between water service turnover and EJC accuracy and reliability grades over all 70 standard costs, which may give an indication of how much better a large company's EJGs are than a smaller company's.
- 5.93 We found that 61 per cent of costs showed a negative correlation between companies' engineering judgement accuracy grade and their water service turnover; that 81 per cent of costs showed a negative correlation between companies' engineering judgement reliability grade and their water service turnover; and that—although there was variation from one standard cost to another—the average correlations over all 70 standard costs were negative, albeit small.⁸² We took the view that this suggested that larger companies had EJGs that were at least as good, if not better, than those of smaller companies.

⁷⁹Our analysis assigned engineering judgement accuracy grade A (the best) a value of 1 and C (the worst, in practice) a value of 3. Engineering judgement reliability grades are numeric, with 1 being the best. A negative correlation over companies between water service turnover and EJC accuracy and reliability grades would therefore indicate that larger companies get better grades. Not all 70 standard costs had 22 estimates submitted, so the correlations reported are not over the same number of observations. The median number of estimates was 17, ranging from 5 (for 3 standard costs) to 22 (for 13 standard costs).

⁸⁰Ofwat told us that our analysis assumed that the process of defining the EJC is an exact science. Ofwat said that companies and reporters make judgements about the reliability of the source data and the accuracy of any adjustments being made. Ofwat told us that these judgements are not suitable for explanatory analysis of this nature.

⁸¹A correlation coefficient measures the extent to which two series of data move together. It may take any value between -1 and 1. A correlation coefficient of 1 (-1) indicates a perfectly positive (negative) correlation between the series considered; a coefficient of 0 indicates that there is no relationship in the movements of the two series.

⁸²Over all 70 standard costs, the average correlation for EJC accuracy was -0.1 (-0.1 for water infrastructure and -0.2 for water non-infrastructure). The average correlation for EJC reliability was -0.2 (-0.2 for water infrastructure and -0.3 for water non-infrastructure). The average correlation weighted by the number of estimates submitted for each standard cost was -0.1 (0.0 for water infrastructure and -0.3 for water non-infrastructure) for EJC accuracy and -0.1 (-0.1 for water infrastructure and -0.3 for water non-infrastructure) for EJC reliability.

FIGURE 4(a)

Correlations between companies' EJG accuracy and reliability grades and water service turnover for 70 water service standard costs

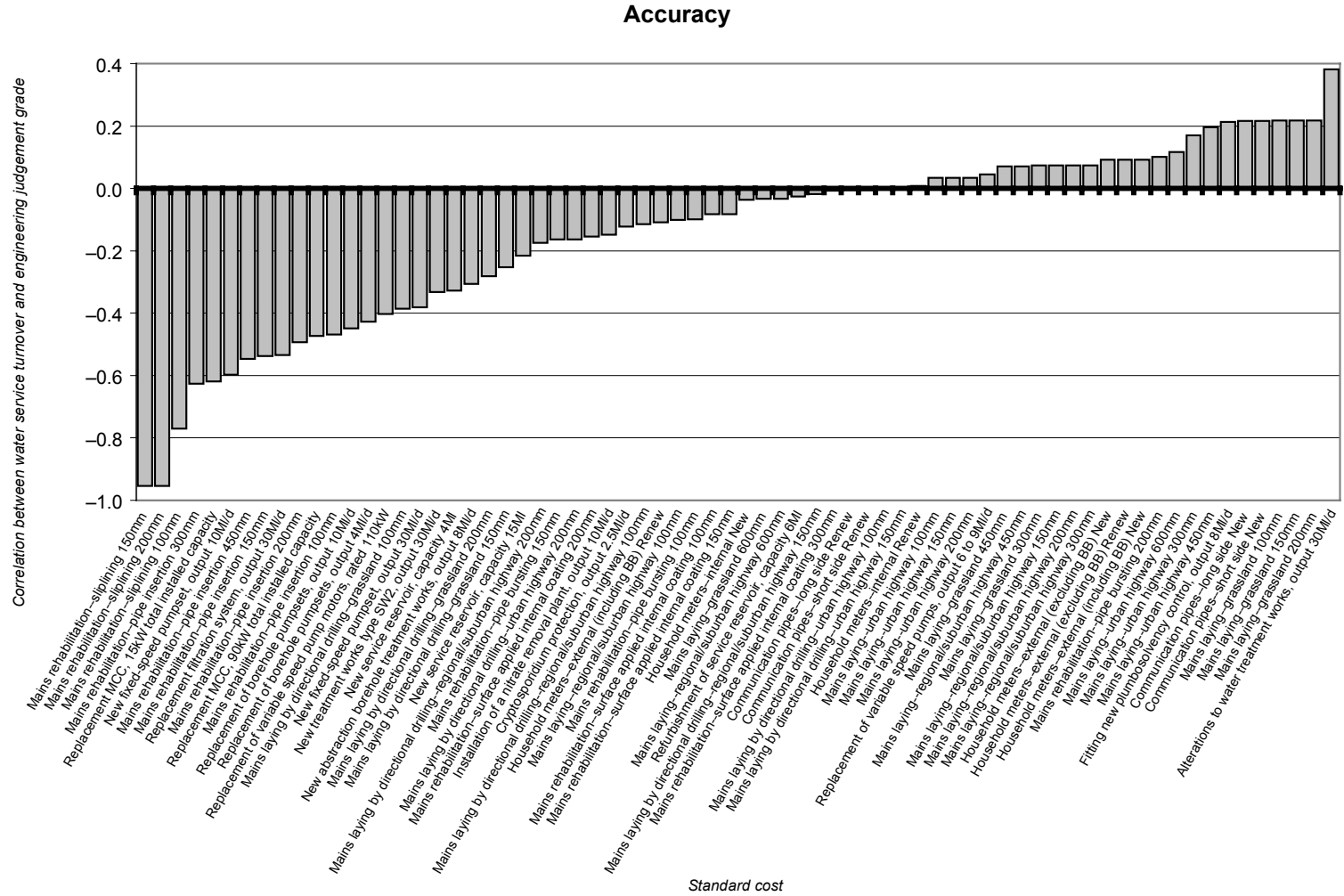
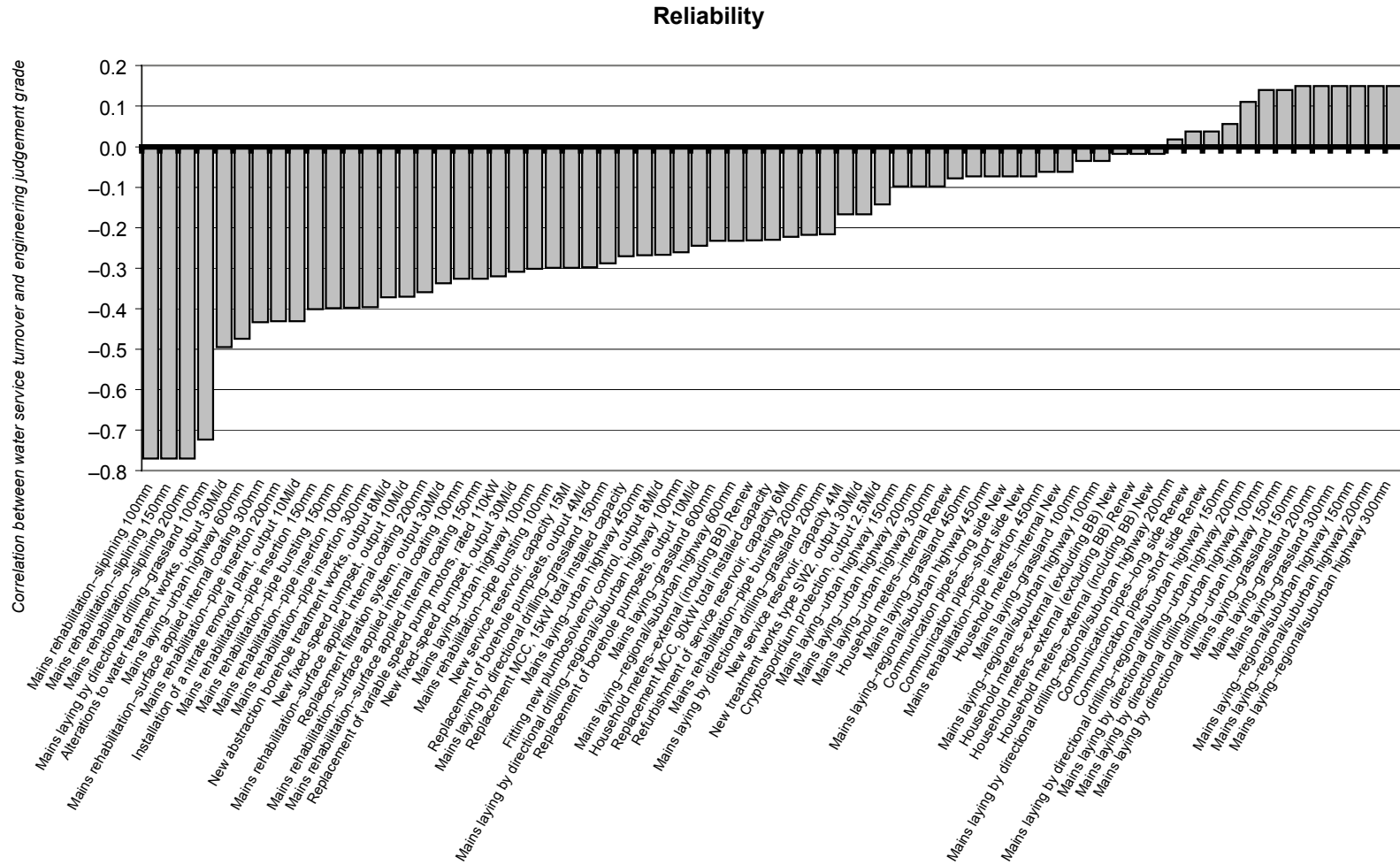


FIGURE 4(b)

Correlations between companies' EJC accuracy and reliability grades and water service turnover for 70 water service standard costs



Source: Ofwat and CC calculations.

5.94 In addition, Hastings submitted an analysis of Ofwat’s 2003/04 catch-up efficiency factors based on its cost-base analysis (see Table 9), which showed that the average catch-up in water services for WoCs was greater for all four cost-base asset classes than the average catch up for WaSCs, suggesting that procurement efficiency was related to size of company.

TABLE 9 Hastings’ analysis of Ofwat’s 2003/04 catch-up efficiency factors for water service

	<i>per cent</i>			
	<i>Infrastructure</i>		<i>Non-infrastructure</i>	
	<i>Capital maintenance</i>	<i>Capital enhancement</i>	<i>Capital maintenance</i>	<i>Capital enhancement</i>
WaSCs	4.58	6.85	5.66	8.49
WoCs	9.69	14.56	7.40	11.10

Source: Hastings, Ofwat.

5.95 We also looked specifically at the standard costs submitted by MKW and SEW. Hastings told us initially that the merged company’s standard cost estimates would be more likely to form a benchmark than SEW’s costs—in particular, for 18 standard costs for which one or other of MKW and SEW had submitted costs that were lower than the chosen benchmark, but had, for whatever reason, been rejected. Ofwat, however, said that, once merged, MKW and SEW would have to submit the average of their standard cost estimates, not the lowest. On this basis, Ofwat submitted that there were only three standard costs—not 18—where the merged company’s estimates could have been benchmarks.

5.96 In response, Hastings said that an averaging of costs after the merger, as suggested by Ofwat, would not be appropriate. In its view, the merged company would be more likely to continue with the lower contract rates for work on infrastructure, and would tend to use the lower-cost solution for non-infrastructure, although Ofwat challenged its ability to achieve this. Hastings suggested that there were 14, rather than 18, costs where the merged company could have been considered as the benchmark, of which five were submitted by MKW only.

5.97 We looked at whether there were certain areas where SEW would be more likely to form a benchmark than others. In order to do this, we looked at the 36 standard costs for which SEW’s EJG would need to improve by only one (accuracy or reliability) grade to be the same as the benchmark in PR04, and at the 25 standard costs for which SEW’s standard cost estimate was in the top 5. Our results are given in Table 2 in Appendix H and show that there are 15 standard costs out of 36 where SEW’s estimate was in the top 5. However, when Ofwat’s preference for selecting a single company as the benchmark for a group of standard costs is taken into account, there are just three such standard costs in one group (mains laying with a nominal bore of 300mm).

