The Cost of Privatization in Essential Infrastructure

A Case Study of Thames Water's Financial Distress

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Abstract

Thames Water, the United Kingdom's (U.K.) largest water utility company, is facing a severe financial crisis. As of September 2024, it was burdened by £19.5 billion in debt and ongoing operational failures. This case study examines why Thames Water fell into financial distress, how the crisis might be resolved, and, more broadly, how essential public infrastructure should be owned and managed. Formerly owned by the Australian private equity (PE) firm Macquarie between 2006 and 2017, the utility is now held by a fragmented consortium of institutional investors. The analysis reveals that the PE model, combined with poor regulatory oversight, can lead to misalignment and conflicts of interest among stakeholders. In addition, this case study concludes that any resolution path to address the distressed situation faces significant trade-offs. While it remains unclear whether public or private ownership is more efficient, it is evident that Thames Water is not an isolated case; similar challenges can be observed in other privatized water utilities and infrastructure assets, both from a domestic and international point of view.

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1 Introduction

Thames Water[1] is drowning in debt. By September 2024, it had accumulated more than £19.5 billion in debt, with a regulatory gearing[2] ratio of 84.2%. Serving over 16 million customers, Thames Water is the U.K.'s largest water and sewage service provider. The water utility was put on regulatory watch as concerns mounted over its financial resilience, operational shortcomings, and environmental violations. The crisis deepened following liquidity shortfalls, credit rating downgrades and breaches of license conditions. The company stands apart due to its scale and the visibility of its challenges, which have sparked public backlash and political debate.

Thames Water's financial position threatens a range of stakeholders. While equity investors have been forced to write down their stakes, creditors face growing uncertainty about debt recoveries as the company inches toward insolvency scenarios. In parallel, Ofwat, the sector's economic regulator, is under pressure to uphold financial and operational standards without triggering systemic disruption. For the government, the escalating instability raises the specter of public intervention, as households face rising water bills. As of May 2025, the crisis is still unfolding, offering a chance to observe how the company and its stakeholders respond in real time to the deepening challenges.

This crisis has not occurred in isolation. Since privatization in 1989, the U.K. water sector has undergone significant structural changes, with rising levels of private investment. In the case of Thames Water, much of the spotlight has fallen on Macquarie's ownership of Thames Water from 2006 to 2017. Macquarie, an Australian PE giant, implemented aggressive financial engineering during its holding period, characterized by a complex corporate structure, excessive leverage, and dividend recapitalizations. Prioritizing short-term returns, Macquarie drained the value out of the utility. After Macquarie's exit, ownership shifted to a fragmented consortium of institutional investors, but the company's financial situation only deteriorated.

Financial distress in essential infrastructure is not a new phenomenon; comparisons can be drawn to other cases, such as Southern Water, Cadent Gas Limited, Railtrack, Bulb Energy, and the Indiana Toll Road. These examples reflect deeper issues across the privatized ownership model,

[1] "Thames Water" refers to the group, including the regulated utility company Thames Water Utilities Limited (TWUL) and its parent company, Kemble Water Holdings Limited (KWH or Kemble), along with subsidiaries.
[2] Gearing refers to the net debt (total debt less any cash) relative to the Regulatory Capital Value (RCV), which represents the value of a company's regulated asset base.

where questions are being raised about whether private ownership can support the long-term needs of essential public infrastructure.

This thesis investigates the underlying causes and consequences of Thames Water's financial distress and debt overhang. It further evaluates available resolutions, including restructuring, asset sales, split-ups, or government intervention through a special administration or renationalization. Finally, it considers the broader implications for all stakeholders. A thorough case study analysis of Thames Water seeks to answer the following research questions:

1. *Why did Thames Water fall into financial distress and how should the crisis be resolved?*
2. *How should essential public infrastructure be owned and managed?*

The objective of this thesis is to understand the financial distress of Thames Water in depth, with targeted emphasis on its capital structure, ownership history, and the strategic decisions made under Macquarie's ownership. By doing so, it aims to contribute to a broader understanding of PE's role in managing essential utilities and what that means for the long-term interests of key stakeholders. The research contributes to academic literature on financial distress and infrastructure finance, while also presenting policy insights into different ownership models and regulatory oversight. With real-world implications, the findings aim to provide valuable context for rethinking the governance of essential services to prevent similar crises in the future.

The remainder of this thesis is organized as follows: Section 2 outlines the institutional framework of infrastructure finance and the PE model. Section 3 examines the regulatory environment of the water sector and the corporate insolvency framework. Section 4 details the case study methodology and data sources. Section 5 provides a background on the history of the U.K. water sector. Section 6 presents the Thames Water case, tracing its trajectory and exploring potential solutions. Section 7 discusses the findings in relation to the research questions, and Section 8 concludes with the key takeaways.

2 Institutional Framework

This section outlines the institutional framework relevant to understanding the case. It introduces key concepts in infrastructure finance and PE and examines evidence on the efficiency of private ownership of water utilities.

2.1 Infrastructure Literature

2.1.1 Introduction to Infrastructure

The term infrastructure refers to the essential physical assets, facilities, and equipment that support the functioning of an economy or society (Weber et al., 2011). Infrastructure can broadly be categorized into the following sectors: telecommunications (e.g., internet, fiber optic networks, and satellites), utilities (e.g., water, electricity, and gas), energy (e.g., pipelines, power plants, and renewables), social infrastructure (e.g., schools, healthcare facilities, and real estate), and transportation systems (e.g., roads, seaports, railways, and airports) (Cherif et al., 2023).

Infrastructure assets are often regulated because they provide essential public services. Such assets are characterized by high entry barriers, long economic life cycles, inelastic demand, and operation within natural monopoly markets (Gatti, 2018). These features enable infrastructure assets to generate stable, predictable cash flows. Infrastructure is an attractive asset class for its inflation-hedging qualities, with revenues often linked to factors like inflation, gross domestic product, and population growth (Schmundt et al., 2024). This low cyclicality helps preserve income during economic downturns. Additionally, investors can obtain diversification benefits due to lower correlation with other asset classes (Andonov et al., 2021). Nevertheless, the typical features of infrastructure can leave it vulnerable to poor management, government interference, and opportunistic behavior (Sawant, 2010).

The financial performance of infrastructure as an asset class depends on how it is accessed. Listed infrastructure behaves similarly to utility stocks but can still enhance portfolio diversification (Oyedele, Adair and McGreal, 2014). Unlisted infrastructure typically offers more stable, bond-like cash flows, but can provide strong inflation-linked returns (MarzU.K.i and Newell, 2021). However, private infrastructure funds with shorter time horizons may behave more like PE, with higher cyclicality and volatility (Andonov et al., 2021).

2.1.2 Infrastructure Finance

Infrastructure finance refers to the structuring of long-term funding, typically a mix of debt and equity, to build or maintain essential, capital-intensive assets. Infrastructure is usually funded with a higher proportion of debt than other financing types due to its governance benefits. Debt is considered better in terms of governance than equity, since debt reduces the financial risks by

creating better management incentives (Sawant, 2010). The pressure to meet regular interest payments acts as a disciplinary mechanism, encouraging efficient operations and reducing the waste of cash on unproductive investments (Jensen, 1986).

2.1.3 Investors in Infrastructure

The main investors in infrastructure are institutional investors, such as pension funds, insurance companies, and sovereign wealth funds (SWFs) (Sawant, 2010). Since the early 1990s, Australian and Canadian pension funds have pioneered infrastructure investing, with the highest allocations to the sector (OECD, 2011). Pension funds have long-term liabilities, so they seek out investments that are also long-term and provide steady cash flows (Sawant, 2010). Similarly, SWFs employ an extended investment time horizon, designed to preserve and grow national wealth over time to benefit future generations (Wagner, 2013). PE firms invest in infrastructure assets for many of the same reasons as other institutional investors, but they tend to focus more on financial structuring and operational improvements (Schmundt et al., 2024). Infrastructure assets are difficult to replicate and often operate under government regulation, which protects revenue. However, infrastructure can pose unique challenges for PE investors, as these assets are less liquid, have limited growth potential, and may be exposed to political or regulatory risks (Sawant, 2010).

Over the past 40 years, private investment firms have expanded their focus on essential services through specialist funds or dedicated infrastructure divisions. By early 2025, over 550 infrastructure-focused PE funds were active globally (PEI Group, 2025). This growth was mostly driven by supportive financing conditions, such as low interest rates and quantitative easing in the past decade. The private infrastructure market reached an all-time high of $1.3 trillion in assets under management (AUM) in 2024 (BCG, 2025).

2.1.4 Whole Business Securitization

In infrastructure finance, securitization refers to the process of converting future revenue streams from assets such as utility payments or tolls into tradable securities that can be sold to investors (Sawant, 2010). This allows project sponsors, utilities, or governments to raise upfront capital by leveraging the predictable, long-term cash flows generated by infrastructure assets and using them as collateral (Wagner, 2013). Whole Business Securitization (WBS) is a specialized form of securitization in which an infrastructure company issues debt backed by the stable cash flows of its entire operating business, rather than specific assets (Haaranen and Nisar, 2011). It was first

developed in the U.K. through the securitization of nursing homes in the mid-1990s (Hill, 2002). Traditional debt financing uses financial assets like loans or mortgages as collateral and simply requires the originator to maintain the quality of the assets (Haaranen and Nisar, 2011). In contrast, WBS uses the overall revenue streams and operations as collateral. In order for a WBS to create long-term value, it is essential to develop the operating assets through reinvestment and to maintain strong relationships with customers (Haaranen and Nisar, 2011).

The WBS financing structure is best suited for companies with recurring revenue that is sustainable over time, for instance, infrastructure, utilities, and franchises (Yarett, 2016). A WBS arrangement is generally set up with a Special Purpose Vehicle (SPV) and covenants to align the incentives of the investors and the originator through a bankruptcy-remote vehicle (Haaranen and Nisar, 2011). If an SPV is not used in a WBS, ring-fencing is used to isolate the operating company's assets and liabilities from the holding company's financial risks. In a WBS, ring-fencing provides investors with greater certainty that the cash flows used to repay debt are protected from upstream financial pressures (Dentons, 2018). Securitization allows the originator to separate itself from risks, which enables it to issue debt at a lower cost (Schwarcz, 1994). Therefore, securitization enables companies with lower credit ratings, or no ratings at all, to issue debt through securities that are rated investment grade, thereby lowering the overall cost of funding. While there are clearly benefits to WBS, bondholders depend on the operating business to continue generating returns (Clifford Chance, 2011).

2.2 The Private Equity Model

2.2.1 Introduction to Private Equity

PE firms raise capital through funds typically structured as limited partnerships. A PE fund pools capital from institutional and accredited investors to acquire shares in private companies (Kaplan and Strömberg, 2009). The PE firm acts as the general partner (GP), managing the fund and making investment decisions, while the investors participate as limited partners (LPs). PE firms earn income through management fees and carried interest, which are designed to align incentives with the fund's performance. GPs typically charge an annual management fee of 1.5–2.5% of committed or invested capital, along with carried interest of approximately 20% of the fund's investment profits (Døskeland and Strömberg, 2018).

2.2.2 Value Creation in Private Equity

A key feature of the PE playbook is to maximize return on equity. Some PE returns are attributed to timing, such as buying low and selling high (Gompers et al., 2016). Nevertheless, active ownership is widely seen as the critical driver of value creation (Døskeland and Strömberg, 2018). In general, PE ownership involves short holding periods of 5–7 years on average (Kaplan and Strömberg, 2009). By having a controlling ownership stake, PE firms can directly influence performance and strategic direction during their holding period. Typically, value is created through three strategies, outlined below, which together reflect how PE firms create value beyond what passive ownership alone can offer (Døskeland and Strömberg, 2018).