5.98 We considered the possible impact of the merger on the basis of these results. If the merged company’s EJG was not lower than SEW’s—and given Ofwat’s preference for selecting benchmarks for a group of standard costs—our results suggested that there are three extra standard costs in one group (mains laying with a nominal bore

of 450mm) where SEW's EJM is one grade away from the benchmark and either MKW or SEW's cost is in the top 5.⁸³

- 5.99 Based on the evidence that we had received, we found it unlikely that MKW's standard costs would be selected as a benchmark. Further, having regard to the evidence set out in paragraph 5.97, it appeared to us that although SEW's standard costs have some potential to be selected as a benchmark, looked at in general, SEW is not a particularly strong performer overall on the cost-base analysis. We also noted that the criteria referred to in paragraph 5.97 were not the only criteria that SEW would need to satisfy for its standard cost estimates to be selected as the benchmark. It was therefore difficult for us to form an expectation that SEW's standard costs would be selected as a benchmark absent the merger.
- 5.100 We also considered the position of the merged company. We found that there was some evidence that it was at least as likely that larger companies, and hence the merged company, would submit benchmark standard cost estimates (see paragraph 5.93). We therefore expected the merged company's EJMs to be no worse than SEW's (assuming that SEW uses all the data available to estimate the standard costs that it submits).
- 5.101 There is inevitably a degree of unpredictability about how the merged company's standard cost estimates would be presented at PR09. We recognized the possibility that in certain instances the appropriate course of action would be to take the average of MKW and SEW's costs. However, in other cases, it might be more appropriate to take the lower of the two. Looking beyond PR09, we were not persuaded that the merged company's costs could be expected to be higher than SEW's.
- 5.102 Having regard to all these factors, and based upon the evidence we received, we conclude that this merger is not likely to result in an adverse impact arising from the loss of a company which is expected to submit standard cost estimates that would be selected as a cost-base benchmark.

Possible impact on dispersion

- 5.103 We also considered whether the merger may be expected to reduce the dispersion of companies' cost-base estimates, removing:
- (a) an innovative or best practice solution that could be shared among other companies;
 - (b) valuable data that might allow Ofwat to challenge costs more successfully overall than it could with the remaining data it had available; or
 - (c) average data that helps Ofwat to identify valuable information, especially in categories of standard costs with few comparators.
- 5.104 Ofwat uses comparisons between different companies' solutions to particular problems to understand best practice and to challenge companies' approaches. Ofwat gave the example of the work that it had carried out with the DWI on meeting requirements for plumbosolvency control. Ofwat worked with the DWI to review each

⁸³These are not the same three standard costs in paragraph 5.95 for which Ofwat said benchmark estimates could have been submitted at PR04 based on an average of the costs submitted by MKW and SEW.

company's approach and to identify the best solutions, thus reducing the potential costs overall.

- 5.105 Hastings submitted an analysis of innovations identified in companies' June returns in the period 2002–06, supporting Hastings' view that the larger the company, the greater the scope to invest in research and development and hence the greater the chance of innovation. Ofwat told us, however, that it considered examples of innovation that went beyond process improvements and covered, for example, innovative tariffs, approaches to handling customer issues, water efficiency measures and so on.
- 5.106 We received no evidence to suggest that MKW or SEW were more likely than other companies to develop innovative solutions, and hence that the loss of one of these two companies in particular would harm Ofwat's ability to make comparisons, particularly given the fact that there were 20 other water companies, many of which were larger and arguably more likely to innovate.
- 5.107 We considered the other ways in which a reduction in the dispersion of cost-base estimates might cause some adverse impact (see paragraph 5.103). Ofwat told us that for some of the 70 standard costs used in PR04, a relatively small number of companies (8 to 12) submitted estimates.⁸⁴ Hastings told us that it was wrong to suggest that fewer than 12 estimates was insufficient, given that Ofwat already used fewer than 12 estimates for 13 standard costs on the water side. In particular, Hastings pointed out that Ofwat had excluded one standard cost for mains rehabilitation by pipe insertion from its cost-base analysis in PR04 because it had only two estimates.
- 5.108 We looked at the number of estimates submitted for each standard cost to see whether the removal of an estimate submitted by SEW or MKW could reduce the number of remaining estimates below 12. Although we recognized that Ofwat uses fewer than 12 estimates in some instances, we thought that the loss of a comparator below 12 could still cause Ofwat to suffer some adverse impact. The results of our analysis are summarized in Table 2 of Appendix H. It shows that there are five standard costs where the removal of estimates submitted by MKW and SEW and their replacement by an estimate submitted by the merged company could reduce the total number of estimates to fewer than a dozen. Of these five, three already had fewer than a dozen estimates including MKW and SEW. We noted that—were Ofwat to exclude all the standard costs in each group of which these five were part—11 standard costs could be affected.
- 5.109 We found it difficult to evaluate how significant this reduction in the total number of estimates might be because companies did not forecast investment for each standard cost but rather for seven categories of assets covering all the standard costs.⁸⁵ We noted that three of the five standard costs where the loss of one estimate might be significant were in the 'potable mains' asset category, one in the 'water treatment works—surface' asset category and one in the 'water treatment works—ground' asset category. The total spend in these three asset categories was

⁸⁴Ofwat added that the three standard costs for mains rehabilitation by slip-lining were poorly represented across the industry. These three standard costs had five estimates submitted each.

⁸⁵Water treatment works—surface (covering 3 standard costs), water treatment works—ground (covering 4 standard costs), storage (covering 3 standard costs), pumping stations (covering 8 standard costs), potable mains (covering 43 standard costs), communication pipes (covering 4 standard costs) and meters (covering 6 standard costs).

£6.6 billion, but it was not clear what proportion of this spend related to the five standard costs that we identified.⁸⁶

5.110 We note that at a very late stage in the inquiry, Hastings told us that Ofwat was proposing to reduce by 20 the number of standard costs to be included in the water service cost-base analysis in PR09.⁸⁷ If it were to proceed with its proposal, Ofwat would remove three of the five standard costs that we had identified as having relatively few comparators and as being affected by the merger. However, we could not form an expectation, based on the evidence available to us, that this would be the case. Ofwat told us that the cost-base development it was undertaking in the lead-up to PR09 involved refinements and improvements to the existing process but that the underlying principles and methodology would remain unchanged. The analysis that we had carried out was based on the standard costs used in PR04, which was the best information that we had available to us. In any case, the identification of specific standard costs which we expected to be affected by the merger was only indicative of the issue that we had identified, namely that the merger is likely to cause Ofwat to lose at least some valuable cost-base estimates. The fact that Ofwat is considering reducing significantly the number of standard costs could be viewed as reinforcing the view that Ofwat is likely to have insufficient data in a number of standard cost areas. In this regard, we noted that the average number of estimates submitted for the 19 infrastructure costs that Ofwat was intending to omit was 12 (varying from 2 to 20), whereas the average number of estimates submitted for the 34 infrastructure costs that Ofwat was intending to keep was 18 (varying from 9 to 22).

5.111 Based on the evidence set out in paragraphs 5.104 to 5.106, we thought it unlikely that the merger would reduce Ofwat's ability to identify innovative or best practice solutions, given the continuing availability of a large number of solutions, including those from larger companies. However we found that there was likely to be some adverse impact arising from the reduction in the dispersion of standard cost estimates, but that the adverse impact arising from this was likely to be small (see paragraphs 5.107 to 5.110).

Conclusions on adverse impact on the cost base

5.112 Therefore, while we conclude that there is not likely to be an adverse impact arising from the loss of a benchmark on the cost-base estimates (see paragraph 5.102), we found that there is likely to be a small adverse impact arising from the reduction in the dispersion of standard cost-base estimates where there are already relatively few comparators.

Adverse impact on qualitative comparisons

5.113 The fourth possible adverse impact that we consider is whether the merger might be expected adversely to affect Ofwat's ability to make qualitative comparisons.

⁸⁶There were 43 standard cost estimates in total in the 'potable mains' asset category and industry forecast investment for 2005–10 for these 43 standard costs was £4.5 billion out of £9.5 billion total forecast investment. There were three standard costs in the 'water treatment works—surface' asset category; and industry forecast investment for 2005–10 for these three standard costs was £1.5 billion. Lastly, we noted that the remaining lost estimate was in the 'water treatment works—ground' asset category; that there were four standard costs in total in this asset category; and that industry forecast investment for 2005–10 for these four standard costs was £0.6 billion.

⁸⁷Hastings told us that Ofwat intended to remove 19 water infrastructure costs and 6 water non-infrastructure costs, and to add 5 new water non-infrastructure costs.

5.114 Paragraphs 4.36 to 4.65 set out Ofwat's qualitative indicators. Although the indicators are qualitative, some of Ofwat's comparisons can be described as quantitative, since they involve ranking the companies on the basis of a score. These include:

- (a) OPA;
- (b) common framework for capital maintenance planning; and
- (c) assessment of security of water supply.

The remainder of the areas set out in paragraph 4.39 do not involve ranking the different companies.

5.115 We looked at three ways in which Ofwat may make comparisons on the basis of qualitative data:

- (a) publishing league tables;
- (b) using information received from one company to challenge other companies' proposed approaches to particular issues; and
- (c) publicizing both good and bad practice.

We consider each of these in turn.

5.116 Ofwat told us that publishing league tables drives improved performance in the industry by highlighting the best and the worst performers and giving companies an incentive to improve. In particular, Ofwat told us that no company wanted to be at the bottom of any of its rankings; companies competed to be at the top of its league tables. Hastings agreed that companies sought to avoid being at the bottom of the table, but did not agree that companies necessarily competed actively to be at the top of the table.

5.117 Ofwat told us that where a company performed particularly poorly, effective pressure could be applied. For example, after Thames Water failed to achieve its leakage target for 2005/06, Ofwat was able to secure a legally binding undertaking from it, resulting in Thames Water agreeing to spend £150 million on replacing additional leaking water mains at the expense of its shareholders. Thames Water also committed to achieving demanding leakage and security of supply targets by March 2010.

5.118 We looked in particular at the OPA, which covers three broad areas: levels of service, customer service and environmental impact. Hastings suggested that as OPA scores had converged, the merger would have a negligible impact on this measure. We note that Ofwat told us that it would review the OPA measures and scores prior to PR09 and may choose either to alter existing measures, or introduce new measures, or both, to reflect changing industry practice or customer expectations. This suggests that an analysis of existing scores may not be relevant in the future. Nevertheless, as a first step, we looked at the movements in average score, and the dispersion of scores around that average, for seven DG indicators from 1992/93 to 2005/06. We found that there was a consistent pattern of improvement in average score, and a decrease in the dispersion of scores unrelated to the change in the number of comparators (see Appendix I).

5.119 We also considered whether MKW or SEW had scores that differed significantly from those of other companies. We found that most companies achieved very similar

scores for each measure, and neither company had scores that differed much from most other companies (see Table 10 and Appendix I). We considered as possible exceptions restrictions to water supply (DG4) and customer contact (DG6–DG9), where MKW and SEW respectively achieved the lowest score but no other companies had the same score.

TABLE 10 Scores for levels of service, customer service and environmental impact comparisons, 2005/06

Levels of service	Range	Actual	MKW		SEW	
			Score	Others*	Score	Others*
DG2 Properties at risk of low pressure	4–38	32–38	33	0	37	5
DG3 Unplanned supply interruptions	4–38	22–38	36	1	38	9
DG4 Restrictions to water supply	2.5–25	21–25	21	0	23	0
Drinking water quality	5–50	45–50	50	4	49	4
<i>Customer service</i>						
DG6–DG9 Customer contact	4–38	33–38	38	11	33	0
Other customer service	4–38	33–38	38	17†	38	17†
<i>Environmental impact</i>						
Category 1 and 2 pollution incidents	2–13	10–13	13	18†	13	18†
Leakage	5–50	40–50	50	16†	50	16†

Source: Ofwat.

*Number of other companies with this score.

†Not including SEW/MKW, given that MKW and SEW have the same score.

- 5.120 Ofwat also told us that it had been able to challenge non-standard practices and identify innovative approaches across a range of issues as a result of its qualitative comparisons. One example of this was the use it had made of ad hoc comparisons related to Condition E of the water companies' licences. This had resulted in the development of policies on innovative tariff structures. A second example was when it had challenged companies' proposed solutions to supply and demand problems, thus affecting the amount allowed for capital enhancement. A third example was where Ofwat encouraged the companies to allow for more selective metering than they had proposed in their business plans, thus resulting in a more cost-effective approach.
- 5.121 In some areas Ofwat told us that it had relatively few useful comparators and so the loss of one comparator might have a particular impact. It told us that SEW was a valuable comparator for the common framework for capital maintenance planning as it was one of only five companies to reach band B or above across its whole business. However, Hastings told us that it was likely that other companies would achieve band B by PR09, and that Ofwat had not taken significant steps to share best practice from its comparisons among the companies.
- 5.122 Finally, Ofwat told us that it publicized information on a range of developments including, for example, leakage. This was used both to identify poor performers and to publicize good performance. Ofwat gave the example of one company's decision to publicise the prioritization of visible leaks during the 2006 drought in the South-East, influencing customers' perceptions that the company was dealing with leaks quickly and hence were more prepared to comply with restrictions on water usage. This practice was then rolled out to other companies.
- 5.123 The management of drought situations might be one area where MKW and/or SEW might provide information for comparative purposes which is provided by a relatively limited number of other water companies. Hastings told us, however, that there were other areas of the country where there had, in the past, been a drought, and where

there had been only a single water company.⁸⁸ In addition, Hastings said that Ofwat could also draw on overseas comparisons from regions such as Australia and the Middle East where drought posed even greater challenges to water supply. Overall, we were not persuaded that this merger would make a significant difference to Ofwat's ability to make comparisons in relation to this particular issue.

- 5.124 We recognized that Ofwat uses a variety of indicators, many of which allow it to gain valuable information and to challenge other companies to improve their efficiency or effectiveness between periodic reviews by comparing their performance with other companies. Some of these exercises are responses to particular problems, such as methods of handling drought or leakage.
- 5.125 In relation to the OPA in particular, the evidence that we received suggested that, under the current measurement system, scores were converging and—in most cases—neither MKW nor SEW provided information that was significantly different to that provided by other companies. We recognize, however, that this does not take account of potential developments in OPA.
- 5.126 Therefore, looking separately at each of the various areas in which Ofwat makes qualitative comparisons, it was not clear to us, given the availability of information on up to 20 other companies, that MKW or SEW would provide information of significant additional value for Ofwat's future qualitative comparisons in any particular area.
- 5.127 However, the number and range of comparisons made suggests that at least some of the data submitted by MKW and SEW is likely to be useful, and that there is likely to be some impact on Ofwat's ability to make qualitative comparisons as a result of the merger. We thought it more likely than not that some of the information which Ofwat would have received in the absence of the merger, and which would be lost following the merger, would have been of value to Ofwat. We were satisfied that this was the case, albeit that we could not foresee the exact area in which the information would have been of value.

Conclusions on adverse impact on qualitative comparisons

- 5.128 We therefore conclude that, given that Ofwat makes qualitative comparisons for various purposes, and in relation to a variety of different areas of industry practice, the loss of information as a result of this merger would, in the foreseeable future, be likely to have some adverse impact on Ofwat's qualitative comparisons. Given that the merger is not expected to result in adverse impact in any particular area of Ofwat's qualitative comparisons, the extent of the adverse impact was small.

Event study

- 5.129 We considered whether the announcement of Hastings' acquisition of SEW had a noticeable effect on the prices of corporate bonds issued by companies active in the water sector. The study compared daily total returns from a portfolio of five water industry bonds to those from a general index of corporate bonds. It found that on the announcement date itself, the portfolio of water industry bonds exhibited a positive abnormal return and that this was statistically significant. Further details of the study are in Appendix E.

⁸⁸Hastings told us that Yorkshire Water had suffered challenges over water supply in 1995–97, and similarly United Utilities (in relation to certain of its supply areas in the Lake District) in 2003.

5.130 We considered possible explanations for this result. One explanation could be that investors believed that the transaction would prejudice Ofwat's ability to make comparisons, thus increasing water companies' revenues at future price controls with a consequential lessening of default risk. We noted that for this hypothesis to hold, investors would also have to believe that there was a chance that such a merger could be allowed by the competition authorities. A second explanation could be that the announcement was seen as signalling the possibility of further consolidation with consequential synergies for companies in the sector. This might also be expected to reduce default risk for bond investors. Hastings suggested that this result might be related to two other transactions: the possibility that Macquarie could now bid for Thames Water as a result of the sale of SEW, and/or the acquisition of AWG⁸⁹ by the Osprey Consortium which was announced on the same day.

5.131 We noted that the results of the study would be consistent with a finding that the merger results in a prejudice to Ofwat's ability to make comparisons. However, we were unable to isolate the effect of any one of the above explanations.

Conclusions on the effect of the merger on Ofwat's ability to make comparisons

5.132 Given the evidence that we set out in Section 5, we conclude that it is likely that the merger would have adverse impacts as follows:

(a) It was likely that the merger would have a small adverse impact on the precision of Ofwat's econometric models.

(b) It was likely that there would be a small adverse impact arising from the reduction in the dispersion of standard cost-base estimates where there are already relatively few comparators.

(c) It was likely that the merger would have a small adverse impact on Ofwat's qualitative comparisons.

5.133 We conclude that, as a result of this merger, there was not likely to be an adverse impact arising from the loss of a company which is expected to form the benchmark in Ofwat's econometric models, nor an adverse impact from the loss of a benchmark on the cost-base analysis.

5.134 We consider whether these adverse impacts amount to prejudice in section 7.

6. Possible alternative approaches

Alternatives available to Ofwat in making comparisons

6.1 Having found that the merger might be expected to impact adversely on Ofwat's ability to make comparisons, we looked at whether there were alternative approaches available to Ofwat which might mean that, even with the loss of a comparator following the merger, there would be no prejudice to Ofwat's ability to make comparisons.

6.2 We considered a number of different alternatives:

⁸⁹AWG plc is the owner of Anglian Water Services Limited.

- (a) additional sources of data:
 - (i) sub-company and panel data; and
 - (ii) national or international benchmarking, cross-sector comparisons, market testing;
- (b) alternative methodologies to Ofwat's existing econometric modelling:
 - (i) SFA and DEA; and
- (c) approaches used by other regulators.

6.3 In this context, we note that, in late April 2007, Ofwat and the industry published a joint review (under the auspices of UK Water Industry Research Ltd (UKWIR)). It made recommendations with the aim of (a) encouraging efficiency and innovation, (b) protecting the interests of consumers, and (c) enabling companies to finance their functions. The UKWIR review examined Ofwat's approach to assessing efficiency in the water industry and concluded that:

- (a) Ofwat should consider the use of panel data. Company level panel data is preferable to sub-company data.
- (b) Neither SFA or DEA is preferable to Ofwat's COLS approach for the purpose of estimating differences between companies in respect of their future expenditure requirements.⁹⁰

Given the timing of this report, we noted its conclusions but were not able to consider it in detail.

Additional sources of data

Sub-company and panel data

6.4 The use of sub-company and/or panel data might allow Ofwat to increase the amount of data available to it, so that the effect of removing one data point through the merger is reduced. There are two types of additional data:

- (a) sub-company data: data for separate business units within some or all of the 22 water companies; and
- (b) panel data: data for repeated (annual) observations over time for the same 22 companies.

In addition, it might be possible to use sub-company panel data: repeated (annual) observations over time for the same separable business units within some or all of the 22 water companies. However, we consider that the issues associated with sub-company panel data are covered in our discussion of sub-company and panel data individually.

⁹⁰The review's other conclusions are that: (i) Ofwat should initiate a programme of collaborative work with companies to remove unnecessary ad-hoc special factor adjustments from its analysis and to ensure that remaining special factors can be applied to the data ahead of the econometric modelling; (ii) Ofwat and the water companies should undertake, or commission, studies to examine historical trends in operating expenditure within and outside the water industry; (iii) Ofwat should reconcile evidence from (a) relative efficiency analysis, (b) expenditure trends and (c) company forecasts; and (iv) Ofwat should also implement most of (i), (ii) and (iii) for capital maintenance expenditure.

- 6.5 Sub-company data is used on the sewerage side where data can usefully be collected at the level of individual sewage treatment plants. However, Ofwat told us that it could not know whether sub-company data would produce an improvement to its water service models until the data was collected and modelled. Collection of data at the sub-company level would require agreement on the appropriate subdivision of companies and the allocation of cost data between them on a consistent basis.
- 6.6 The collection of meaningful sub-company data would be likely to be more difficult on the water side compared with the sewerage side. This is because water distribution networks tend to be more integrated than sewage collections systems. Costs at the level of individual sources of water, treatment plants or water resource zones may be more difficult to allocate accurately. In addition, both Ofwat and Hastings told us that sub-company data was not likely to be practicable for all models. Whilst, for example, it might be possible to use it for the resources and treatment operational expenditure, there would be difficulties for those models where expenditure contains a significant element of cost that is common across sub-company units. In addition, it would not add information for the business activities cost area, where many activities are company-wide.
- 6.7 Even if there were a significant number of companies with appropriate, sufficiently distinct, business units, Ofwat told us that there were likely to be practical difficulties and considerable cost associated with the collection of robust audited data. Ofwat told us that whilst the data on the cost drivers would generally be available at the sub-company level, it would be much harder to obtain robust cost data. The additional cost of providing such data would fall to all companies.
- 6.8 Hastings said that the additional costs to companies in providing the data to Ofwat should be limited. In particular, it said that the data could be easily extracted where companies already had geographic or functional separation.
- 6.9 We found that sub-company data could be of use in some areas of expenditure, but there would be likely to be significant issues in developing sufficiently robust accounting guidelines and obtaining robust, independent data and it would take several years for any new methodology based on sub-company data to be reliable.
- 6.10 We considered whether panel data might be used by Ofwat to provide more data for its econometric models. Hastings submitted a report by Oxera, which suggested that panel data was both available and appropriate for all seven of Ofwat's econometric models, and that, using panel data, and modelling the merger, there was virtually no impact from the loss of one independent comparator.
- 6.11 Ofwat sent us a report by its technical adviser⁹¹ that examined, in particular, the use of panel data on Ofwat's water distribution operating expenditure model in 2005/06. This report found that panel data may improve the precision of Ofwat's estimates and generate estimates that are comparable to Ofwat's existing models. It concluded that the panel data model should be considered further, whilst noting that panel data would only bring benefits if the cost structure in the industry had remained constant over time or if any change could be built into the model fairly easily.
- 6.12 We considered that it may be difficult to make appropriate allowance for the fact that the data on a particular company over time in a panel did not represent independent observations and therefore to understand the true gains in precision associated with using panel data, particularly in the presence of persistent, unobserved differences in

⁹¹Professor Mark Stewart of the University of Warwick.

costs between companies. However, Hastings submitted that the methodological issues we considered also affected Ofwat's current approach using cross-sectional data but could only be addressed in the context of panel data, which reinforced the need for panel data.

- 6.13 We found therefore that panel data had the potential to contribute more information to Ofwat's models. We note that this data was already readily available through the June return submissions. In addition, Ofwat's technical adviser recommended that panel data should be considered further. However, we found that the gains in precision resulting from panel data were as yet unproven.

International benchmarking, cross-sector comparisons, market testing

- 6.14 We also considered the scope for using other types of comparisons to enrich the data set used by Ofwat to assess efficiency in the water industry. Ofwat publishes a report annually comparing the performance of companies operating in the UK (including Scotland and Northern Ireland), some European countries (including Scandinavia and the Netherlands), and from the USA and Australia.⁹² Ofwat told us that it was difficult to collect consistent and comprehensive data from countries that operate within very different regulatory environments, but said that the information was useful as a cross-check.⁹³
- 6.15 Other possible techniques for improving the information available to Ofwat include process benchmarking (across industries) and market testing through outsourced services. We were told that there was scope for making comparisons across industries in some areas that were relatively standard, for example customer service areas. We were also told that there was a significant level of outsourcing in the water industry and market prices might be compared to gather alternative data.
- 6.16 We found that Ofwat already used additional comparisons. We thought it important that it continued to gather as much information as it could from these additional sources to complement the results of its models.

Alternative methodologies available to Ofwat in making comparisons

- 6.17 We also considered whether Ofwat might use alternative methodologies to analyse efficiency in the water industry. We looked in particular at SFA and DEA.⁹⁴ Hastings told us that SFA and DEA might add some additional value to Ofwat's present models and add confidence and robustness to its comparative efficiency modelling. Further details on both SFA and DEA are set out in Appendix I.
- 6.18 SFA makes different assumptions from the existing methodology about the distribution of residuals. It explicitly models the measurement error and the efficiency shortfall allowing the modelling to distinguish between the two. However, Ofwat told us that SFA required a large sample of observations which was not available to it. It also told us that SFA was likely to be more sensitive to the loss of a comparator than the existing econometric models.

⁹²International comparison of water and sewerage service—2006 report covering the period 2003/04.

⁹³The Water Industry Commission for Scotland told us that it used comparisons with companies operating in England and Wales to regulate Scottish Water.

⁹⁴Other possible methodologies include quantile regression. Quantile regression models estimate a quantile, such as the median cost or lower quartile, conditional on the values of cost drivers. The method is similar to Ofwat's existing methodology. For example, median regression minimizes the sum of absolute residuals rather than the sum of squared residuals. However, since neither Ofwat nor Hastings proposed quantile regression to improve Ofwat's modelling, we do not discuss this approach any further in this report.