- *Operational engineering*: PE firms leverage operating and industry expertise to create value in portfolio companies. Examples include cost optimization, strategic repositioning, mergers and acquisitions, and efficiency gains (Kaplan and Strömberg, 2009; Døskeland and Strömberg, 2018; Biesinger et al., 2020).

- *Financial engineering:* PE firms create value by using leverage (Axelson et al., 2009b). This focuses on restructuring and tailoring the capital structure to maximize returns, often through the implementation of innovative financing instruments and processes, or the ability to lower the cost of debt (Finnerty, 1988; Huang et al., 2016).

- *Governance engineering:* PE firms create value for portfolio companies through active ownership and governance (Acharya et al., 2008). This includes reforming governance practices and organizational structures, such as introducing tighter board oversight, offering equity-based incentives to management, and replacing leadership to better align interests and improve performance (Kaplan and Strömberg, 2009; Døskeland and Strömberg, 2018).

2.2.3 Dividend Recapitalization

Dividend recapitalization, where a firm takes on additional debt to pay shareholder dividends, is a common practice in the PE model (Bhardwaj et al., 2025). A recent study by Bhardwaj et al. (2025) found that, while dividend recapitalizations often occur in large, financially healthy firms, they significantly increase the risk of financial distress. The study found that dividend recapitalizations increased the probability of bankruptcy by 31 percentage points over a six-year period, rising from

a baseline rate of just 1.3% to over 32%. Although recapitalizations can enhance deal returns through early cash distributions to GPs, they tend to reduce overall fund performance and adversely affect employees and creditors. This practice reflects a moral hazard, where incentives between GPs and the long-term health of the portfolio company are misaligned (Bhardwaj et al., 2025).

2.3 Private vs Public Ownership of Water Utilities

Water utility companies act as social enterprises, since they deliver essential services to the public (Pollalis and Hagistavrou, 2019). They play a vital role in economic growth and public health by providing clean drinking water and managing sewage and wastewater for households, businesses, and public institutions (Water U.K., 2023). Because water utilities typically operate as natural monopolies due to high fixed costs and the impracticality of market duplication, water is a non-substitutable good, and consumers cannot switch providers or easily choose alternatives (Pérard, 2009). This places a unique responsibility on water providers and regulators, reinforcing the sector's public service obligation (Pollalis and Hagistavrou, 2019).

Braadbaart (2001) defines two hypotheses as the rationale for privatization: (i) the fiscal hypothesis, suggesting that privatization of water utilities could reduce public debt and improve fiscal health; and (ii) the efficiency hypothesis, implying that private entities could increase efficiency compared to the public sector. There are inherent differences in the alignment of incentives between public and private ownership of utilities. Under private ownership, utilities often strive for greater efficiency driven by profit incentives. Private firms can theoretically achieve better efficiency in fully competitive markets (Pérard, 2009). However, water companies are natural monopolies, and the costs of infrastructure prevent effective competition, since duplicating networks or dividing the market reduces economies of scale.

In contrast, public ownership aligns closely with public welfare goals, such as reducing certain types of corruption. While Glaeser (2001) highlights that private ownership can create stronger incentives for corruption, such as bribing politicians to secure supportive regulatory treatment, public ownership may help mitigate these risks. Even so, public ownership is often criticized for inefficiencies, as public utilities may have less incentive to control costs, potentially compromising service quality due to limited competitive pressures.

Ultimately, it is unclear whether public or private ownership is better for public utilities. Many studies have presented inconclusive findings on the effect of ownership structure on water

rates and performance (Zhang et al., 2022). Neither public nor private ownership can be deemed universally superior; the best choice usually depends on the specific economic, regulatory, and social circumstances of each utility.

3 Regulatory Framework

This section outlines the regulatory framework governing the water sector, focusing on Ofwat's responsibilities in overseeing performance and financial resilience. It also gives an overview of the U.K.'s corporate insolvency framework and the special regime for water companies, highlighting the key laws, processes, and protections relevant to addressing financial distress.

3.1 Water Sector Regulation

3.1.1 Overview of Regulatory Framework

The water sector in England and Wales is overseen by several regulatory bodies (see Appendix A). The Department for Environment, Food and Rural Affairs (Defra), a ministerial department supported by 35 agencies and public bodies, develops and enforces policies and sets the overall framework for the sector. The Water Services Regulation Authority (Ofwat), the economic regulator, protects customer interests, promotes efficiency, and ensures financial resilience (Ofwat, n.d.e). The Competition and Markets Authority (CMA) handles appeals for contested Ofwat price determinations and reviews competition-related regulatory decisions. Environmental oversight is conducted by the Environment Agency (EA) in England and Natural Resources Wales (NRW) in Wales. These agencies, which evolved from the former National Rivers Authority, issue permits, set abstraction limits, monitor pollution, and enforce compliance through inspections and penalties. Drinking water quality is regulated by the Drinking Water Inspectorate (DWI), which audits and enforces legal safety standards for drinking water (Defra, 2025). Finally, the Consumer Council for Water (CCW) represents customer interests and handles unresolved complaints (Ofwat, n.d.h).

3.1.2 Economic Regulation

Overview of Ofwat's Role

Ofwat, the economic regulator, is a non-ministerial government department that derives its main powers and duties from the Water Industry Act of 1991 (Ofwat, n.d.d). Ofwat issues regulatory licenses to water companies, which typically last 25 years and set the conditions under which they

operate (Ofwat, 2024a). It is funded through license issuance fees paid by these companies (Ofwat, n.d.b). Persistent issues such as supply failures, pollution incidents, or breaches of statutory duties may prompt Ofwat to impose enforcement orders, levy fines, or require corrective action (Ofwat, 2025a). In the worst case, a company may be declared in breach of its license. In carrying out its statutory duties, Ofwat is required to act in a manner that:

- Protects consumer interests by promoting competition where appropriate;
- Verifies that water companies properly carry out their functions;
- Ensures that companies have the financial resources to fulfill their duties; and
- Supports the long-term resilience of water and sewerage systems (Ofwat, n.d.f).

License Conditions

Ofwat imposes specific obligations on regulated water companies through license conditions (Ofwat, n.d.a). On May 17, 2023, Ofwat's regulatory powers were expanded to enhance oversight of water companies' financial and operational practices under sections 13 and 12A of the Water Industry Act 1991. Under License Condition P26, the modified ring-fencing license conditions require all license holders to maintain at least two, rather than just one, investment-grade issuer ratings from two independent credit rating agencies at all times (Ofwat, 2023a). These ratings can apply either to the corporate family rating[3] (CFR) or, for companies without a CFR, to senior secured or unsecured debt. The three main credit rating agencies serving the water sector are Moody's, Standard & Poor's (S&P), and Fitch Ratings, with Baa3/BBB– representing the lowest tier of investment-grade ratings. Under circumstances where a water company reaches the lowest investment grade (i.e., BBB– or Baa3), a cash lock-up clause is automatically triggered. In practice, this means that the license holders are prohibited from "transferring, leasing, licensing or lending any sum, asset, right or benefit to any Associated Company" without prior approval from Ofwat (Ofwat, 2023a). In addition, a new License Condition P30 came into effect, requiring water companies to declare or distribute dividends in accordance with an established dividend policy.

5-Year Price Control Review

Due to limited competition and high entry barriers, water companies could exercise considerable monopoly power in the absence of price limits (Ofwat, n.d.f). To prevent this, Ofwat conducts five-

[3] CFR is a long-term credit rating that reflects the credit risk of a company as a single consolidated entity.

year price control reviews, referred to as Asset Management Periods (AMPs), that set binding price caps, performance targets, and required investment levels. As part of each regulatory cycle, water companies must submit business plans detailing their intended activities, costs, and performance commitments. Ofwat assesses these submissions and issues final price determinations, which form the basis for the companies' revenue allowances.

The Role of the WACC

A central component of the price control framework is the determination of the allowed rate of return on capital, which Ofwat calculates using a notional Weighted Average Cost of Capital (WACC). The WACC reflects what Ofwat considers to be a reasonable rate of return that water companies should earn on their regulatory capital value (RCV). It aims to strike a balance between attracting capital for long-term investment and ensuring affordability for consumers. This allowed return serves as the foundation for setting the prices that water companies can recover from customers. Once Ofwat sets the WACC in a price review, it remains fixed for the duration of the five-year period (e.g., PR24 for the 2025–30 period).

Ofwat sets the WACC based on a hypothetical, efficient company rather than assessing each firm individually. This WACC is based on a notional capital structure, specifically a single gearing level for the entire sector (Ofwat, 2024f). Importantly, this WACC is exclusively used for the price control determination and is not binding. Water companies have the freedom to deviate from Ofwat's gearing level, subject to the constraints of (i) the price cap regime set by Ofwat and (ii) the conditions of their operating licenses and wider obligations. In practice, a water company's actual WACC, or true cost of capital based on its specific debt and equity mix, can be higher than Ofwat's notional WACC. While Ofwat has historically set the WACC around 2.96–5.62% between 2009 and 2024, the market cost of capital for water companies is higher (Blanc-Brude, Gupta and Whittaker, 2023). This divergence has important behavioral implications. For instance, if a water company can borrow at interest rates below the regulatory cost of debt, or if shareholders accept equity returns below the regulatory assumptions, it can increase leverage beyond the notional level to boost returns. This creates a regulatory arbitrage where water companies can take on more debt than the notional level while staying within the allowed return framework set by Ofwat.

To calculate the cost of equity, Ofwat uses the Capital Asset Pricing Model, deriving point estimates for key components such as the risk-free rate, beta, and total market return (Ofwat, 2022).

The cost of debt is assessed separately and is based on observable market rates across the sector. A limitation with this regulatory framework is that point estimates may prove inaccurate and financial conditions can shift over time. Changes in interest rates, regulation, and public sentiment can all affect the market WACC (Blanc-Brude, Gupta and Whittaker, 2023). Further, using a notional firm presents issues as it does not reflect individual company differences, such as their risk profiles, actual capital structures, and betas. This all culminates in a potentially flawed WACC.

Monitoring Financial Resilience

In 2015, Ofwat introduced a financial monitoring framework to strengthen oversight in response to a pattern of weaker financial resilience across the sector. In its *Monitoring Financial Resilience Report*, Ofwat conducts annual assessments of key financial metrics (e.g., regulatory gearing, dividend yield, credit rating, adjusted interest cover ratio[4] (ICR), and post-tax return on capital) and license compliance, aimed at increasing transparency and accountability (Ofwat, 2015a). Ofwat must be vigilant to both financial and non-financial indicators of deteriorating resilience, as early recognition is crucial for an appropriate regulatory response. The Government Commercial Function (2023) has defined indicators to identify early signs of financial distress. Relevant metrics for Ofwat include high gearing, increasing borrowing costs, loan defaults, covenant breaches, credit downgrades, low adjusted ICR, and liquidity shortfalls. Beyond that, not all distress manifests in financial data. Other warning flags, such as deteriorating operational performance, high employee turnover, or the sudden departure of senior executives, can offer insight into internal challenges. Further, weak governance or poor risk management may erode a company's ability to respond to shocks long before the numbers reflect the damage. Together, these indicators provide regulators like Ofwat with a fuller picture of a firm's resilience or fragility.