- 6.19 DEA does not include an allowance for measurement error. Rather, it compares each company with its closest peers in order to define an efficiency frontier. Ofwat told us that DEA required large numbers of comparators to be robust, and would be no less sensitive to the loss of a data point.
- 6.20 In PR04, Ofwat reported that, as in its earlier reviews, it used alternative approaches to test the results from its econometric models. It prepared a whole service model to test its overall results, and used SFA and DEA. Ofwat found that the alternative approaches each confirmed the general dispersion of the companies' results.⁹⁵
- 6.21 We found that alternative approaches, including in particular SFA and DEA, might have some value in validating the results of the Ofwat's existing models. Together with alternative data sources discussed in paragraphs 6.4 to 6.16, we thought that these should be kept under review by Ofwat in the future.

Approaches used by other regulators

- 6.22 We note that other regulated industries operate with many fewer comparisons. In particular, we looked at the example of Ofgem, which assesses comparative efficiency in electricity distribution and in gas. Ofgem told us that, in electricity distribution, having 14 companies with only seven different owners was sufficient to instil rivalry between management teams similar to the rivalry in a competitive market. It was also a sufficiently small number to allow Ofgem to get relatively close to the individual companies' submissions. It used a mix of statistical analysis and qualitative comparisons to set prices.

Conclusions on alternative approaches

- 6.23 In summary, we found there to be scope for exploring the use of both sub-company data and, in particular, panel data. There might also be scope to ensure that Ofwat made the maximum use of the available data from other sources (eg other countries or industries), and to use alternative techniques (such as SFA and DEA) to validate the results of Ofwat's existing econometric models where possible.
- 6.24 We found that it was not possible, in the context of a merger inquiry, for us to reach a definitive view as to the methodologies Ofwat should adopt for PR09 and for the future. We noted that Ofwat is actively considering its approach for PR09, and that it was doing so independently of the merger. Nevertheless, we considered whether it would be practicable and cost effective for Ofwat to develop comparative methods that are less sensitive to the number of comparators than those currently used. Overall, we were not persuaded that our views on the impact of a loss of a comparator as a result of this merger would differ significantly if Ofwat were to use any of the alternatives outlined in paragraph 6.2.

7. Conclusion on prejudice

- 7.1 As set out in paragraph 5.132, we conclude that the merger is likely to have adverse impacts on Ofwat's ability to make comparisons between water companies. Paragraphs 6.23 and 6.24 set out our view that, although there might be scope for using alternative approaches, we were not persuaded that, using those alternative approaches, there would be no adverse impact on Ofwat's ability to make comparisons.

⁹⁵Ofwat, *Future water and sewerage charges 2005–10: Final determinations*, Periodic Review 2004, p153.

- 7.2 We considered whether these adverse impacts together would amount to prejudice. We were unable to quantify the cost base and qualitative adverse impacts, although we noted that both were small. We sought to quantify the precision adverse impact using a variety of approaches and using both percentage and financial measures, whilst recognizing that any such quantification was necessarily indicative. Taking each of the adverse impacts into account, we conclude that the merger may be expected to prejudice Ofwat's ability, in carrying out its functions by virtue of the WIA, to make comparisons between different water enterprises. However, we conclude that the prejudice is likely to be limited.
- 7.3 We conclude that the prejudice that we identified may be expected to result in adverse effects for customers in England and Wales. We expect the adverse effects to include higher prices to customers than would have been the case absent the merger.
- 7.4 We sought to quantify the adverse effects on prices as a result of the adverse impact on precision. In the light of the quantification that we were able to carry out, we took the view that £1.2 million and £10.3 million were both reasonable indicative estimates of the adverse effects we expect as a result of the loss of precision.⁹⁶ Although we were not able to quantify the adverse effects that we expect to arise from the adverse impacts on the cost base and on Ofwat's qualitative comparisons, we regarded a range of £1 million to £10 million as indicative of the adverse effects on price that we expect as a result of the prejudice in one review period.
- 7.5 Having decided that the merger may be expected to prejudice Ofwat's ability to make comparisons, we then considered remedies.

8. Remedies

- 8.1 We set out our conclusions on prejudice in paragraph 7.2. In this section we consider possible remedies and relevant customer benefits. We are required to consider whether:⁹⁷
- (a) we should take action to remedy, mitigate or prevent the prejudice or any adverse effects resulting or expected to result from the prejudice;
 - (b) we should recommend the taking of action by others for the purpose of remedying, mitigating or preventing the prejudice or adverse effects resulting or expected to result from the prejudice; and
 - (c) if so, what action should be taken.
- 8.2 In considering these questions, we are required to have regard to the need to achieve as comprehensive a solution as is reasonable and practicable to the prejudice and any adverse effects resulting from it.⁹⁸ When deciding on an appropriate remedy, we must consider the effectiveness of different possible remedies. In assessing effectiveness, we consider whether a particular remedy could in principle address the prejudice or the adverse effects and whether that remedy would be practicable. We must also consider the costs associated with possible remedies and have regard to the principle of proportionality. In choosing between two

⁹⁶Noting that these figures are 30-year NPVs of the adverse effects in one price review period.

⁹⁷Section 35(5) of the Act as amended by regulation 11 of the Water Mergers (Modification of Enactments) Regulations 2004.

⁹⁸Section 35(6) of the Act as amended by regulation 11 of the Water Mergers (Modification of Enactments) Regulations 2004.

equally effective remedies, we must choose the remedy that imposes the least cost or that is least restrictive.

8.3 We may also have regard to the effects of any remedial action on relevant customer benefits within the meaning of section 30 of the Act⁹⁹ provided that:

- (a) consideration of those benefits would not prevent a solution to the prejudice we have identified; or
- (b) the benefits which have accrued or may be expected to accrue, are substantially more important than the prejudice concerned.

8.4 A benefit is only a relevant customer benefit if we believe that:

- (a) the benefit has accrued or may be expected to accrue within a reasonable period as a result of the merger concerned; and
- (b) the benefit was, or is, unlikely to accrue without the merger concerned or a similar prejudice to Ofwat.

Relevant customer benefits may comprise lower prices, higher quality or greater choice of goods or services in any market in the UK, or greater innovation in relation to such goods or services.

Proposed remedies

8.5 In our remedies notice, published on 8 March 2007, we invited views on the following remedies:

(a) Option 1: Divestiture:

- (i) full divestiture of either SEW or MKW; or
- (ii) partial divestiture of part of either SEW or MKW.

(b) Option 2: Maintaining separate sources of information, by either:

- (i) operating two enterprises under separate licences; or
- (ii) providing two (or more) separate sets of data to Ofwat from a merged MKW/SEW operating under a single licence.

(c) Option 3: Price reduction.

We also invited views on possible combinations of these remedies.

8.6 Certain of the remedies that we considered would remedy or mitigate the prejudice we expect to occur as a result of this merger. Other remedies would not address the prejudice, but would remedy or mitigate the adverse effects we expect to result from the prejudice (see paragraphs 7.3 and 7.4).

8.7 Our guidelines state that one-off structural remedies are generally preferable to behavioural remedies.¹⁰⁰ However, given the limited nature of the prejudice identified

⁹⁹As amended by regulation 6 of the Water Mergers (Modification of Enactments) Regulations 2004.

¹⁰⁰CC9: *Water Merger References*, paragraph 3.15.

in this inquiry, we also considered whether Options 2 and/or 3 would be more proportionate to the prejudice identified.

- 8.8 In coming to our views on remedies, we took into account written submissions received, evidence gathered in hearings and meetings with both Hastings and Ofwat, and the responses we received to our remedies working paper sent to Hastings and Ofwat on 5 April 2007.
- 8.9 We first considered whether the remedy options set out in our remedies notice would be effective in remedying the prejudice identified and/or the adverse effects resulting from that prejudice. In doing so, we considered the effectiveness of each remedy in relation to the different aspects of the prejudice identified. For convenience, we continue to refer to the different aspects of the prejudice as ‘adverse impacts’ as in earlier parts of this report.

Option 1: Divestiture

Option 1a: Full Divestiture

- 8.10 A full divestiture remedy would require Hastings to divest either SEW or MKW by selling it to a suitable purchaser.
- 8.11 Hastings said that the divestiture of either SEW or MKW would be an effective remedy but would be disproportionate to the limited scale of prejudice identified. In addition, Hastings said that divestiture would prevent the merger benefits from being achieved, would not enable it to establish a stronger management team and would preclude the emergence of a better comparator.
- 8.12 Hastings said that [REDACTED].
- 8.13 CCWater said that it could see no business reason or direct customer benefits that would justify divestiture.
- 8.14 Ofwat said that a structural remedy would be the most effective way of remedying the prejudice and would be proportionate to the detriment found. It said that divestiture would address what it considered to be the key issue—the loss of an independent comparator. It would also avoid the ongoing costs of maintaining separate sources of information.
- 8.15 Ofwat said that there had recently been a great deal of interest in buying water companies. It said that demand for infrastructure assets was high, and neither company would be difficult to sell.
- 8.16 In our view, a full divestiture remedy would directly address the prejudice identified by removing the concentration of ownership that had created the prejudice. Given the interim undertakings that are in place, as well as the existing licence conditions, it would also be practicable: MKW and SEW would be able to operate independently under separate ownership.
- 8.17 [REDACTED] We thought that it would ultimately be practicable to dispose of either company.
- 8.18 We therefore conclude that full divestiture would be an effective remedy option.

Option 1b: Partial divestiture

- 8.19 Partial divestiture would require Hastings to divest to a suitable purchaser a part of either SEW or MKW that was:
- (a) capable of operating separately;
 - (b) sufficiently large to be viable as an independent WoC; and
 - (c) saleable.
- 8.20 SEW consists of two separate geographical areas—the Northern region in Surrey and Hampshire and the Southern region in Kent and Sussex. These two regions have both previously operated as independent WoCs and have entirely separate water supply and distribution systems.¹⁰¹ Hastings thought that, in theory, partial divestiture would be an effective remedy to the prejudice and adverse effects identified. However, it said that such a remedy would involve substantial costs and other disadvantages. In particular, there could in practice be no improvement to the comparative regime in time for PR09 because of the time required to prepare a part of one company for sale.
- 8.21 Hastings said that, in order to retain at least some of the merger benefits, a partial divestiture would be most likely to involve divesting the Northern region of SEW. Hastings said that it would be likely to take 12 to 18 months to set the Northern region up as a separate company and a further 6 months to sell. As SEW was largely financed by long-dated bonds, Hastings said that there would be a very significant refinancing cost of between £10 million and £60 million.¹⁰²
- 8.22 In addition, Hastings noted that there would be significant practical difficulties in splitting SEW into two operating units, including setting up separate management teams and procurement arrangements. The costs of establishing the Northern region as a separate business would include £[redacted] for a control centre; over £[redacted] a year for office accommodation; over £[redacted] a year for additional staff; and further costs for IT systems (including billing systems) and finance, customer service and regulatory compliance functions. Hastings also said that the operation of SEW's Northern region under a separate licence would see the loss of the efficiency gains it would otherwise expect to result from the merger.
- 8.23 Although the Northern region of SEW would be able to provide data to Ofwat, Hastings considered that it would not be a fully independent comparator in the short to medium term and that the discontinuity in the data would reduce its usefulness to Ofwat. It would take some years before the new company's data became of value to the comparative regime. Hastings also thought that both the new companies would be too small to be considered as benchmarks.
- 8.24 Hastings said that partial divestiture would be even more disproportionate to the scale of prejudice identified than full divestiture. [redacted]
- 8.25 CCWater said that it was not clear that the divestiture of any part of the merged company would be a practical remedy. It considered that the divestiture of the

¹⁰¹The Northern region was formerly Mid Southern Water, which came under the ownership of SAUR in 1997. SAUR already owned the old South East Water, which supplied water in what is now the Southern region of SEW. The two companies continued to operate under separate licences until the new, enlarged SEW was formed in January 1999.

¹⁰²[redacted]

Northern region of SEW would reduce or even eliminate the cost savings that it expected to result from the merger.