3.2 U.K. Corporate Insolvency Framework

3.2.1 Key Laws and Regulations

The primary legislation governing corporate insolvency in the U.K. is the Insolvency Act 1986 (Baker McKenzie, 2016). The Act does not explicitly define the term insolvency; instead, it uses the phrase "inability to pay debts." Under Section 123 of the Act, a company is deemed unable to

[4] The adjusted ICR is similar to a standard interest coverage ratio but measures the ability to make interest payments after covering expensed costs and RCV run-off.

pay its debts if it is proved to the court's satisfaction that it cannot pay its debts as they fall due, assessed via the cash-flow test (Insolvency Act 1986, s. 123). The Act also states that a company is balance-sheet insolvent if its liabilities exceed its assets, including prospective and contingent liabilities. In practice, either a cash-flow or balance-sheet insolvency is sufficient to trigger formal insolvency proceedings. The Act, as amended by later laws, provides the legal basis for insolvency procedures (Baker McKenzie, 2016). Significant reforms were introduced by the Enterprise Act 2002, which refocused the regime toward business rescue by promoting administration over receivership, and most recently, by the Corporate Insolvency and Governance Act 2020. Importantly, the U.K. system is court-supervised to varying degrees and supported by regulatory bodies to ensure the proper conduct of insolvencies.

3.2.2 Out-of-Court Procedures

In practice, firms may first seek consensual workouts or refinancing. This involves engaging key stakeholders, such as shareholders, creditors, regulators, and sometimes credit rating agencies or legal advisors (GCM, 2023). These voluntary approaches are best suited to the early stages of distress, when there is still flexibility for negotiations. Typically, the starting point is a credible turnaround plan outlining the recovery strategy and revisions to the business model. Alongside this, several actions can be taken to de-escalate the situation and shore up liquidity:

- *Equity restructuring*: Equity injections or ownership transfers (e.g., via sale or merger) to strengthen the balance sheet and meet anticipated shortfalls.
- *Debt restructuring*: Refinancing existing loans or renegotiating debt terms (e.g., maturity extensions, interest rate adjustments) to improve cash flow.
- *Debt-for-equity swap*: Asking lenders to write off part of the debt and convert it into equity or other subordinated instruments to reduce leverage.
- *Asset sale*: Divesting non-core or surplus assets to generate cash for debt repayment.

These tools are not materially different from those used in other sectors and industries. However, because water companies are regulated and responsible for delivering essential public services, they are subject to closer regulatory scrutiny. Ofwat adopts a supervisory role by monitoring developments and setting expectations.

3.2.3 In-Court Procedures

General Insolvency Regimes

If consensus among stakeholders cannot be reached, or if financial distress is too severe, several statutory procedures can be employed (Mills and Reeve LLP, 2022). U.K. law provides several formal insolvency regimes for distressed companies: Administration, Company Voluntary Arrangements (CVAs), Receivership, Liquidation, Schemes of Arrangement, Restructuring plans, and Moratoriums. Appendix B outlines each regime and applicable key legislation.

Special Insolvency Framework for Water Companies

Privately owned regional water companies operate under a strict regulatory regime to protect consumers and the environment. In addition to the general insolvency law, water companies are subject to special measures for handling financial distress or failure. A special administration is an insolvency process tailored for utilities and public-interest sectors, where ensuring uninterrupted service is paramount (Hill et al., 2024). The water industry has a bespoke insolvency procedure known as the Water Industry Special Administration Regime (WISAR).

The WISAR was previously governed by Part IV of the Water Industry Act 1991, and the Water Industry (Special Administration) Rules 2009 (Hill et al., 2024). Due to recent legislative changes, it is now set out in The Water Industry (Special Administration) Regulations 2024. These reforms have aligned the legislation with modern insolvency practices allowing special administrators to use Part 26 or Part 26A mechanisms as part of the framework.

Only the Secretary of State or Ofwat, with the Secretary of State's consent, can apply to the High Court for a special administration order (Hill et al., 2024). Unlike normal insolvency, creditors have no direct right to initiate this process. The WISAR functions as a public-interest administration, often described as a temporary nationalization. Once the court makes the order, a special administrator is appointed to rescue the company as a going concern. Notably, secured creditors also cannot appoint an administrative receiver or their own administrator once a WISAR is underway (Freshfields Bruckhaus Deringer LLP, 2024). As of now, no water company in the U.K. has entered special administration (Ofwat, 2015b).

4 Methodology

4.1 Case Study Method

Thames Water represents a complex case of financial distress. Given the real-time nature of the crisis and the need to understand how various factors have affected the company over time, the case study method is appropriate. As Yin (2003) notes, case studies are prudent when trying to answer the "how" and "why" questions in dynamic, real-world events. The case study method allows for an in-depth exploration of the ways in which private ownership may contribute to financial distress within a large, regulated water utility.

4.2 Data Collection

This case study relied on documentation and archival records, as outlined in Yin's (2003) six sources of evidence. These sources are appropriate given the public nature of Thames Water, which makes relevant materials accessible. The absence of direct access to internal stakeholders or proprietary data required high-quality secondary sources. Drawing from a diverse number of sources, including annual reports, regulatory filings, price control determinations, and corporate filings from Companies House, allowed for triangulation to validate our findings (Yin, 2003). Moreover, parliamentary hearings and government press releases provided context on political and regulatory progress. Media coverage from credible outlets (e.g., *Financial Times* and *Bloomberg)* offered current news updates and interviews. Press statements from owners and investors were used to showcase stakeholder views. Aggregated financial data (e.g., *S&P Capital IQ*) was used to track financial metrics. Finally, academic literature helped situate the case within broader institutional frameworks. The combination of materials enables a robust analysis of the case.

4.3 Validity and Research Quality

To ensure research quality, this case study employed triangulation across financial, regulatory, and journalistic sources. The data used was public, credible, and independently verifiable. The data was organized chronologically and thematically to support a structured and consistent analysis. The use of documentation and archival records offers strengths such as access to exact figures, detailed reporting, and broad coverage. However, potential weaknesses include reporting bias and limited access to internal or proprietary information (Yin, 2003). The absence of complementary sources

limits the study's validity. Attempts to conduct interviews with relevant company representatives were unsuccessful. Interviews with key stakeholders, such as employees, executives, journalists, customers, and regulators could have strengthened the findings. Reliance on official documents provided limited insight into the role of investors, board members, and internal decision-making. As a result, the analysis relies solely on public sources, which may narrow the depth of the analysis.

5 Case Background

This section overviews the U.K. water sector's evolution since privatization and outlines its historical market context. It also highlights the regulatory, ownership, and financing changes that are central to understanding Thames Water's financial crisis.

5.1 History of the U.K. Water Sector

5.1.1 Pre-1973 Fragmentation

Understanding the U.K. water sector requires tracing its evolution from local fragmentation to centralized integration and ultimately to privatization in 1989 (Ofwat, n.d.d). Until the mid-20th century, water and sewerage services in the U.K. were delivered by more than 1,000 local authorities and statutory bodies, each operating independently and with limited coordination. During the post-war period (1945–1970), the government sought to consolidate these services to achieve economies of scale and mobilize funding for investments (Ofwat, n.d.d).

5.1.2 Creation of Regional Water Authorities

The Water Act of 1973 marked a major shift in how England and Wales managed their water systems. It led to the establishment of 10 Regional Water Authorities (RWAs), which integrated water supply, sewerage, and resource management under public ownership (Ofwat, n.d.d). The RWAs were supposed to operate on a cost recovery basis by funding investment through the income they generated and borrowing from the government. There were three main issues with state-owned water authorities: (i) strict central government controls, (ii) a large amount of inherited debt, and (iii) economic instability (Ofwat, 2006). These limitations led to chronic underinvestment in critical infrastructure, paving the way for reform and privatization in the coming years.

5.1.2 The Road to Privatization

By the early 1980s, it had become evident that the publicly owned RWAs were struggling to maintain the U.K.'s ageing infrastructure. Much of the water and wastewater networks, especially water mains and sewers, dated back to the Victorian era, with some pipes remaining in use after more than a century. As the system aged, leakage worsened, and the outdated network contributed to rising pollution in rivers and coastal waters (Bakker, 2001). The situation was exacerbated by obligations under new environmental regulations set by the European Union (EU), formerly the European Community. Much stricter legislation on water, urban wastewater treatment, marine, flooding, drinking water, bathing, and sewage sludge required modernization of the network. In the mid-1980s, the U.K. was prosecuted by the EU for failing to comply with these directives. According to estimates at the time, the sector needed around £24–£30 billion in investment over the coming decades to meet EU standards and address deferred maintenance (Hassan, 1998).

Facing growing pressures and reluctance to increase public spending, privatization was seen as a necessary step, driven by broader ideological and political market forces (Pollalis and Hagistavrou, 2019). By the mid-1980s, Prime Minister Thatcher's Conservative government had privatized several state-owned enterprises that operated in natural monopoly markets. The privatization of telecoms, gas, and airports in the 1980s, followed by electricity and rail in the 1990s, reflected a broader neoliberal policy agenda (Vickers and Yarrow, 1991; Ofwat, 2006). The rationale behind the decision centered on the fiscal and efficiency hypothesis (Braadbaart, 2001).

5.1.3 The Privatization

In 1989, the water and wastewater sector in England and Wales was privatized. The government transformed the 10 RWAs into limited private companies and raised approximately £7.6 billion from their flotation on the London Stock Exchange (LSE) (adjusted to 2003–2004 prices). To attract investors, the state wrote off all existing long-term debt owed by the previous RWAs, estimated at £4.9 billion, and injected £1.6 billion in cash, dubbed the "green dowry," to strengthen the balance sheets and enable future investment (Ofwat, 2006). Additionally, the state granted special exemptions from profit taxation and capital tax allowances worth £12 billion. In return, these privatized firms were granted exclusive regional licenses and became monopolies responsible for supplying water and sewage services to the public (Ofwat, 2006). Since then, the sector has been restructured through mergers, divestments, and license changes. Today, there are 16 licensed

companies, which are divided into 11 water and sewerage companies (WASCs) and 5 water-only companies (WOCs). The WASCs provide both water supply and wastewater services, managing the full water cycle from source to sanitation. The WOCs supply drinking water in areas where wastewater services are delivered by a separate provider (see Appendix C) (Ofwat, 2024h).

5.2 Impact of Privatization

5.2.1 The Development of Water Companies

Shift from Public to Private Ownership

Following privatization, there have been a number of trends within the privatized ownership model. From the late 1990s and onwards, a large proportion of water companies moved from being publicly listed to privately controlled (Defra, 2025). As of 2024, only three water companies remain listed on the LSE: Severn Trent Plc (parent of Severn Trent Water and Hafren Dyfrdwy), Pennon Group Plc (parent of South West Water, Bristol Water, and SES Water), and United Utilities Group Plc (parent of United Utilities Water). All other companies are privately held or not-for-profit entities. Ownership of the water companies is predominantly in the hands of international investors. Around 72% of the sector's equity is controlled by investors based in several foreign countries, while U.K.-based ownership only accounts for 10% (Leach et al., 2022). The sector features extensive involvement from PE funds, infrastructure funds, SWFs, pension funds, and utility conglomerates. Appendix D provides a detailed overview of ownership structures.