- 8.26 Ofwat, on the other hand, thought that divesting the Northern region of SEW, which had operated as Mid Southern Water until 1999, would be a satisfactory remedy. In Ofwat's view, it would be simple, clear and practicable and would maintain the existing number of comparators. Although Ofwat recognized that partial divestiture would be less easy to implement than full divestiture, it had the advantage of retaining any relevant customer benefits associated with water resources, were they to be demonstrated.
- 8.27 Ofwat told us that it should not be difficult to find a buyer for the Northern region of SEW. It considered that the Northern region of SEW should be as saleable as MKW. MKW was slightly smaller, and had had several potential buyers.
- 8.28 Ofwat estimated that the Northern region of SEW would have an annual turnover of about £50 million. Given Mid Southern's historic performance (it was banded A for operating efficiency before forming part of SEW), Ofwat considered that the new company had the potential to be a valuable comparator and that it could become a benchmark company for PR14. It also thought that the Southern region of SEW, combined with MKW, could become a useful comparator and could be considered as a benchmark. Ofwat also noted that the Northern region had separate tariffs, which would minimize any disruption to pricing.
- 8.29 Ofwat recognized that it might take until the end of 2007 to sell the Northern region of SEW. It expected that the new company could be in a position to prepare a business plan for submission in April 2009. Although, following divestiture, the data for the new company would take time to settle down, Ofwat thought that the Northern region of SEW had the potential to become a comparator within a year.
- 8.30 In our view, if successfully implemented, partial divestiture would preserve the number of independent comparators and would therefore remedy the prejudice, at least to a large extent. It would remedy the precision and qualitative adverse impacts, since the number of independent companies submitting data to Ofwat would be maintained. Partial divestiture would also be likely to address the cost base adverse impact, although this would depend on the precise list of standard costs for which the new company would be able to submit data to Ofwat compared with the lists of standard costs previously submitted by MKW and SEW.
- 8.31 The divestiture of the Northern region of SEW, with the Southern region and MKW permitted to operate under a single licence, is likely to be preferable to the divestiture of the Southern region of SEW, which would prevent many of the claimed merger benefits from being obtained. We saw no reason to believe that there would be a shortage of purchasers for any viable divestiture package.
- 8.32 We considered whether a water company the size of SEW's Northern region would be able to operate effectively and efficiently. The Northern region operated under a separate licence as Mid Southern Water until 1999. In 1995 its area had a population of 722,000. This is more than the population of MKW's operating area and those of several other WoCs, some of which consistently achieve a high efficiency band.
- 8.33 Nevertheless, we consider that splitting the Northern region out of SEW to form a separate business for sale would be time consuming and there would be a significant risk that the implementation would not be successful. Although the two regions have separate tariffs, production and distribution systems, they are operated as parts of the same business, sharing the same management team and services. The effective-

ness of the partial divestiture remedy would depend on Hastings creating two separate businesses each with its own management team and services. The asset package would need to be defined carefully and the process of creating the separate Northern region business would need to be monitored effectively. To the extent that any ongoing support services needed to be provided from Hastings to the separated Northern region, this could compromise the effectiveness of the remedy. The effectiveness of the remedy would also depend on splitting out the Northern region of SEW in such a way as to maintain its saleability and viability.

- 8.34 In addition, in order to address fully the prejudice to Ofwat's ability to make comparisons in PR09, the separation and sale process would need to be completed in time for separate data to be provided for the new company by 2008/09. Any long period of uncertainty would increase the risk that key Northern region staff would leave. If the process of separation and divestiture were allowed to take two years, as Hastings believes might be necessary, this could be a significant risk. The practicability and the timeliness of this remedy therefore gave us cause for concern.
- 8.35 We conclude that partial divestiture is not likely to be an effective remedy option. In any event, Hastings told us that, if required to implement partial divestiture, it would [redacted].

Option 2: Maintaining separate sources of information

- 8.36 This remedy would allow Hastings to retain SEW but would require the merged company to provide two separate sets of data to Ofwat. It has two variants:
- (a) Separate licences: Hastings is required to preserve its water business as two WoCs operating under separate licences.
 - (b) Separate reporting: Hastings is permitted to merge SEW and MKW under a single licence but required to establish two distinct reporting units that provide independent sets of data to Ofwat.
- 8.37 Under each of these options, the two reporting units could be (a) MKW and SEW; or (b) two new reporting units created from MKW and SEW. MKW and the Southern region of SEW (which are contiguous) might be merged to create a new reporting unit, and the Northern region of SEW might form a second separate reporting unit.
- 8.38 Our analysis focuses on the second of these configurations since this would enable all of Hastings' security of supply and water resource benefits (and possibly some of its planned operating and capital savings) to be achieved, both under separate licences and under a single licence.

Option 2a: Separate licences

- 8.39 Under this option, the licence conditions of each company would give each WoC duties to operate as an independent company and to supply a full set of data to Ofwat.
- 8.40 Hastings said that, in theory, option 2a might remedy the precision adverse impact. However, it had strong doubts about whether such a remedy would be acceptable to Ofwat. Hastings told us that it sought to exercise influence over all its investments and would only retain ownership of MKW and SEW if it could do so. It was therefore inevitable that data from two water companies controlled by Hastings would not be wholly independent, even if operated under separate licences. Hastings said that

there were significant advantages in moving staff to transfer skills and best practice between the companies. If the remedy prevented this, for example by requiring it to maintain two entirely separate management teams, Hastings would lose the portfolio advantages of holding two companies in the water sector.

- 8.41 Hastings said that it was also possible that the qualitative adverse impact might be remedied—although Ofwat might consider the two sets of qualitative information to be ‘tainted’, as was the case with the Veolia companies. Hastings told us that it was aware that Ofwat had had concerns in relation to the degree of separation between the Veolia companies in a number of areas. Hastings said that Ofwat had reviewed the Veolia companies’ costs, and was not prepared to use these companies individually as benchmarks.
- 8.42 Hastings said that if the two licences covered the areas of the existing companies there would be no water resource benefits and other customer benefits would be lost. Alternatively the two licences might cover (a) the Northern region of SEW and (b) MKW together with the Southern region of SEW. Hastings considered that, if the licences were to be reconfigured in this way, similar issues would arise to those associated with partial divestiture (see paragraphs 8.19 to 8.35).
- 8.43 Given the added restrictions, costs and complexity that would be involved in operating SEW and MKW, or some configuration of the companies, under separate licences, Hastings suggested that it would prefer to [§].
- 8.44 Ofwat also considered there to be little merit in the separate licences option. It said that this option would not remedy or mitigate the prejudice resulting from the merger or compensate for the loss of an independent comparator. Although retaining separate data sets might appear to remedy the precision adverse impact, Ofwat felt that it was not a practical long-term remedy. The continued co-ownership of the two companies would mean that the two sets of information would not be independent, and attempting to keep the data independent would require extra monitoring costs and impose an added burden on the companies. Ofwat questioned whether the benefits of retaining an extra data point would outweigh the additional burden of costs and management effort involved. Ofwat said that the position in relation to the Veolia companies was something it had inherited.
- 8.45 Ofwat said that the separate licences option would not address the prejudice associated with the adverse impact on its ability to make qualitative comparisons. Even though companies with separate licences would have to have separate management teams, experience with the Veolia companies suggested that the companies would share policies and that staff would be exchanged frequently. Whatever mechanisms were put in place, Ofwat felt that, as with the Veolia companies, a common ‘Hastings approach’ would develop and the companies would not have distinct strategies.
- 8.46 Where contiguous companies had come into common ownership, as had been the case with two of the companies owned by Veolia’s predecessor, Ofwat told us that the data usually ceased to be independent, and Ofwat had agreed to the licences being merged.¹⁰³ Ofwat therefore considered that any attempt to obtain independent, separate data from MKW and the Southern region of SEW, under common ownership, was likely to fail. Ofwat said that even when companies under common ownership were not contiguous, such as with the remaining Veolia companies, it had

¹⁰³An example of this was the period when North Surrey Water and Three Valleys Water were both owned by Vivendi.

found that the data supplied was not independent and it had agreed to the licences being merged.¹⁰⁴

- 8.47 Ofwat told us that it would not use data provided separately, even under separate licences, as separate data points in its model. Since the separate provision of such data would entail costs for SEW and MKW, and yet would have no value, it said that this remedy would be disproportionate.
- 8.48 CCWater, unlike Hastings and Ofwat, told us that it thought that this remedy should be pursued, despite possible problems with cost allocation and convergence of costs. It considered that separate data sets submitted for the Northern region of SEW on the one hand and a combination of MKW and the Southern region of SEW on the other would be as valuable to Ofwat as the data sets submitted by the Veolia companies.
- 8.49 We found that separate licences would preserve the number of comparators but was likely, in practice, to result in a substantial loss in the independence of two of them. This loss of independence might partly be offset by the licence requirements for transactions with other group companies to be at arm's length and for the two WoCs to operate as independent companies. However, there would be some sharing of data and spread of management best practice across the two companies in common ownership and the two data points would be likely to lose their independence.
- 8.50 The position of the separate licensees would be similar to that of the WoCs currently owned by Veolia. Although Ofwat uses data from the Veolia companies in its econometric models, it does not regard their data as being sufficiently independent for any one Veolia company to act as a benchmark.
- 8.51 In our view, if successfully implemented, the separate licences option would mitigate the prejudice to some extent. It would go some way to addressing the precision adverse impact by maintaining the number of the comparators in Ofwat's econometric modelling. The two data sets submitted to Ofwat would not, however, be completely independent. As two of the comparators would no longer be independently owned they would be likely to share some common policies. These factors would cause some reduction in the quality of data received by Ofwat, which would be likely to regard the two data sets as lacking the necessary degree of independence.
- 8.52 In principle, separate licences could also mitigate the prejudice associated with the cost-base adverse impact of losing a comparator for certain standard costs. We note, however, that in similar circumstances, Ofwat expressed concern about the independence of the standard costs submitted by the Veolia companies. Qualitative information submitted by the two companies may also not be fully independent. Separate licences may thus only partially mitigate the qualitative adverse impact.
- 8.53 There would be significant operational arguments in favour of any separation being between (a) SEW Northern region and (b) MKW and SEW Southern region. We considered the practicability of such a solution. The implementation of such a solution would result in the splitting of SEW. We considered that this would raise similar issues to those discussed in relation to the practicability of the partial divestiture option (see paragraphs 8.33 and 8.34). Indeed, it may be the case that a remedy involving separate licences in this way would result in a full divestiture by Hastings.

¹⁰⁴For example, Northumbrian Water and Essex & Suffolk Water.

8.54 In summary, we considered that there would be very limited value in the separate provision of data sets, even by two companies operating under separate licences. We noted that Ofwat said that it would not use any such data as separate data points in its econometric models. We also found that there were real concerns about the practicability of splitting SEW to establish separate licences, in the way required by one variant of this remedy. We conclude that this remedy would be unlikely to be effective.

Option 2b: Separate reporting

8.55 This option would allow MKW and SEW to be operated under a single licence but require the merged WoC to maintain MKW and SEW (or the alternative new companies set out in paragraph 8.37) as two distinct operating areas that would submit separate sets of data to Ofwat.

8.56 Hastings considered that the provision of two data sets to Ofwat would remedy any precision adverse impact identified and would provide effective data for three out of four of Ofwat's individual operating expenditure econometric models. Hastings did not consider that this option would remedy the cost-base adverse impact identified, since procurement would be centralized—although it felt that the merged company had the potential to become a cost-base benchmark. Given that the operating units would share common policies, Hastings felt that it was not clear whether this remedy would address the qualitative adverse impact identified.

8.57 Hastings did not believe that this option would be acceptable to Ofwat. In principle, it was prepared to supply two data sets from a merged company operating under a single licence. Given the extra costs involved, however, Hastings said that, in its view, this option should only be pursued if Ofwat would make use of the data.

8.58 Ofwat considered that this remedy option could not be an effective remedy to any of the adverse impacts identified since the two data points would not be independent. As with the provision of separate data under separate licences, Ofwat told us that it would not use any such data separately in its econometric models. Given that there would be a cost to MKW and SEW of providing separate data, and that it would not use the data, Ofwat considered that this remedy would be disproportionate.

8.59 We found that separate reporting would, at a superficial level, preserve the number of comparators and could therefore in principle go some way to mitigate the prejudice. It could address the precision adverse impact in a very limited way but there would be considerable concern about the independence of data provided.

8.60 In a similar way, separate reporting might appear to address the cost base adverse impact by preserving the number of comparators available for the standard costs that already have few comparators, and for qualitative comparisons. However, the fact that procurement would be centralized and policies may well be shared could cause the data provided not to be independent, in which case this remedy would not effectively address either the cost base or qualitative adverse impacts. There would be greater concern about the independence of this data than in the case of the separate licences option.

8.61 We noted that Ofwat did not believe that this remedy would be effective and said that it would not use any such data separately in its econometric models. We considered whether it would be possible to put in place restrictions on the management of the business units that would ensure the usefulness of their sub-company data within Ofwat's econometric models. We considered in particular whether it would be possible to establish separate, appropriately incentivized, management teams for the

two business units and to impose accounting separation. However, we found that, with joint ownership and a single licence, any such measures would be unlikely to result in Ofwat's using the data separately in its econometric models and would be unlikely to improve the effectiveness of this remedy.

8.62 In summary, we thought that this remedy option was unlikely to be effective.

Option 3: Price reduction

8.63 A price reduction remedy would not address the prejudice we have identified.¹⁰⁵ However, such a remedy might be used to mitigate the adverse effects of the merger by offsetting the customer detriment (higher prices to customers than would have been the case absent the merger) which might be expected as a result of the prejudice to Ofwat's ability to make comparisons. Hence the merged company would, in effect, mitigate the effects on water customers of the reduction in the effectiveness of the regulatory regime resulting from the merger.

8.64 In considering this remedy it is important to note that the adverse effects of the merger would be felt by all water customers in England and Wales.

8.65 Hastings said that lower prices for its customers would at least mitigate, and probably outweigh, the adverse effects resulting from the prejudice, in particular that resulting from a loss of precision. A price reduction would not, however, directly remedy any prejudice resulting from cost-base or qualitative adverse impacts. Hastings thought, however, that a price reduction required by a licence modification would increase the incentive for the merged company to reduce costs and thus encourage the merged company to become a better comparator. In particular, Hastings said that the merger cost savings would directly improve the precision of Ofwat's business activities operating expenditure model.

8.66 Hastings told us that it was prepared voluntarily to pass [X] of the estimated operating expenditure savings resulting from the merger ([X] of the estimated £3.1 million annual savings) through to its customers. Since it could not readily quantify the likely capital expenditure savings as a result of the merger, the price reduction it offered did not reflect any capital expenditure savings.

8.67 The operating expenditure savings would start to be achieved in 2008/09 and would only be achieved in full in 2009/10. Hastings said, however, that it would introduce the £[X] million price reduction in 2009/10.

8.68 Hastings said that it would not be necessary for the remedy to maintain the price reduction beyond PR09 because this would be achieved via the price determination. Hastings thought that it would be possible to ensure that the price reduction continued after PR09 by basing the merged company's operating cost assessment on its expected costs after applying the estimated merger savings, even if operating costs in 2008/09 did not fully reflect the cost savings arising from the merger. Hastings said that it expected Ofwat to approach PR09 on this basis whether or not the proposed savings had in fact been achieved, because Ofwat has a duty to fund only efficient performance. Hastings said that if necessary, a mechanism could be established to clarify that PR09 should be conducted on that basis. Hastings thought that a price reduction could be implemented through either a voluntary abatement of 'K' or a section 13 licence amendment by agreement.

¹⁰⁵Hastings argued that a price reduction remedy might address the precision adverse impact for reasons similar to those set out in paragraph 8.82. However, we did not accept that argument for the reasons set out in that paragraph.

- 8.69 Hastings said that the price reduction it had suggested would only benefit the customers of the new company. It could not see a workable way of passing any significant part of the benefit on to all other customers in England and Wales. It said that any price reduction that benefited SEW and MKW customers alone should only reflect that part of the adverse effect felt by SEW and MKW customers. In addition, Hastings argued that this should be adjusted to take account of the value of the benefits that would accrue to these customers as a result of the merger.
- 8.70 Hastings said that, given the limited nature of the prejudice we had identified, any price reduction in excess of £[redacted] million in 2009/10 would be disproportionate. It further argued that a sufficiently large price cut might cause it to walk away from the merger, which would have the consequence that any relevant customer benefits would be lost. Hastings said that, if we were to conclude that the relevant customer benefits were substantially more important than the prejudice, it would be disproportionate and unreasonable to impose a price cut remedy which resulted in Hastings choosing to sell one company.
- 8.71 Hastings noted that the adverse effects of any remedy would not be felt until after 2009/10. This was because any prejudice to Ofwat's ability to make comparisons resulting from the merger would not have any impact until the next periodic review, ie until 2009, the determination from which would come into effect in 2010/11. It argued that if it were required to make a one-off lump sum transfer to customers in excess of the £[redacted] million it had offered in advance of the next periodic review, the remedy would relate to adverse effects that would be felt considerably after the remedy had been implemented.
- 8.72 Hastings expressed concern about the way in which any price reduction remedy would interact with the price control process. In its view, any price reduction would need to be funded by efficiency savings achieved by the merged company.¹⁰⁶ It said that there was no option for Hastings to make any price reduction transfer itself given that, as a listed fund with a share price driven by dividend yields, there was no option for it to fund any price reduction that would result in a significantly lower dividend.
- 8.73 Hastings said that the amount of the efficiency savings should not be taken from the companies twice. Hastings expected the proposed savings to be reflected in PR09. Therefore, if a one-off lump sum transfer exceeded the savings that could be made before PR09, there would be a risk that SEW and MKW would not be able to realize additional efficiency savings sufficient to recoup the cost of the transfer.
- 8.74 In addition, Hastings said that we should assume that any merger efficiencies would be passed on to customers through PR14 at the latest. This would mean that any price reduction should reflect only the adverse effects of the merger up to 2014 and not in perpetuity.
- 8.75 Ofwat told us that a price reduction might be part of a proportionate remedy if there were relevant customer benefits to be protected (although it submitted that relevant customer benefits had not been demonstrated in this case). Ofwat said that a price reduction would, however, have to be large enough to cause the merged company to become a benchmark at PR09. Ofwat said that, for the merger to have real benefits, the merged company should be delivering efficiency savings beyond the level of the PR04 'carrot' and 'stick'.

¹⁰⁶[redacted]

- 8.76 Ofwat estimated that, based on the current performance of all companies, the merged company would need to make savings in operating expenditure of about £[X] million and capital expenditure savings amounting to about £[X] million in order to become the benchmark. Ofwat said that it was difficult to determine precisely how large the savings would need to be to force the merged company to become a benchmark in PR09.
- 8.77 Ofwat also told us that any one-off lump sum transfer should be made to customers as soon as possible, which it considered to be 2008/09. Any such price reduction would need to be clearly explained in customers' bills. Ofwat noted that MKW and SEW currently had five different tariff areas and it remained to be determined whether any transfer to customers should be by means of a common percentage reduction to all bills or a common monetary amount. Ofwat noted that, in past merger cases, price reductions had been implemented through modifications to the merged companies' licences.
- 8.78 Ofwat told us that the cost of any one-off lump sum transfer to customers should be met by SEW and MKW rather than Hastings. It argued that this would provide some incentive on the merged company to cut costs (in order to recoup the transfer) and would therefore help to ensure that—albeit in a limited way—the adverse effects were addressed into the future. Ofwat recognized that even if the transfer had to be made by MKW and SEW, it could in principle be funded by Hastings (for example, by an injection of equity). However, since Hastings would want a return on its investment, Ofwat thought that this would still put some pressure on the companies to deliver efficiencies.
- 8.79 CCWater told us that it would expect a major part of any merger cost savings to be reflected in customers' bills. It felt that setting lower prices for the merged company would also give it an increased incentive to move closer to the efficiency frontier, benefiting all customers. The Water Industry Commission for Scotland also told us that a sustainable reduction in customers' bills would be an appropriate remedy for the prejudice identified.
- 8.80 Since any price reduction remedy would be designed to mitigate the adverse effects of the merger, we considered the magnitude of the adverse effects of the merger in terms of higher prices to customers in England and Wales. Our indicative estimate for this figure was that it fell in the range £1 million to £10 million for one price review period (see paragraph 7.4).
- 8.81 We first considered whether a price reduction remedy would mitigate the adverse effects on customers of all water companies. The adverse effects on customers of water companies other than MKW and SEW would be mitigated if the merged company became sufficiently efficient in 2008/09 to become a benchmark company in PR09. Ofwat estimated that this might require savings of around £[X] million with reference to expenditure reported in 2005/06 (see paragraph 8.76), equating to around [X] per cent of the combined 2005/06 operating and capital maintenance charges of MKW and SEW. We thought it unlikely that the merged company would be able to achieve savings of this magnitude to become a benchmark by 2008/09.
- 8.82 Hastings said that the price reduction it had offered would have an effect on other water customers through the periodic review process. However, the price reduction of £[X] million¹⁰⁷ proposed by Hastings would only benefit directly customers of the merged company. To the extent that it forced the merged company to become more

¹⁰⁷Equivalent to about a [X] per cent price reduction.

efficient, this would reduce the operating and capital costs used in Ofwat's econometric models and might have a small effect on the price limits set for other companies at the next periodic review. The effect of a small movement in the efficiency of these companies is only likely to produce at most a very small shift in the regression line in each of Ofwat's econometric models. We therefore consider it unlikely that the price reduction offered by Hastings would substantially mitigate the adverse effects on customers of other water companies.

- 8.83 Although in principle it would be desirable to require Hastings to mitigate the adverse effects of the merger on customers of all water companies by making a transfer to all 23 million such customers, we thought it unlikely that a cost-effective mechanism for making such a transfer could be found, given the sums of money involved.
- 8.84 We therefore considered how best to mitigate the adverse effects on customers by means of a price reduction to customers of SEW and MKW. We disagreed with Hastings' suggestion that a price reduction should reflect only that part of the adverse effect felt by SEW and MKW customers. We thought that in order to mitigate the adverse effects resulting from the prejudice as comprehensively as possible, any price reduction should in principle reflect the amount of the adverse effects on all customers in England and Wales.
- 8.85 We thought that it would be possible to oblige Hastings to effect such a price reduction. This could be achieved by means of ongoing reductions in prices, by means of a one-off lump sum transfer to customers, or by some combination of the two. In any case, we considered that the billing systems operated by SEW and MKW would provide an existing, cost-effective means of achieving such price reductions.
- 8.86 We considered that there were advantages to the price reduction being effected by means of a one-off lump sum transfer to SEW and MKW customers, made in advance of PR09 (which we describe as an 'upfront' transfer). This would have the advantage of decoupling the effectiveness of this remedy from the periodic review process. Customers would be guaranteed a price reduction irrespective of the achievement of future efficiency savings by the companies. In addition, such a mechanism would have the advantage of avoiding any ongoing compliance costs both for the parties and Ofwat.
- 8.87 However, we also noted that the price control process provides a means of securing price reductions for SEW and MKW customers. To the extent that price reductions might be funded by efficiency savings, the price control process should mean that such efficiencies are passed through to customers in any event from PR09.
- 8.88 Ofwat told us that in determining prices it must have regard to its statutory duty to ensure that water companies can finance their functions. Although Ofwat will base its price determination in 2009 on SEW and MKW actual costs in 2008/09, Ofwat also told us that it would be able to make an adjustment to the 2009 price determination for SEW and MKW that reflected efficiency savings that the companies had stated could be achieved (assuming it had suitable assurance that the companies would accept that). Hastings told us that it was confident that the merged company could achieve £3.1 million a year of operating expenditure savings, and had told us that it also expected to achieve capital expenditure savings as a result of the merger. Hastings also told us that it expected Ofwat to approach PR09 on the basis that it did not need to fund the companies for the amount of the proposed operating expenditure savings. We therefore thought that Ofwat should be able to factor at least the £3.1 million efficiency savings into its 2009 price determination without jeopardizing SEW's or MKW's ability to finance their functions, and that any remedy we imposed could establish a mechanism requiring SEW and MKW to agree to a

price determination in 2009 on that basis. This would ensure that customers benefited from lower prices in the next price control period than might otherwise have been the case. We also noted that any such requirement would simply feed into PR09, and would not extend beyond that review. It would therefore avoid the need for ongoing additional monitoring and implementation costs.