Corporate and Financing Structures

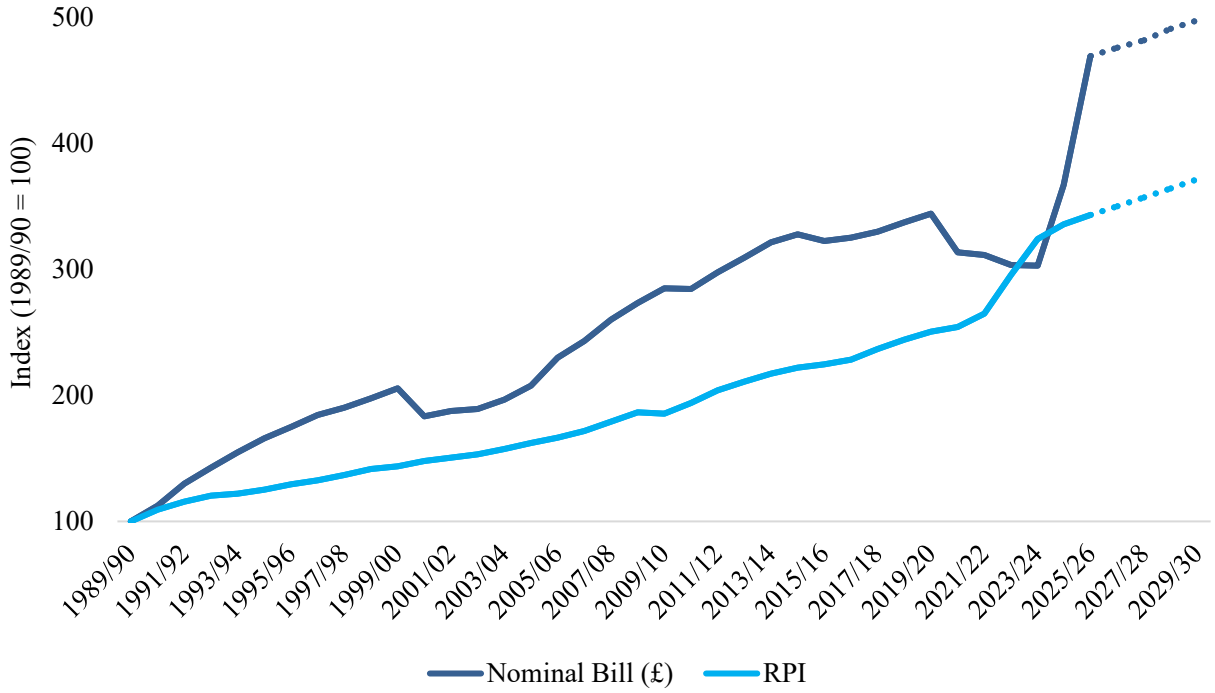
Privately owned companies are often more complex, organized through chains of holding companies and SPVs, with separate legal entities responsible for financing or treasury functions (Bayliss et al., 2023). These structures are often designed to facilitate financing strategies, such as intra-group lending and upstream fund transfers through dividends, management fees, or interest payments. In many cases, the ownership of water companies has been traced to offshore holding companies registered in jurisdictions such as Jersey or the Cayman Islands (Bayliss and Hall, 2025). There has been a clear transition from equity-only financing towards more debt-heavy models, with the widespread adoption of WBS. As noted in Section 2.1.4, WBS allows water companies to have high gearing levels while still maintaining investment grade ratings, as required under their licenses. In the 2000s, many companies adopted WBS to fund operations and

investments at a lower cost (Defra, 2025). By now, roughly half of the regulated water companies have a WBS in place to ring-fence the regulated and licensed utility company (see Appendix D).

Price Development

In the first year after privatization, pre-tax profits doubled, and by 1997-1998 they had increased by 142% in real terms, driven in part by a supportive price-cap regime set by Ofwat (Lobina and Hall, 2001). Furthermore, the nominal water bills have soared by approximately 367% up to 2025/26 and are 1.34x higher than the Retail Price Index (RPI). Figure 1 illustrates the difference between indexed average water bills and RPI in 1989/90–2029/30.

Figure 1. Indexed Average Water Bills and Retail Prices (1989/90–2029/30)



Note: Dotted lines represent forecasted bills. Household bills are projected to reach £563 in 2025/26 and £597 by 2029/30 in nominal terms. RPI is assumed to be 2% between 2025/26–2029/30. Average water bills apply to WASCs. (Ofwat, 2021; Ofwat, 2019; Ofwat, 2025b; ONS, 2025)

Ofwat recently announced that under the new AMP8 price controls, starting on April 1, 2025, average annual household water bills will increase by £123, from £440 in 2024/25 to £563 in 2025/26. This is equivalent to an additional £10 per month or a 26% increase, which marks the steepest rise since privatization. By 2029/30, nominal average household bills are projected at £597, representing a 36% rise from 2024/25 levels (Ofwat, 2025c).

Financial Resilience

This revenue growth has been accompanied by a sharp rise in debt levels. As of March 31, 2024, the sector had a total net debt of £70 billion (Ofwat, 2024b). Historically, the average gearing ratio in the water sector rose from 4% in 1991 to 72% by 2009 (Defra, 2025). Although it stabilized during the 2010s, it still remained high, with the industry average still hovering around 70% in 2024. Since 2022, the water sector has faced a tougher operating landscape, driven by deteriorating macroeconomic conditions. Interest rates rose from a historically low 0.1% at the end of 2021 to 5.25% by mid-2024 (Defra, 2025). The magnitude of this has been amplified by the widespread use of inflation-linked debt (e.g., index-linked bonds, loans, and interest rate swaps) across the sector. As of March 31, 2024, all water companies were financed with inflation-linked debt, accounting for 51.7% of total borrowings in the sector (Ofwat, 2024b). The inflation effect on the debt value varies depending on the share of inflation-linked debt, whether it is tied to RPI or CPI/CPIH[5], and the inflation rate during the period. In response to these growing concerns, Ofwat reduced the notional gearing ratio from 60% to 55% for AMP8 (see Table 1) (Ofwat, 2024f).

Table 1. Ofwat Price Review Parameters (2009-2024)

Price Review	AMP	Notional Gearing	Cost of Equity	Cost of Debt	WACC
PR09	2010–2015	57.50%	7.62%	4.11%	5.62%
PR14	2015–2020	62.50%	6.48%	3.39%	4.55%
PR19	2020–2025	60.00%	4.19%	2.14%	2.96%
PR24	2025–2030	55.00%	5.10%	3.15%	4.03%

Note: Ofwat did not publish CPIH-real values for PR09/PR14. These figures have been adjusted retrospectively. For example, the PR09 WACC (gross of tax shield) was 5.1%, adjusted to 5.62% on an RPI/CPIH basis.
(Defra, 2025)

A handful of water and sewerage companies operate well above Ofwat's notional gearing of 55%, with historical levels ranging between 57.7–62.5%. Water companies with WBS have seen substantial hikes in debt levels. For instance, after adopting WBS in 2002, Anglian Water saw a 67% net debt increase (Bayliss, Van Waeyenberge and Bowles, 2023). Similarly, Yorkshire's net debt rose from £1.5bn to £2.4bn in 2006, corresponding to a 60% rise. Thames Water saw its gearing ratio jump from 52% to 72% following the introduction of WBS in 2007, and Affinity Water's net debt increased by 61% in 2013. However, as of March 31, 2024, the pioneer of WBS, Dŵr Cymru, had one of the lowest gearing levels at 61.1%. The company had shifted to a not-for-

[5] Consumer Prices Index (CPI); CPIH includes housing costs.

profit model when it was acquired by Glas Cymru in 2001, following the financial collapse of its previous owner. Under this model, the company has no shareholders and reinvests surplus revenue for the benefit of customers, which differentiates it from other players (Defra, 2025).

Table 2. Key Financial Metrics

Company	Closing RCV £m	Net Debt £m	Regulatory Gearing	Adjusted ICR	Credit Rating[1]
Affinity Water	1851.1	1392.0	75.2%	0.25	Baa1/BBB+
Anglian Water	10675.7	7355.6	68.9%	1.29	A3
Dŵr Cymru	7475.7	4567.7	61.1%	0.65	A3/A-
Hafren Dyfrdwy	118.0	71.2	60.3%	-2.17	BBB+
Northumbrian Water	5442.7	3820.8	70.2%	0.77	Baa1/BBB+
Portsmouth Water	255.7	127.9	50.0%	1.10	Baa2
Severn Trent Water	11885.6	7250.2	61.0%	0.94	Baa1/BBB+
South East Water	1736.1	1350.7	77.8%	0.92	Baa3/BBB
South Staffs Water	540.5	371.3	68.7%	1.44	Baa2
South West Water	4837.8	3304.2	68.3%	0.74	Baa1/BBB+
Southern Water	6787.6	4859.9	71.6%	-0.89	Ba1/BBB-
SES Water	347.4	274.8	79.1%	-0.38	Baa1
Thames Water	19946.8	16216.7	81.3%	1.25	Caa1/CC
United Utilities	13969.1	9359.3	67.0%	1.30	A3/BBB+
Wessex Water	4305	2961.8	68.8%	0.73	Baa1/BBB+
Yorkshire Water	9132.2	6264.7	68.6%	2.47	Baa2/A-
***Total / **Average**	**99 307.0***	**69 548.7***	**68.6%****	**0.65****	-

Note: All financial data are as of March 31, 2024, except for the credit rating, which is as of November 15, 2024.
[1] Credit ratings are based on Moody's and S&P ratings.
(Ofwat, 2024b)

As displayed in Table 2, high reliance on debt is compounded by an average adjusted ICR of 0.65 for the sector. Based on Moody's generic ratio guidance for U.K. water utilities, an adjusted ICR of ≥ 1.4 and gearing ratio of ≤ 75% are expected to maintain an investment grade rating level of Baa2 (Moody's, 2024). The current financial metrics collectively paint a picture of an industry under financial pressure. While many companies still retain low investment-grade ratings, these are often marginal. For instance, South East Water (Baa3/BBB) and Affinity Water (Baa1/BBB+) sit just one or two notches above speculative grade. Southern Water also shows signs of financial vulnerability, holding a non-investment grade rating of Ba1 from Moody's, despite retaining investment-grade status from S&P (BBB–). Notably, Thames Water is a clear outlier. Despite being the largest water and sewerage company in the sector by RCV, it holds two non-investment grade ratings (Caa1 from Moody's and CC from S&P), the lowest among its peers. Its adjusted ICR of

1.25 and gearing exceed 80%, both well outside the parameters typically required for financial resilience. Thames Water now faces a credible risk of regulatory intervention or, in extreme circumstances, the loss of its operating license. In the PR24 final determinations, Ofwat expressed concern about the financial resilience in the water sector, emphasizing that gearing ratios above 70% may not be sustainable in the long term (Ofwat, 2024f).

Dividend Payouts and Underinvestment

Besides elevated gearing ratios, nearly all post-tax profits have been distributed to investors through large-scale dividends (Bayliss and Hall, 2020). As of March 31, 2024, water companies have paid out around £52 billion in dividends to shareholders since privatization, almost equivalent to the total net debt accumulated during the same period (Ofwat, n.d.g). For context, only about £190 billion was invested in infrastructure projects, raising concerns about long-term infrastructure neglect. In contrast, data shows that publicly owned Scottish Water invested approximately 35% more per household than English and Welsh companies from 2002 to 2018 (Yearwood, 2018).

Water Demand, Aging Assets, and Climate Change

The water sector faces intensifying long-term pressures. Global freshwater demand is projected to increase by 20–30% by 2050, driven by population growth, urbanization, climate change, extreme weather events, and shifting patterns of water consumption (UNESCO, 2019). In the U.K., the population grew by approximately 6.6%, from 64.1 million in 2013 to 68.3 million in 2023, with England and Wales experiencing the fastest growth rates at around 1% (ONS, 2024). Projections suggest that by 2050, water demand in England alone could surpass supply by up to 3.1 billion liters per day (NAO, 2020). Meanwhile, many companies rely on aging infrastructure such as pipe networks, pumping stations, and treatment facilities. Today, many utilities are grappling with aging infrastructure after years of underinvestment (Defra, 2025).

In parallel, the sector faces rising incidents of pollution, such as sewage discharges into rivers, lakes, and coastal areas, prompting public outcry and increased regulatory scrutiny. Despite targeted efforts to reduce water loss by 23% over the next three years and by 50% before 2050, over 20% of treated water is still lost in leakage (Ofwat, 2024g). Likewise, the sector committed to reducing pollution incidents by 30% between 2020 and 2025, but it has so far achieved only a 2% reduction, with a rise in incidents recorded in 2023 (Ofwat, 2024d). Altogether, these

challenges raise concerns about whether the sector can stay affordable while meeting its environmental and social responsibility to the public.

6 Thames Water

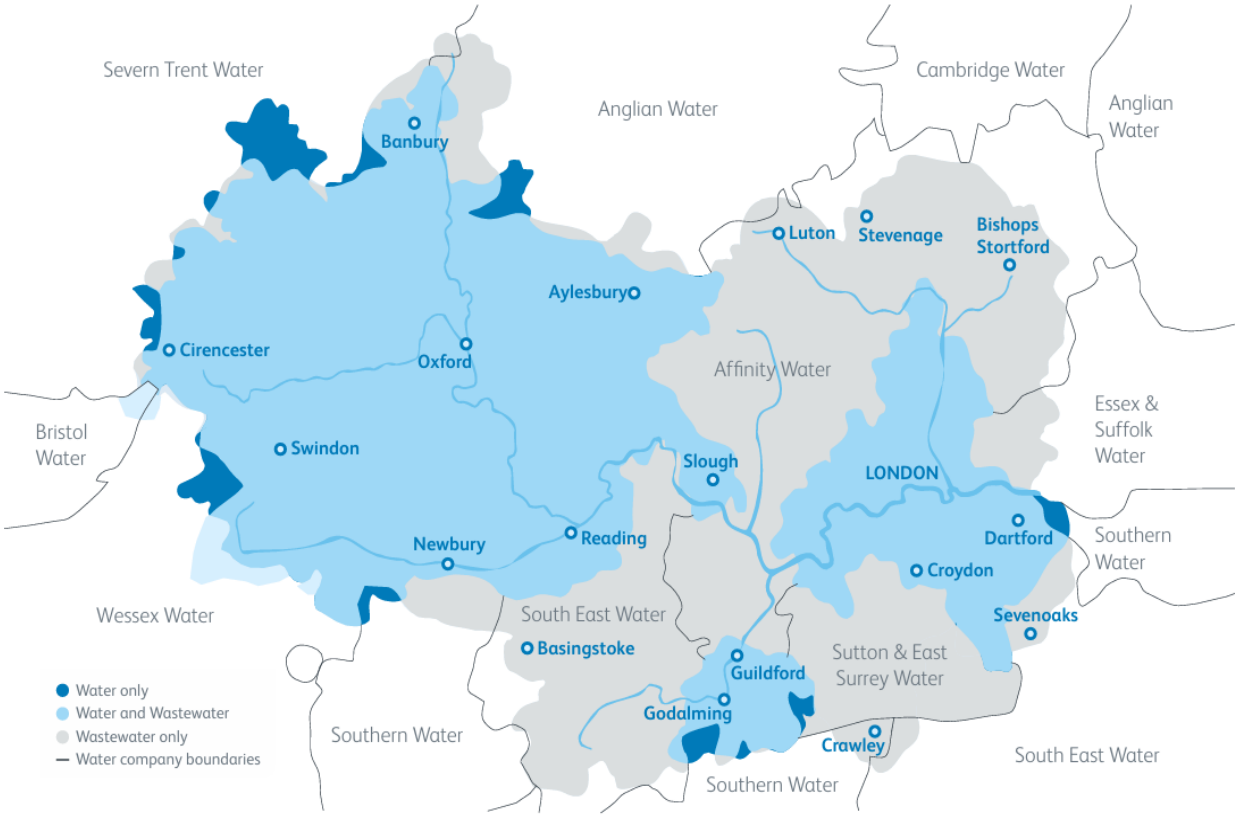
This section examines how Thames Water descended into financial distress by reviewing its history, Macquarie's private equity ownership, and subsequent institutional ownership. It then details financial distress events, potential rescue solutions, and key developments as of 2025.

6.1 Introduction to Thames Water

6.1.1 Company Background

Thames Water is the largest provider of water and sewage services in the U.K., with a mission to "deliver life's essential service so our customers, communities and the environment can thrive" (Thames Water, n.d.a). The company serves a population of approximately 16 million people, nearly a quarter of the population in England, mainly in Greater London and the Thames Valley.

Figure 2. Thames Water's Supply Area



(Thames Water, 2023a)

The supply area follows the River Thames from Gloucestershire in the west to Essex and Kent in the east, covering rural, suburban, and metropolitan areas (see Figure 2). It employs over 8,000 individuals and operates a complex network that includes 88 water treatment works and 352 sewage treatment facilities (Thames Water, n.d.a). On a daily basis, Thames Water supplies 2.5 billion liters of potable water and treats 5.1 billion liters of wastewater.

6.1.2 Ownership History

The Thames Water Authority was founded under the Water Act of 1973 as one of 10 regional water authorities in the U.K. After a period of state control, the water industry was privatized, and Thames Water Plc was subsequently floated on the LSE. In 2001, the German utility giant RWE AG acquired Thames Water for £6.1 billion (CNN Money, 2000). At the time, RWE was Europe's third-largest utility company and was looking to expand its international footprint (The New York Times, 2005). Nonetheless, the acquisition proved challenging, and it was later sold to the Australian infrastructure investor Macquarie Group in 2006. Since 2017, Thames Water has been controlled by a consortium of private institutional investors (see Table 3 for an ownership timeline).

Table 3. Ownership History Timeline

Period	Ownership	Type of Ownership
1973–1989	U.K. Government	State
1989–2001	Public shareholders	Publicly listed
2001–2006	RWE AG	Foreign corporate
2006–2017	Macquarie Asset Management	Private equity
2017–present	Investor Consortium	Institutional

(Ofwat, 2006; Macquarie Group, 2023)

6.2 Macquarie's Acquisition and Ownership

6.2.1 Background on Macquarie

Macquarie Asset Management (Macquarie), a division of Macquarie Group Limited, played a key role in this case. Macquarie is an Australian global investment firm that manages assets across public and private markets. Founded in Australia in 1969, it today operates in 24 markets with over 2,400 employees. The firm manages a portfolio of over 170 infrastructure companies and oversees approximately $916.8 billion in AUM (Macquarie Group, n.d.a). In fiscal 2024, Macquarie Asset

Management contributed approximately 18% to Macquarie Group's total net profit, with a large presence in infrastructure (Macquarie Group, 2024).

Macquarie specializes in infrastructure by building, investing, and managing assets across sectors (Macquarie Group, n.d.b). Between 2010 and 2023, Macquarie was ranked the world's largest infrastructure manager measured by aggregate capital raised, but as of 2024, it dropped to fourth place (see Table 4) (Gourntis, 2024). Macquarie has a strong presence in the U.K., owning a diverse portfolio of assets in transportation, renewable energy, energy, utilities, and digital infrastructure (see Appendix E for a detailed overview) (Macquarie Group, n.d.c). To fund acquisitions, Macquarie works with institutional investors, such as pension funds, that prioritize steady, long-term returns to match their future financial obligations (S&P Capital IQ, n.d.).

Table 4. 10 Largest Infrastructure Fund Managers (2024)

Rank	Fund Manager	Headquarters	Capital raised ($m)
1	Global Infrastructure Partners, a part of BlackRock	New York	113,796
2	Brookfield Asset Management	Toronto	99,147
3	KKR	New York	82,589
4	Macquarie Asset Management	London	80,430
5	EQT	Stockholm	58,709
6	DigitalBridge	Boca Raton	50,072
7	Stonepeak	New York	47,809
8	Blackstone	New York	44,333
9	Antin Infrastructure Partners	Paris	27,228
10	Copenhagen Infrastructure Partners	Copenhagen	24,900

(Infrastructure Investor, 2024)

6.2.2 The Acquisition of Thames Water

During RWE's ownership, Thames Water's performance lagged behind its peers, and it repeatedly failed to meet leakage reduction targets (Cutler, 2023). With a leakage rate of about 33%, the highest among major U.K. water firms, it lost enough water daily to fill 900 Olympic-sized swimming pools. These setbacks led RWE to divest its water assets in 2006 to focus on electricity and gas instead (Harrison, 2006). On October 16, 2006, Kemble Water Holdings Limited, a group of investors led by Macquarie, won the bid for Thames Water in a competitive auction. The bidding process attracted interest from several high-profile groups. One offer came from a partnership between the Gulf State of Qatar and the Swiss investment bank UBS. PE firm Terra Firma and Australian energy company Alinta also took part in the auction (Saigol and Bream, 2006).

Ultimately, the acquisition closed on December 1, 2006, for a total enterprise value of £8.5 billion, which included £2.3 billion in equity and £6.2 billion in debt from external lenders. The acquiring consortium paid this amount to RWE when the sale was finalized. At the time, Thames Water's regulated asset base was valued at £6.5 billion (Macquarie Group, 2023).

In October 2006, Macquarie raised several infrastructure funds, using a portion of that capital to purchase Thames Water from RWE. The primary funds involved in this acquisition were the Macquarie European Infrastructure Fund (MEIF), a €1.5 billion fund, and the Macquarie European Infrastructure Fund II (MEIF II), a €4.2 billion fund. In addition to other Macquarie capital, these funds contributed £1.1 billion toward the purchase price, equating to roughly a 48% stake at the time. The rest of the equity came from international funds that invested directly in Thames Water, and many of these investors still hold their stakes in the company today. Macquarie invests client capital, meaning that most of the financial returns flow to a mix of institutional investors such as pension funds, SWFs, and insurance companies across the U.K., Europe, and other regions. To ensure alignment with LPs, Macquarie contributed approximately 1% of the funds invested in Thames Water (Macquarie Group, 2023).