- 8.89 Hastings suggested that we recommend that Ofwat approve the merger of licences to ensure that the companies were put in a position to realize the cost savings expected to arise from the merger. Ofwat said that it had previously agreed to merge the licences of contiguous companies under common ownership and that the merging licences could be achieved in around three months (see paragraph 8.46). We therefore expected that Ofwat would agree to merge the SEW and MKW licences and would be able to do so in a short time period. Given our expectation, we saw no need to make any recommendation to Ofwat.
- 8.90 Therefore, assuming that a mechanism of the type discussed in paragraph 8.88 could be established for PR09, we considered what price reductions could reasonably and practicably be secured in order to address the adverse effects. We formed the view that any price reduction remedy should be paid to customers in the form of a one-off lump sum transfer. Ofwat told us that any such transfer would not be taken into account in the periodic review as it would not affect the ongoing costs of the business.
- 8.91 Hastings told us that a one-off lump sum transfer of £4 million could potentially be funded from efficiency savings made before PR09. However, it said that there was a risk that any greater sum could not be funded. On balance, we were satisfied that a one-off upfront transfer of £4 million was practicable.
- 8.92 We noted that £4 million was broadly in the middle of our indicative range of customer detriment (see paragraph 7.4). We therefore took the view that a one-off price reduction of this amount would effectively mitigate the adverse effects that we expect to result from the prejudice. Acknowledging that Hastings told us that it would fund any price reduction through efficiency savings, and recognizing that the price review process would pass on efficiency savings to customers from PR09, we reached the view that £4 million was a reasonable sum for a one-off upfront transfer. We thought that this remedy should be accompanied by a requirement on SEW and MKW to accept a price control determination in 2009 based on savings in operating expenditure of £3.1 million a year as compared with current operating expenditure costs and projections.
- 8.93 The CC will tend to favour a remedy that can be expected to show results within a relatively short time period.¹⁰⁸ Although we accept that the adverse effects of the merger will not be felt until after PR09 (when Ofwat will next make comparisons), we see no reason to defer the transfer until then. Indeed, we consider that there is merit in the transfer being made in advance of PR09 since this would ensure that the remedies would not extend in time beyond PR09 and would be independent of it. We thought that it would be possible to make such a transfer through the SEW and MKW billing systems on the bills issued in respect of 2008/09.
- 8.94 We acknowledged that it would be important to ensure that the one-off lump sum transfer and the reason for it was clearly visible to customers on their bills. Any one-off lump sum price reduction should therefore be clearly marked and explained on customers' bills.

¹⁰⁸CC9: *Water Merger References*, paragraph 3.16.

- 8.95 We considered whether the one-off lump sum transfer should be made by Hastings or by SEW and MKW themselves. We thought that there would be no meaningful difference between a transfer made by Hastings and a transfer made by SEW and MKW, given that Hastings has told us that it would look to recover the amount of any transfer it made from the companies. We noted that Ofwat had said that any transfer should be made by SEW and MKW to provide an incentive to reduce costs. We also noted that this was in line with Hastings' view that any transfer would need to be recovered through future efficiency savings. Although it was not clear to us that a one-off upfront transfer, which represents a sunk cost, would provide an incentive for future cost reductions, we thought, on balance, that the transfer should be made by SEW and MKW themselves.
- 8.96 In summary, we conclude that a price reduction remedy could be designed which would effectively mitigate the adverse effects of the merger by means of:
- (a) a one-off lump sum transfer of £4 million made by MKW and SEW to MKW and SEW's customers through the billing system in respect of bills for 2008/09; and
 - (b) a requirement on SEW and MKW to accept a price control determination in 2009 based on savings in operating expenditure of £3.1 million a year as compared with current operating expenditure costs and projections.¹⁰⁹
- 8.97 We thought that:
- (a) such a remedy would be practicable;
 - (b) £4 million was a reasonable sum for a one-off lump sum upfront transfer; and
 - (c) it was reasonable and practicable to require SEW and MKW to accept a price determination in 2009 that reflected the £3.1 million efficiency savings that they had said they would achieve.

Combination of remedies

- 8.98 We also sought views on possible combinations of the remedy options discussed above. We focused on a combination of options 2 and 3.
- 8.99 Hastings told us that a combination of a price reduction and maintaining separate sources of information under a single licence would be a reasonable remedy for the prejudice identified.
- 8.100 As discussed in paragraph 8.61, Ofwat told us that it considered that the value of maintaining separate sources of information was questionable. We asked Ofwat whether it believed that a requirement on a single company to provide separate data sets in addition to a price reduction remedy would improve the effectiveness of the remedy. It told us that it would not use any such data and that there would be costs to SEW and MKW of providing such data.
- 8.101 We conclude that a remedy which combined a requirement to provide separate data sets with a price reduction would be no more effective than a price reduction remedy alone. We therefore did not consider this option further.

¹⁰⁹We note that Ofwat could base its determination on a higher level of efficiency savings as appropriate.

Conclusions on remedies (before consideration of relevant customer benefits)

- 8.102 Having analysed each of the remedy options in turn, we now summarize our views as to which remedy options are effective. We also give initial consideration to the question of proportionality. We then discuss relevant customer benefits before concluding on proportionality and our choice of remedy.
- 8.103 We conclude that partial divestiture would not be an effective remedy in this case (see paragraphs 8.19 to 8.35). We note that the remedy would depend crucially on the specification and creation of an appropriate divestiture package, and we consider that this represents a significant risk to its effectiveness. We have particular concerns over the practicability of separating the Northern region of SEW from the remainder of SEW, and about whether this could be achieved in sufficient time for PR09. We therefore do not consider this remedy further.
- 8.104 In principle, we thought that maintaining separate sources of information might, in a limited way, mitigate the prejudice, particularly if separate licences could be maintained (see paragraphs 8.36 to 8.62). Ofwat uses the separate sources of information provided by the Veolia companies as separate data points in its econometric models. However, we note that Ofwat said that this remedy would not be effective. We accepted that Ofwat would not use any information provided by SEW and MKW (or SEW Northern region and SEW Southern region plus MKW) separately in its models. We conclude that a remedy based on separate sources of information would not be effective in mitigating the prejudice or the adverse effects, and we did not consider this remedy further.
- 8.105 In our view, full divestiture is the only fully effective remedy option that we identified. This is the only option that would fully address the prejudice resulting from the merger, and we are confident that it would be practicable. We are aware that this remedy may be costly and intrusive for Hastings. However, as stated in our guidance,¹¹⁰ we do not consider the costs to the divesting parties of divestiture in completed mergers, since these costs could have been avoided by making the transaction conditional on regulatory clearance. We thought that the divestiture of either MKW or SEW would be practicable.
- 8.106 We conclude that the price reduction remedy would mitigate the adverse effects resulting from the merger. There appeared to be no cost-effective mechanism to secure a transfer to customers beyond SEW and MKW to mitigate the adverse effects of the merger. However, we thought that a transfer only for SEW and MKW customers would go some way to addressing the adverse effects of the merger. In our view, a price reduction remedy implemented by means of a one-off lump sum transfer to SEW and MKW customers of £4 million in advance of PR09, together with a requirement on SEW and MKW to have operating efficiency savings of £3.1 million a year (as compared with current operating expenditure costs and projections) factored in its price determination in 2009 would be an effective remedy. Implemented in this way, we also note that the remedy would not entail ongoing monitoring costs either for the merged company or for Ofwat.
- 8.107 We therefore found that there were two effective, or partially effective, remedies. We noted that a divestiture remedy could be thought to be the more intrusive of the two remedies, and that this may affect the question of proportionality of that remedy, given that the prejudice that we have identified is limited. However, before coming to

¹¹⁰CC9, Water Merger References, paragraph 3.10.

a conclusion on the questions of reasonableness and proportionality, we considered relevant customer benefits.

Relevant customer benefits

8.108 Paragraphs 8.3 and 8.4 set out the circumstances in which we are able to have regard to the effect of our proposed remedies on any relevant customer benefits and the statutory definition of relevant customer benefits.

8.109 Hastings suggested that the merger would result in the following benefits:

- (a) security of supply benefits, particularly to customers in SEW's Southern region;
- (b) improved planning of water resources that it would expect to enable some investment projects to be postponed;
- (c) operating expenditure savings amounting to £3.1 million a year in the period from April 2009 to the implementation of PR09, [redacted] of which it intends to pass through to customers in the form of a price reduction;
- (d) capital expenditure savings of around [redacted] per cent a year from PR09 onwards; and
- (e) possible additional savings from sale or lease of office space.

8.110 Hastings submitted a combined water resources report (CWRR)¹¹¹ to us. This looked at the potential effect of the merger on water resource constraints in the area served by MKW and SEW and on security of supply in SEW's Southern region. The CWRR suggested that security of supply could be improved by linking the distribution systems in the water resource zones in SEW's Southern region with the adjacent zones in MKW. Four such links were proposed. The CWRR also considered that these links would have the longer-term benefit of enabling improved water resource planning, potentially allowing some planned investments to be postponed.

8.111 Hastings said that the water resource benefits would directly benefit customers of the merged company through improvements in their security of supply. In its view, the risk to customers' supply caused, for example, by outages of an individual source would be reduced. Hastings also thought that it would be able to share small surpluses in MKW's water resource zones with neighbouring SEW water resource zones that were in deficit. It believed that customers valued security of supply more highly than any other aspect of service quality. Hastings also felt that customers of other companies in the South-East might also benefit, to a lesser extent, through improvements in their security of supply.

8.112 Hastings told us that some of the water resource benefits, namely the improved available headroom and reduced source outage, would lead to the deferment of capital schemes in SEW's Southern region. It estimated that the capital savings resulting from deferring these schemes would have an NPV of approximately £[redacted] million to £[redacted] million, net of the cost of the proposed strategic links.

8.113 Hastings said that the security of supply and water resource benefits could not be obtained without the merger. Even if SEW might achieve a security of supply index of 100 without the merger, this was not the only aspect of security of supply. Hastings

¹¹¹ http://www.competition-commission.org.uk/inquiries/ref2006/water/water_resources.htm.

told us that this measure failed to take account of source outages and the effect of flexible links between water resource zones.

8.114 Hastings said that it had reviewed each function within the two companies on a top-down basis and taken a view of merged headcount and cost base by business area. This had enabled it to identify possible gross savings in operating expenditure from combining the two companies of £3.1 million each year, over and above any efficiency gains in MKW's and SEW's stand-alone plans.¹¹² The savings would arise in the following areas:

- (a) management team and company secretary;
- (b) operations, including field staff and control room staff;
- (c) customer service (in particular rationalizing call centre arrangements);
- (d) water quality (rationalizing laboratory provision);
- (e) information technology;
- (f) finance, regulation and procurement; and
- (g) human resources.

8.115 Hastings expected that the majority of the operating expenditure efficiencies would be achieved part-way through 2008/09 and that the full annual operating expenditure benefit of £3.1 million would be achieved from 1 April 2009.

8.116 Hastings said that few capital expenditure savings were anticipated to arise from the merger before PR09 as most such projects were already planned for or under way. From PR09, the merged company would expect to benefit from the operation of the most favourable terms available to MKW and SEW, and that preliminary indications suggested that this may facilitate savings of around [X] per cent a year.

8.117 Hastings thought that there might be some additional savings from the sale or lease of office space. However, these were not certain and might take time to implement.

8.118 Hastings said that the total costs of implementing both stand-alone and merger-specific cost savings would be £[X] million in 2008/09 to generate total annual cost savings of £[X] million. This would suggest that, on a pro-rata basis, the implementation costs for the £3.1 million annual savings in operating expenditure would be around £[X] million. It said that costs in the region of £[X] million would be incurred in the integration of the IT systems but that these costs would be absorbed in the combined allowed capital expenditure budget for IT infrastructure enhancement and replacement.

8.119 In addition, Hastings told us that the merger would be likely to result in a reduction to the cost of capital allowed for the merged company at PR09. In PR04 SEW was allowed an SCP above the standard weighted average cost of capital (WACC) of 0.3 per cent and MKW was allowed an SCP of 0.7 per cent (see paragraph 4.34). If Ofwat maintained the same approach at PR09 (and subject to any changes in the underlying standard WACC), Hastings expected the merged company to be allowed an SCP of 0.3 per cent. Hastings said that this would equate to an annual saving to

¹¹²The savings identified did not allow for implementation costs.

MKW customers of around £[redacted] million a year (or approximately [redacted] per cent of total revenues).