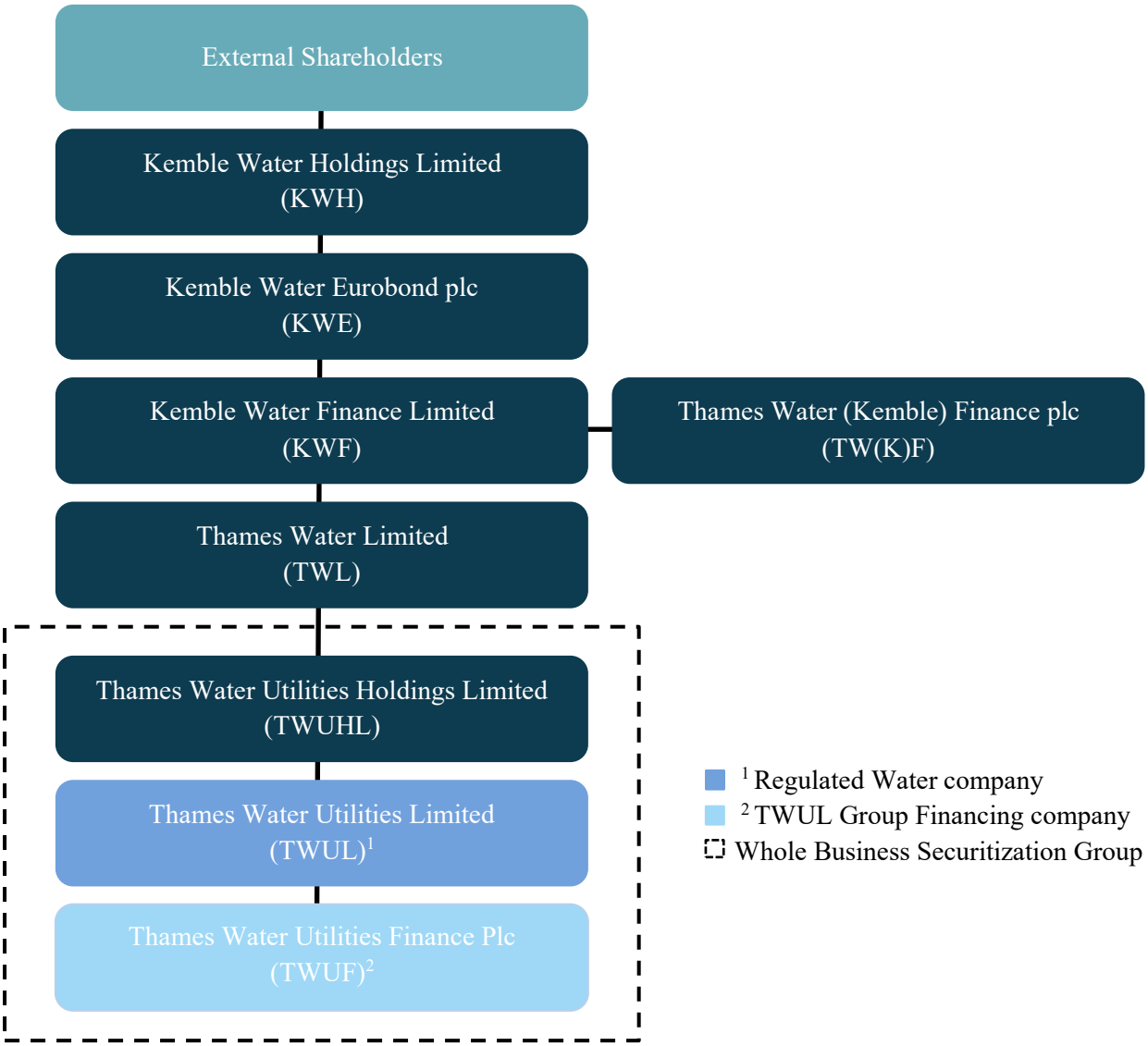
6.2.3 Financial Engineering

Corporate Structure

Following its acquisition, Macquarie restructured the company, introducing a complex corporate structure (see Figure 3). This holding company structure allows dividends and intercompany loans to be routed through its multiple entities, each with different regulatory obligations (Thames Water, n.d.d). At the top is Kemble Water Holdings Limited (KWH or Kemble), the ultimate parent company where external shareholders hold their equity stake. It was established in 2006, at the same time as several non-operational intermediate entities which sit beneath: Kemble Water Eurobond plc (KWE), Kemble Water Finance Limited (KWF), Thames Water (Kemble) Finance plc (TW(K)F), and Thames Water Limited (TWL). These entities exist primarily to raise debt and move funds within the entire group (Thames Water, n.d.d). KWE was created to raise funds from shareholders, helping to finance the acquisition of Thames Water Utilities Limited. KWF and TW(K)F were formed to borrow from external lenders as part of the purchase. TWL was previously listed on the LSE, but now manages pension liabilities and non-regulated parts of the business.

Under TWL sits Thames Water Utilities Holdings Limited (TWUHL), the parent company of Thames Water Utilities Limited (TWUL) and Thames Water Utilities Finance Plc (TWUF). These three entities operate within a ring-fenced WBS, which legally and financially separates them from the wider Kemble group (Elder, 2023). TWUHL was set up in 2007 to facilitate the WBS and to offer lenders collateral through shares in TWUL. TWUL is the regulated and licensed water utility that supplies water and sewage services to customers in London, the Thames Valley, and surrounding areas, and therefore operates under Ofwat's regulatory framework. TWUF is responsible for raising capital to support the operations of TWUL.

Figure 3. Post-Acquisition Corporate Structure



(Thames Water, n.d.d).

Capital Structure

Macquarie financed the acquisition with a highly leveraged capital structure. The WBS allowed to layer debt across multiple entities within the group, supported by detailed covenant and security agreements to support the utility's investment-grade credit ratings (Thames Water, n.d.d). Although regulatory obligations apply exclusively to TWUL, debt issued by the holding companies higher up in the structure remains dependent on the stable, regulated cash flows generated by TWUL. Specifically, debt was added on to KWF, TW(K)F, TWUL, and TWUF.

By March 31, 2007, less than a year after the acquisition, Kemble had accumulated a net debt of £6.34 billion, more than double its pre-acquisition net debt of £3.2 billion (Kemble Water Holdings Limited, 2007). See Table 5 for a detailed breakdown of debt levels at the group level before and after the acquisition. During Macquarie's ownership, this level of debt led to a high gearing ratio. While Ofwat has set a notional gearing ratio of 55–62.5% historically, the average group gearing ratio was 88.7% between 2007–2017 (Macquarie Group, 2023).

Table 5. Group Net Debt: Pre- and Post-Acquisition

	Acquisition[1] (£m)	**31 March 2007[2] (£m)**
Cash in hand	415	198
Loans due within one year	(69)	(11)
Loans due after more than one year	(3,525)	(6,595)
Finance leases	(216)	(216)
Total debt	(3,810)	(6,821)
Liquid resources	147	279
Total net debt	(3,248)	(6,345)

[1] Acquisition date was December 1, 2006
[2] End of year report
(Kemble Water Holdings Limited, 2007; RWE Group, 2006)

Shareholder Loans

Macquarie established shareholder loans as part of Thames Water's capital structure. A £310 million shareholder loan was issued by KWE and funded by the group's equity owners (Kemble Water Holdings Limited, 2016). This loan carried a high 11% interest rate (Kemble Water Eurobond Plc, 2022). Unlike traditional debt, shareholder loans are subordinated, ranking below

senior secured loans or bonds. Instead of being paid in cash, the interest on this loan was deferred and added to the principal, functioning like payment-in-kind[6] (PIK) interest.

Tax Shield Optimization

With such a significant level of debt, Macquarie was able to implement a substantial tax shield optimization strategy. The regulated utility, TWUL, paid either very low levels of corporate tax or no taxes at all in some years. This was due to substantial tax-deductible interest payments on its growing debt, which reduced taxable income. As a result, Thames Water could allocate more funds to servicing debt and distributing dividends (S&P Capital IQ, 2024).

Dividend Recapitalization

Between 2007 and 2017, TWUL paid a total of £2.688 billion in dividends (net of shareholder loan interest) upstream to TWL. This represents an average payout ratio of 98.7%, indicating that almost all of TWUL's earnings were transferred to the non-regulated entities, rather than reinvested in core infrastructure (S&P Capital IQ, 2024). However, only £1.156 billion was eventually distributed by Kemble to investors. A substantial amount of cash, approximately £1.5 billion, was retained within the holding company entities used to service debt, pay interest at the Kemble level, or fund other internal obligations (Macquarie Group, 2023). This reflects Macquarie's strategy of dividend recapitalization, allowing investors to extract cash while shifting the financial pressure to the operating company. The Kemble group used TWUL's stable cash flows from its operations to support interest payments and dividend payouts.

6.2.4 Governance Engineering

Board Restructuring

At the time of acquisition in December 2006, Macquarie replaced TWUL's senior leadership, appointing a new board of 10 directors. The board consisted of Macquarie representatives and several industry experts, reflecting the PE model of active ownership and direct governance involvement. Macquarie advised the board to adopt a "back to basics" operational strategy (Kemble Water Holdings Limited, 2008). This approach focused on the core responsibilities of the regulated water business, prioritizing reliable service delivery to customers. To support this shift, the

[6] PIK interest postpones cash interest payments by adding the owed interest to the loan's principal.

company planned to divest its non-regulated businesses, including engineering services, utility network and asset management, property development, and internal insurance operations. During the year, TWUL showed improvement across all key operational metrics, culminating in its highest ever score in Ofwat's *Water Company Performance Report*.

6.2.5 Operational Engineering

Cost Reduction

On the operational side, Macquarie implemented cost-cutting measures. The Kemble Group's *2008 Annual Report* highlights that Thames Water successfully lowered its operating expenses by 7% relative to the prior regulatory cycle (Kemble Water Holdings Limited, 2008). Cliff Roney, a long-time employee at Thames Water, noted that the atmosphere changed when Macquarie acquired Thames Water from RWE, saying that Macquarie was so stringent that he "could barely order a box of pens" (Isaac and Lawson, 2024). In addition to tightening internal budgets, Macquarie started outsourcing roles that were previously handled in-house, including electricians, metalworkers, and window installers. These aggressive cost-cutting strategies were widely seen as a way to boost dividend payouts to shareholders (Isaac and Lawson, 2024).

Infrastructure Investment

Macquarie oversaw an investment program that totaled more than £11 billion, averaging £1 billion annually (Macquarie Group, 2023). This made the investment level of Thames Water the highest per customer among all water companies during Macquarie's ownership. This also exceeded previous levels, amounting to nearly 2.5x more than the annual investment made when the company was publicly owned, and around 1.5x the levels seen after privatization. These investments were funded through a mix of equity and debt, with the expectation that financial backers would be repaid gradually through the company's future revenues.

Performance Improvements

Thames Water made notable progress in several key performance areas. Water quality improved significantly, placing the company among the top performers in the sector. Leakage levels were reduced by approximately 22%, representing the second-largest improvement across the industry during that time. In addition, pollution incidents fell by 75% compared to 2008. Macquarie stated

that these operational improvements were achieved while maintaining some of the lowest customer bills in the country (Macquarie Group, 2023). However, these gains were not enough to address deeper concerns about underinvestment and long-term sustainability.

6.2.6 Early Signs of Trouble

Environmental Violations

Thames Water's environmental track record during Macquarie's ownership raised concerns, with a number of serious violations highlighting systemic operational failures. Between 2013 and 2014, the most severe incident occurred, when Thames Water discharged 1.4 billion liters of raw sewage into the River Thames. The pollution had serious ecological and public health consequences, killing thousands of fish and making individuals who came into contact with the contaminated water ill. Thames Water was subsequently fined a record £20.3 million in 2017. Reflecting the severity of this sewage leak, the magnitude of this fine was 10x larger than the last record fine of £2 million, paid by Southern Water for a leak in 2016 (Plimmer, 2017). See Appendix F for the timeline of Thames Water's environmental violations under Macquarie.

Pension Deficit

Thames Water's pension position worsened considerably under Macquarie's ownership. In 2008, the company held a pension surplus of £26.1 million. Just a year later, it had turned into a £65 million deficit. This sharp change reflected market conditions post financial crisis and management decisions to prioritize shareholder returns. The growing gap presented a potential risk to employees' future benefits, particularly in the event of financial instability. By 2017, the pension deficit had increased to £379 million (Van Waeyenberge, Bayliss, and Bowles, 2021). Despite the company's ongoing dividend payments during this period, contributions to the pension fund fell short of what was needed to close the gap.

6.2.7 Macquarie's Financial Return and Value Creation

During its ownership period, Macquarie-managed funds reportedly achieved annual gross total returns in the range of 12–13%, which exceeded Ofwat's baseline nominal equity return (Macquarie Group, 2023). In terms of value creation, Thames Water's RCV nearly doubled under Macquarie's ownership, from £6.5 billion at acquisition in 2006 to £12.9 billion in 2017. This

growth was backed by substantial capital investment. However, this period of RCV expansion coincided with a significant increase in debt. Net debt rose from approximately £3.2 billion to £11.5 billion.

6.2.8 The Exit of Thames Water

Macquarie gradually reduced its 48% stake in KWH over several years. This was consistent with its role as a PE infrastructure investor that typically exits positions as funds approach the end of their investment horizon and when market conditions are deemed favorable (Macquarie Group, 2017). The financial details of these transactions remain confidential, so the exact sale prices are undisclosed. The first major sale occurred in 2011, when the Macquarie European Infrastructure Fund (MEIF I) sold a 9.9% stake in KWH to Infinity Investments S.A., a subsidiary of the Abu Dhabi Investment Authority (ADIA) (Macquarie Group, 2011). In 2012, MEIF I sold approximately 12.4% of KWH to the BT Pension Scheme, with Hermes GPE acting as the investment manager (Walmsley, 2012). Later in 2017, Macquarie completed its exit, when MEIF II sold off its remaining 26.3% ownership stake in KWH. The final stake was purchased by Wren House Infrastructure Management Limited, which manages infrastructure investments on behalf of the Kuwait Investment Authority, and Borealis Infrastructure, the infrastructure arm of the Ontario Municipal Employees' Pension Fund (Macquarie Group, 2017).

6.3 Post-Macquarie Ownership

6.3.1 Institutional Ownership

Since 2017, Kemble has been owned by a consortium of institutional investors, including pension funds and SWFs. The largest shareholder is the Ontario Municipal Employees' Retirement System (OMERS), with 31.78%, followed by the Universities Superannuation Scheme (USS) with 19.71%. USS expanded its position in 2021 by acquiring the 8.77% stake previously held by Wren House (SWFI, 2021). Other pension funds include the British Columbia Investment Management Corporation, Hermes GPE, Stichting Pensioenfonds Zorg en Welzijn, and Queensland Investment Corporation (QIC). The SWFs include Infinity Investments S.A., a subsidiary of ADIA, and the China Investment Corporation. Aquila GP Inc. is the only infrastructure investment manager in the consortium. These institutional owners are globally dispersed, with only two based in the U.K.

(Thames Water, n.d.d). An overview of the ownership is detailed in Table 6, while a detailed description of each investor can be found in Appendix G.

Table 6. External Shareholders

Investor	Country	Investment Year	Stake
Ontario Municipal Employees Retirement System	Canada	2017–2018	31.78%
Universities Superannuation Scheme	U.K.	2017, 2021	19.71%
Infinity Investments SA	UAE	2011	9.90%
British Columbia Investment Management Corp	Canada	2006	8.71%
Hermes GPE	U.K.	2012	8.70%
China Investment Corporation	China	2012	8.69%
Queensland Investment Corporation	Australia	2006	5.35%
Aquila GP Inc.	Canada	2013	5.00%
Stichting Pensioenfonds Zorg en Welzijn	Netherlands	2006	2.17%

(Thames Water Utilities Limited, 2024a)

6.3.2 Rationale Behind the Investment

At the time institutional investors committed capital, there was a rising appetite for infrastructure. This was driven by the sector's reputation for providing dependable, inflation-linked returns and the general assumption that regulators would not allow the water utilities sector to fail. Wren House emphasized that Thames Water would be a central component in expanding its U.K. portfolio and that its long-term outlook aligned with regulatory goals (OMERS Infrastructure, 2017). Similarly, the USS viewed its role as a responsible, long-term investor, intending to build relationships with Ofwat (IREI, 2017).

Kemble's institutional investors took advantage of the U.K.'s historically low interest rates between 2011 and 2017, creating a favorable environment for infrastructure investment. From March 2009 to August 2016, the Bank of England's base rate was just 0.5% (Bank of England, n.d.). The low rates were intended to stimulate the economy after the financial crisis. For institutional investors, low interest rates meant that traditional low-risk assets, such as government bonds, provided a low return. The interest rate environment inspired investors to seek investments that could provide higher yields with relatively low risk.

6.3.3 Financial Performance

Revenue and Margins

Since 2021, Thames Water's total revenue has grown steadily, from £2.1 billion to £2.5 billion in 2024 (Thames Water Utilities Limited, 2024d). As of fiscal year 2024, the group reported an underlying EBITDA of £1.2 billion, equating to a margin of 48% and year-on-year growth of 21%. However, profits have not kept pace. The real switch came in 2022, when inflation and interest rates began to surge. With more than half of its debt inflation-linked, the group suddenly faced soaring finance costs and losses on financial instruments. After-tax profit was £75 million in 2024, representing a modest 3% margin. However, this marks a significant improvement compared to a £30 million loss in 2023 and a staggering £973 million loss in 2022. Each year, nearly £700 million goes to interest payments, and financial expenses have increased by nearly 60% from 2021 to 2024. See Appendix H for historical financials from 2021–2024.

Debt Accumulation and Cash Flows

On September 30, 2024, Thames Water saw its group debt increase to approximately £19.5 billion (Thames Water Utilities Limited, 2024d). The debt comprises a mix of Class A and B debt, term loans, bonds, accretion on index-linked swaps[7], and shareholder loans, as displayed in Table 7. See Appendix I for a detailed chart of the group's debt structure and maturity dates.

Table 7. Condensed Group Debt (September 30, 2024)

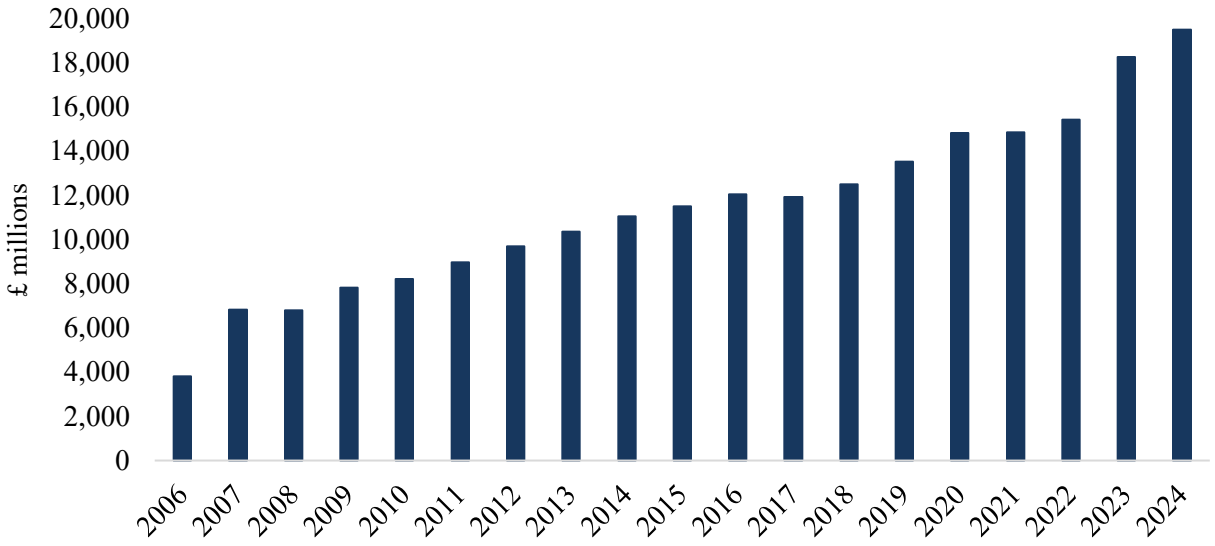
Type of Debt	Amount (£m)
Shareholder Loans	1150.5
Term Loans & Bond	1376.0
Class A Debt	17074.3
Class B Debt	994.0
Accretion on Index-linked swaps	(1239.0)
Swaps with breaks	153.6
Total Debt	19509.4

(Thames Water Utilities Limited, 2024d).

[7] Accretion on index-linked swaps reflects the increase in payment obligations due to RPI-linked inflation.

This tremendous amount of debt has ballooned since Macquarie's ownership began in 2006, more than tripling over the past two decades. Figure 4 illustrates Thames Water's debt growth from 2006 to 2024. This debt expansion has only continued under institutional ownership.

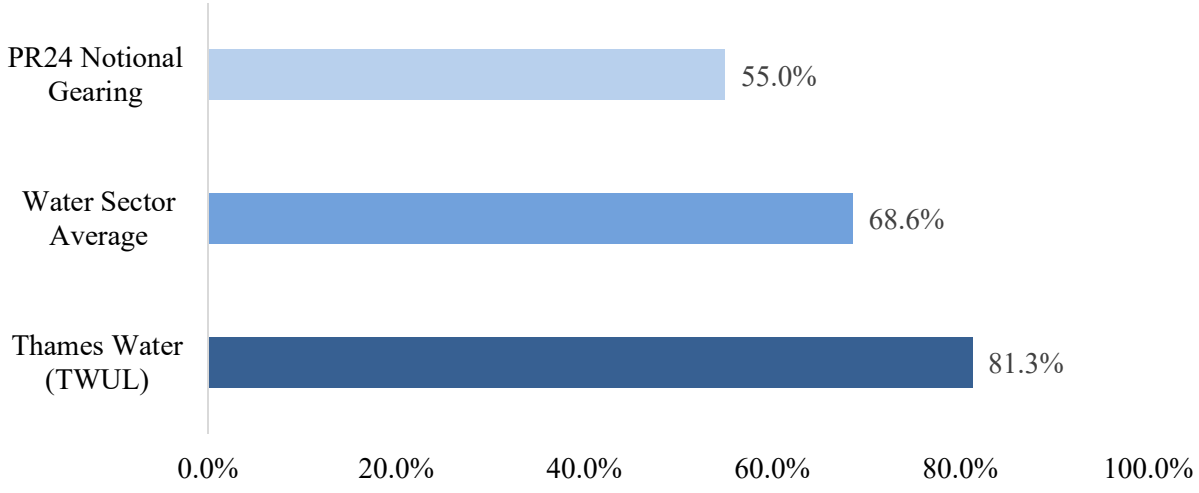
Figure 4. Group Debt Growth (2006–2024)



(Kemble Water Holdings Limited, 2007–2024)

While Ofwat views gearing levels over 70% as concerning and unsustainable, Thames Water's regulatory gearing ratio stood at 81.3% on March 30, 2024, and 84.2% on September 30, 2024 (Ofwat, 2024b). Thames Water clearly stands out compared to both Ofwat's notional gearing of 55% and the industry average of 68.6% (see Figure 5).