- 8.120 Hastings considered that, even if the CC thought there was a prejudice, it was at most limited and substantially outweighed by the relevant customer benefits. Hastings said that, if the CC took the view that the relevant customer benefits resulting from the merger were substantially more important than the prejudice, it would be unreasonable for us to impose remedies that diminished the benefits to which the merger gave rise. It said that we should take into account the totality of the merger's effects on customers in assessing what would be a 'fair' remedy to mitigate the adverse effects of the mergers. We understood this argument to say that we should impose a remedy that sought to address the adverse effects of the merger *minus* the value of any relevant customer benefits.
- 8.121 CCWater told us that the merged company should be able to achieve merger benefits that were greater than the adverse impacts that the CC had identified. It considered that the inter-zonal water transfers and better integrated resource planning that it expected to result from the merger should benefit customers in the South-East generally. It was, however, uncertain about the timing and certainty of these benefits and could not give a view on whether they were substantially more important than the prejudice identified.
- 8.122 Ofwat considered the claimed benefits to be small. It said that the claimed water resource benefits appeared to involve £[redacted] million of additional capital expenditure compared with SEW's previous proposals for solving the security of supply problems that had been allowed for in its price determination. Ofwat said that Hastings had not explained how increased distribution flexibility would improve levels of service to customers. It also said that SEW was already delivering improved security of supply as a result of the Bewl Water-Darwell link and associated projects being largely completed. Ofwat thought that improved water resources planning depended on whether water could be transferred around Hastings' proposed 'central region', as Hastings had claimed. Ofwat believed that Hastings had neither demonstrated that this would be the case without further infrastructure investment, nor shown how it would benefit customers.
- 8.123 Ofwat also thought that similar results could be achieved without the merger by using flexible bulk supply agreements (BSAs). These were not, therefore, benefits that could only arise as a result of the merger.¹¹³
- 8.124 The EA told us that it broadly agreed with Ofwat's view on the water resources benefits. In its view, the proposed links would allow MKW's water surplus to be used in SEW's area, although more analysis would be needed to verify that SEW's existing deficits could be fully resolved in this way. However, it thought that many of the water resource benefits could be achieved without a merger.
- 8.125 The EA said that the merger might alleviate the need to abstract new resources, and might allow more flexible management of the Bewl Water-Darwell reservoir system. More detailed analysis of water resources issues would, however, be required when new draft water resources plans were submitted at the end of 2007.
- 8.126 Ofwat was not convinced that the cost savings Hastings had identified were even as large as the 'carrot' element of the efficiency assumptions Ofwat had identified at PR04. There was no guarantee that they would be passed on to customers in the

¹¹³A link between South Staffordshire Water and Severn Trent Water was an example of a BSA that carried flexible two-way flows. Southern Water and SEW already had a flexible BSA.

form of higher service levels or reduced prices. Ofwat did not, therefore, consider that they qualified as relevant customer benefits as defined in the relevant legislation. Even if they did, they would benefit only customers of the merged company. There was no mechanism for benefits to be passed on to customers of other companies. A fully updated water resource plan would be needed to establish whether there were genuine security of supply benefits.

- 8.127 Ofwat told us that, in preparation for PR09, it was examining whether an SCP would be necessary. Indeed, Ofwat said that it was considering whether it would make any allowance for financeability in the determination, in view of the continuing trend for an improvement in access to capital for small companies. It said that, in the light of this, it would be inappropriate to consider the SCP as a relevant customer benefit.
- 8.128 More generally Ofwat told us that without any quantification of relevant customer benefits or link to where savings would be made, it did not see how we could reach a conclusion that the benefits claimed by Hastings were relevant customer benefits.
- 8.129 We considered first whether the claimed benefits are relevant customer benefits within the meaning of the Act. We next considered whether we could have regard to the effect of any remedy on relevant customer benefits, having regard to the criteria set out in paragraph 8.3. Finally, we considered the effect of each remedy option on the relevant customer benefits we had identified.

Do we consider these to be relevant customer benefits?

- 8.130 We looked at whether (a) the water resource benefits and (b) the expected merger cost savings were benefits to relevant customers within the meaning of the Act.

- *Water resource benefits*

- 8.131 We commissioned a water engineer to examine Hastings' CWRR.¹¹⁴ We were satisfied that our technical consultant has confirmed that genuine benefits would result from the four proposed linkages between the distribution systems of MKW and SEW's Southern region (see paragraph 8.110). For these to amount to relevant customer benefits it also has to be unlikely that they would be achieved without the merger.
- 8.132 We believed that some of the benefits might be achieved by means of flexible BSAs, but that the four linkages operated under BSAs between two independent companies would be less effective than the same linkages operated under a single management team. We accepted that co-ownership of SEW and MKW changed the incentives to engage in cooperative arrangements in relation to water resources, and significantly increased the likelihood of improved plans. We noted that linkages of the type outlined in the CWRR had not been put in place while the two companies had been in separate ownership.
- 8.133 However, it is difficult for us to take a view on the value of such linkages to customers. We have not seen any evidence showing how the companies' CWRR relates to what could have been achieved absent the merger. We therefore cannot estimate what 'net' benefits the merger can be expected to generate.

¹¹⁴We asked a water resource expert from WS Atkins to review the CWRR and comments on it made by Ofwat and the EA. His report is available on the CC website.

8.134 In addition, we consider that any benefits to customers from combining water resource plans will come in the form of a lower risk of lower standards of service. The actual benefit to customers will depend on whether, had the combined water resource plan not been in place, customers actually would have suffered lower service standards. We have seen no evidence as to the value that customers place on service standards (eg how much customers would be willing to accept in compensation for a hosepipe ban, or how much customers would be willing to pay to avoid having to use a standpipe).

8.135 We next had to consider whether these net water resource benefits were benefits to relevant customers. At one extreme, the benefits could simply make it easier for management to operate the combined distribution system and produce little noticeable benefit to customers. At the other extreme, the merged company could alter the operating standards it applies to matters such as the planned frequency of hosepipe bans that customers are expected to experience.

8.136 Further, we needed to consider whether any such benefits would flow through to customers within a reasonable period of time. It seems to us that any combined water resource plan would take some time to implement, given that a detailed water resource plan would have to be developed and the construction work undertaken. Although we accepted that we might need to adopt a slightly longer horizon in assessing these benefits than we would usually in assessing the benefits from a merger, it seemed likely that customers would not receive the benefits from the combined water resource plan for about two years.

8.137 Overall, it was our view that the merger was likely to result in some relevant customer benefits as a result of the change it would generate in the companies' incentives to share water resources, the reduced complexity of doing so under a single management team, and in the merged company's ability to plan across existing company boundaries. It was difficult for us to ascribe any scale to these benefits, but on balance, we considered that the benefit to customers was likely to be small.

- *Cost savings*

8.138 We noted that Hastings has calculated that the merger would result in a reduction in the SCP currently enjoyed by MKW, and that this would lead to a reduction in the prices to MKW customers of £[~~3~~] million a year. However, whilst it was true that SEW received a smaller SCP than MKW in PR04, the overall effect on the WACC of combining the two companies would not necessarily be a straightforward reduction of 0.4 per cent. This is because Ofwat made annual revenue allowances of varying amounts to both companies to ensure that companies could raise capital to finance their capital programmes at reasonable rates (termed 'financeability' allowances). Nevertheless, we asked Ofwat to calculate the effect of a reduction in the SCP for MKW in the current financial model. Ofwat told us that the effect would be equivalent to a reduction in the allowed return of £4.3 million at 2002/03 prices over the period from 2005 to 2010.

8.139 However, we noted that Ofwat had said that it was considering whether to make any allowance for financeability in PR09 and had stressed that there was no presumption that the SCP, or any similar allowance, would be made in the future.

8.140 On balance, we thought that there might be a reduction in the cost of capital of MKW, which using Ofwat's current model would feed through into lower prices for customers. However, we could not reach an expectation that Ofwat would use an SCP or any similar financeability allowance in its models in the future (see paragraph

8.127). We therefore could not be sufficiently confident that any such change in MKW's cost of capital would flow through to customers.

- 8.141 We considered that Hastings' estimates of other cost savings that would be achieved from the merger were likely to be conservative. Hastings estimated a £3.1 million a year operating expenditure saving. We have not reached a view on whether further savings in operating expenditure should be possible. However, we noted that Hastings has not quantified capital expenditure savings resulting from the merger, other than to suggest that savings of around [X] per cent a year (equivalent to a saving of around £[X] million over the period 2005 to 2010) might arise as a result of the merger. These savings would result in reduced depreciation charges, and would eventually benefit customers in the form of lower bills. We noted that any cost savings would be ongoing, whereas implementation costs would be 'one-off' in nature.
- 8.142 Hastings said that any operating and capital maintenance expenditure savings would flow through to customers through the periodic review. However, we note that Hastings is anticipating realizing full operating expenditure savings only in 2009/10 so that—absent any remedy—these savings might not flow through to customers until PR14. Similarly, given that Hastings has not yet identified savings in capital maintenance expenditure, these would be unlikely to benefit customers until PR14.
- 8.143 Overall, we conclude that the merger would result in cost savings. We thought it likely that Hastings would achieve savings in operating expenditure of at least £3.1 million a year, as well as further savings on capital expenditure. We expected customers to receive these benefits in the foreseeable future, but we were not persuaded that, in the absence of any remedy that we might impose, they would be fully reflected in the price determination at PR09.

Can we have regard to the effect of any remedy on relevant customer benefits?

- 8.144 We considered whether we could have regard to the effect of any remedy on relevant customer benefits having regard to the criteria set out in paragraph 8.3.
- 8.145 We noted that the full divestiture remedy would not prevent a solution to the prejudice concerned. However, that remedy would prevent the relevant customer benefits from being realized (see paragraph 8.151).
- 8.146 We therefore considered whether the relevant customer benefits which we expect to accrue are substantially more important than the prejudice concerned. We set out our view of the prejudice in Section 7 and of any relevant customer benefits in paragraph 8.143. It is not possible accurately to quantify all of these factors, and we therefore made a qualitative assessment of whether the relevant customer benefits were substantially more important than the prejudice concerned.
- 8.147 The prejudice that we have identified is limited. Taking account of that prejudice, and the relevant customer benefits that we have identified, our judgement was that the benefits we have identified are substantially more important than the prejudice. We therefore consider that we may have regard to the effect of any remedial action on any relevant customer benefits. We have assessed the impact of each of the effective remedy options on relevant customer benefits in paragraphs 8.151 and 8.152.
- 8.148 We have noted Hastings' argument that, given that we consider the relevant customer benefits flowing from this merger to be substantially more important than the prejudice, we should impose a remedy that seeks to address only the adverse

effects of the merger less the value of these relevant customer benefits. However, we did not think that the adverse effects and the relevant customer benefits we have identified could all be quantified in such a way as to make this calculation possible. Our qualitative judgement that the benefits are substantially more important than the prejudice does not involve such a calculation.

8.149 Further, under the Act, we are required to have regard to the need to achieve as comprehensive a solution as is reasonable and practicable to the prejudice and any resulting adverse effects.¹¹⁵ We took the view that it might be reasonable to choose a remedy that addressed the adverse effects rather than the prejudice, and which permitted relevant customer benefits to be preserved, if we considered that the relevant customer benefits were substantially more important than the prejudice. However, even if we were to take that approach, we considered that there would still be a need, under the Act, to achieve as comprehensive a solution as is reasonable and practicable to the adverse effects.

8.150 We therefore considered the impact of the remedies which we have found to be effective on relevant customer benefits, with a view to identifying the most reasonable and proportionate remedy.

Impact of possible remedies on relevant customer benefits

8.151 The full divestiture of either MKW or SEW would clearly result in the loss of all relevant customer benefits arising from the merger.

8.152 Were a price reduction remedy to be imposed, all the relevant customer benefits resulting from the merger would be retained.

Assessment of reasonableness and proportionality

8.153 Having regard to the impact of a full divestiture remedy and a price reduction remedy on relevant customer benefits, we conclude that a price reduction on the terms set out in paragraph 8.96 would be the most reasonable and proportionate remedy in the circumstances of this merger. We thought that such a remedy would effectively mitigate the adverse effects we expect to result from the limited prejudice we have identified, and would at the same time allow relevant customer benefits to be realized.

Summary of conclusions on remedies

8.154 Having considered each of the remedy options included in our remedies notice, we conclude that partial divestiture and maintaining separate data sources remedies would not be effective.

8.155 We conclude that full divestiture would be an effective remedy.

8.156 We conclude that a price reduction remedy, based on a one-off lump sum transfer to all SEW and MKW customers, would mitigate the adverse effects of the merger. We also conclude that, although it would be desirable, there is no cost-effective mechanism for addressing the adverse effects of the merger on customers of other water companies in England and Wales.

¹¹⁵Section 35(6) of the Act as amended by regulation 11 of the Water Mergers (Modification of Enactments) Regulations 2004.

- 8.157 We conclude that a price reduction on the following terms would be practicable and would be effective in mitigating the adverse effects of the merger:
- (a) the price reduction should be given effect by a one-off lump sum transfer from MKW and SEW to their customers through bills for 2008/09;
 - (b) the price reduction should have a total value of £4 million distributed equitably across all customers of MKW and SEW; and
 - (c) the price reduction should be accompanied by a requirement for MKW and SEW to accept a price determination in PR09 that reflects £3.1 million annual operating expenditure savings (as compared with current operating expenditure costs and projections).
- 8.158 We conclude that there are relevant customer benefits resulting from the merger. Cost savings of at least £3.1 million a year will flow through to customers from PR14 at the latest. Although we are not able to put a value on them, we also expect the merger to result in some water resource benefits that will reduce the risk that customers will face a low quality of service.
- 8.159 We conclude that the relevant customer benefits are substantially more important than the limited prejudice in this case. We note that full divestiture would inevitably result in the loss of those benefits, whereas a price reduction remedy would allow the benefits to be realized.
- 8.160 We conclude that a price reduction on the terms set out in paragraph 8.157 is the most reasonable and proportionate remedy in the circumstances of this merger.