Figure 5. Regulatory Gearing Comparison (March 31, 2024)



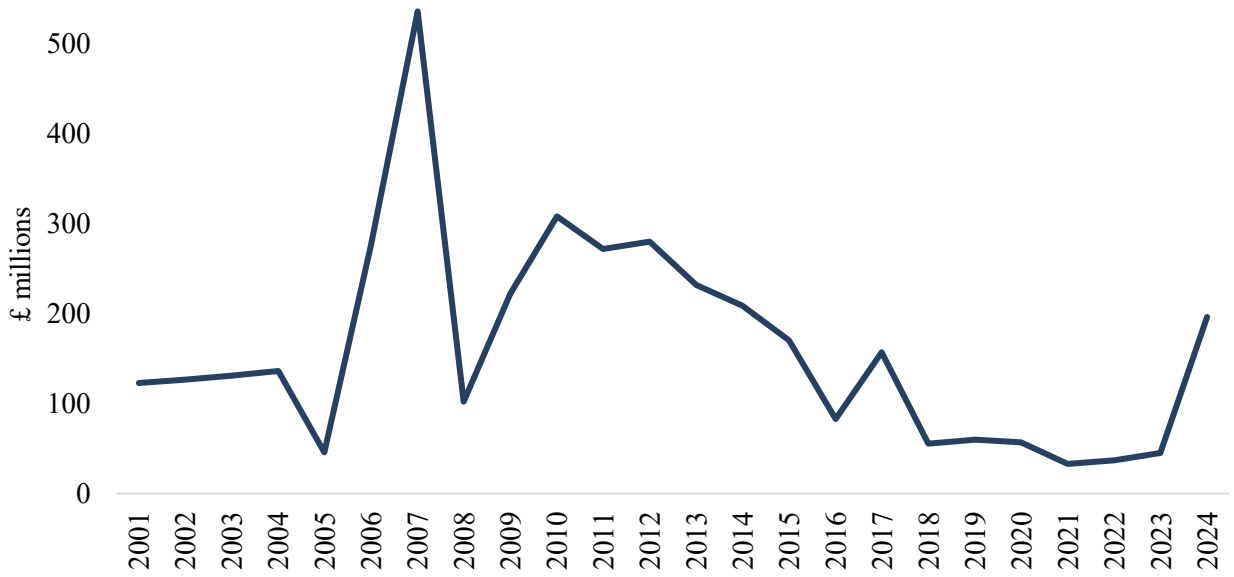
(Ofwat, 2024b)

In 2024, Thames raised £3.1 billion in new debt but used £2.7 billion of it to refinance maturing liabilities, a cycle that has repeated each year (see Appendix I). Meanwhile, cash reserves declined from £1.83 billion in 2023 to £1.15 billion in 2024. TWUL faces significant maturities across its Class A and Class B bonds in upcoming years, around £600 million in 2024/25 and £2.0 billion in 2025/26, increasing pressure further (Thames Water, n.d.b).

Dividend Distribution

Since Macquarie sold off its remaining stake in Thames Water in 2017, dividend payouts have dropped remarkably. Institutional investors have taken comparatively low dividends in the years that followed. This decline reflects growing financial constraints across the group, with swelled debt service obligations, tighter regulatory scrutiny, and rising capital expenditure requirements. This means that the group has little free cash flow left available for distribution. Figure 6 illustrates the change in dividends between 2001 and 2024.

Figure 6. Annual Dividends at TWUL (2001–2024)



(Ofwat, n.d.g)

Weighted Average Cost of Capital

Thames Water's actual WACC was estimated to be approximately 8.5% since 2020. This is 160 basis points higher than the U.K. utility sector average, and 3–4x larger than the regulated WACC set by Ofwat (Blanc-Brude, Gupta and Whittaker, 2023). This gap implies that Thames Water

would need to take on considerable risk to just meet its cost of capital. Essentially, the company is unable to operate like a low-risk utility company. See Appendix J for a comparison of Thames Water's market WACC to other utilities.

Claim Hierarchy

The priority order in which creditors and shareholders are repaid in the event of default is critical. Within the WBS framework, Class A debt is the most senior and lowest-risk tranche, benefiting from the highest priority claim over the regulated utility's cash flows. Next is Class B debt, which carries higher risk and offers higher yields compared to Class A. Kemble's debt, as the holding company, is structurally subordinated and relies on upstream cash flows, therefore not secured against the operating assets. Below this are shareholder loans, which include capitalized interest. At the bottom of the hierarchy are the common shareholders, who are residual claimants and get paid only after all other obligations are satisfied. Table 8 outlines the claim priority structure, ranking classes from the most senior to the most junior.

Table 8. Claim Hierarchy

Rank	Instrument / Capital Class	Entity Issuer
1	Securitization Group – Class A	TWUF TWUL
2	Securitization Group – Class B	TWUF TWUL
3	Holding Company Debt	TW(K)F KWF
5	Shareholder Loan	KWH (Kemble)
6	Common Shares	Shareholders of KWH (Kemble)

(Thames Water Utilities Limited, 2024d)

6.3.4 Governance Performance

Board Governance

Kemble's ownership is fragmented, with no majority shareholder, and with most owners based overseas. According to the Spencer Stuart Board index for FTSE 150 public companies, the average board size is 10.1 and the average tenure of directors is 7.1 years (Spencer Stuart, 2023). With an

unusually large board of approximately 15 directors, Kemble's board size is more common for publicly listed companies than a private utility. Approximately 6 of the 15 directors had alternates, further diffusing responsibility. The overall board structure was characterized by indirect control of globally dispersed investment committees, ill-suited to be proactive in a crisis (Pratley, 2024). Furthermore, Kemble has seen 54 director resignations between 2017 and 2024, averaging nearly 8 exits per year (see Table 9) (Companies House, n.d.).

Table 9. Director Terminations at Kemble (2017–2024)

2017	2018	2019	2020	2021	2022	2023	2024	Total
4	6	3	6	3	8	4	20	54

(Companies House, n.d.)

Executive Turnover

Thames Water has experienced leadership instability since 2017. The company has had three different CEOs during this period: Steve Robertson, who served from 2016 to 2019; Sarah Bentley, who led the company until mid–2023; and Chris Weston, who took over in early 2024 (Thames Water Utilities Limited, 2019; Thames Water Utilities Limited, 2023; Thames Water Utilities Limited, n.d.). The CFO position has seen even greater turnover, with five individuals in the role: Brandon Rennet (2016–2019), Ian Marchant (Interim, 2019), Alastair Cochran (2021–2025), Stuart Thom (Interim, March–April 2025), and Steve Buck (April 2025–present) (Smart Water, 2021; Thames Water Utilities Limited, 2025a; Thames Water Utilities Limited, 2025b).

6.3.5 Operational Performance

Aging Infrastructure Network

Thames Water is facing the most serious infrastructure challenges in the U.K., primarily due to the age and stress of its water network. Over 80% of its pipes in London were laid before privatization, making it the oldest system in England and Wales. Additionally, the water network experiences the heaviest usage, handling more water volume than any other utility. As a result, Thames Water has the highest rates of leakage and emergency repairs in the sector. Such poor asset health constitutes a risk to public health, environmental safety, and water supply. Risks include sewer collapses, system blockages, contamination threats (e.g., cryptosporidium), aging lead pipes, and electrical system failures (Thames Water, 2024b).

Chronic Underinvestment

Thames Water's operational challenges are largely the result of years of underinvestment in its infrastructure. At the current replacement rate, Thames Water has stated that it would take 500 years to replace the sewers and 167 years to replace the water mains (Thames Water, 2024b). Furthermore, it is estimated that £24 billion will need to be invested by 2030 to modernize infrastructure and build long-term resilience (Shankleman, 2024). These figures underscore the severity of Thames Water's investment backlog and the mismatch between its long-term investment needs and current financial capacity.

Violations and Regulatory Penalties

Between 2017 and 2021, Thames Water was fined a total of £32.4 million across 11 separate incidents of water pollution by the EA. In one instance, the company neglected to perform critical upkeep on a sewer system that had already been identified as high-risk. Rather than implement a proactive monitoring system to detect blockages, the company relied on reports from the public to identify pollution. In 2021, one such incident was detected by canoeists who had to paddle through sewage water with dead fish (GOV.U.K., 2021). Additionally, Thames Water failed to meet Ofwat's leakage reduction target in 2022–2023. As a result, Thames Water was required to return £120 million to customers (Thames Water Utilities Limited, 2024c).

Customer Trust and Service Complaints

Thames Water's operational issues have had a direct impact on the customers it is meant to serve. In the CCW's annual household satisfaction survey for 2024, Thames Water received several scores below the U.K. sector average. It ranked third lowest for trust among all water companies, with a score of around 5.8 out of 10. Notably, the report underlines the fact that customers of low-trust companies, like Thames Water, were also the most likely to believe that their water bills were unfairly priced (CCW, 2024).

6.4 From Strain to Crisis

6.4.1 Financial Distress Events

Thames Water's financial resilience has been under scrutiny by Ofwat since 2022. By early 2023, all of Thames Water's long-standing financial, governance, and operational challenges converged

into a period marked by financial distress and debt overhang issues. Below is a brief timeline outlining the key financial distress events in 2023–2024. As of March 31, 2023, TWUL's covenant basis net debt stood at £14.68 billion, with an RCV of £18.95 billion, resulting in a gearing ratio of 84.3% (Ofwat, 2023b). By July 10, 2023, Kemble shareholders agreed to inject £750 million in equity funding over the remainder of AMP7. The first £500 million tranche was anticipated by March 31, 2024, with an additional £2.5 billion expected thereafter. This was conditional on Ofwat's price determination approving Thames Water's AMP8 business plan, including permission to raise bills to £667, a 53% increase (Thames Water, 2023b).

On June 27, 2023, the unexpected resignation of Sarah Bentley as Chief Executive Officer raised alarm across the sector and among government officials (Thames Water, 2023c). The U.K. government discreetly launched a contingency plan under the code name "Project Timber" and contacted Teneo Financial Advisory and EY, two major global advisory firms (Hansard, 2024). Teneo had previously been appointed as the insolvency practitioner for Bulb Energy, a U.K. electricity supplier that was placed under a special administration in 2021 (NAO, 2023). Due to rising concerns over the management transition and unknown timing of the equity injection, S&P placed its BBB issue rating on TWUL's Class A debt on CreditWatch with negative implications on June 30, 2023 (S&P, 2023).

On March 28, 2024, Thames Water shareholders withdrew the promised £500 million second tranche of the £3.25 billion in emergency funding following a breakdown in negotiations with Ofwat. Investors called the plan "uninvestable" due to regulatory uncertainty (Lawson et al., 2024). When shareholders withdrew the planned £500 million equity injection, it triggered a cascade of financial consequences. Later that month, on March 31, 2024, TWUL's covenant basis net debt reached £16.22 billion, with an RCV of £19.95 billion, corresponding to a gearing of 81.3% (S&P, 2023). Consequently, on April 3, 2024, Moody's downgraded TWUL's monitored CFR from Baa2 to Baa3. The following day, S&P lowered TWUL's Class A senior debt from BBB to BBB– with a negative outlook. These downgrades initiated a license-based cash lock-up, meaning TWUL would require formal approval from Ofwat to make any dividend payouts.

On April 5, 2024, Kemble formally notified its bondholders that it had defaulted on a £400 million loan issued by KWF following a missed interest payment. The bond's market value plummeted, trading at just over 15% of its face value (Smith, 2024). The situation worsened just weeks later. On May 17, 2024, OMERS, Kemble's largest shareholder with a 31.78% stake,

announced that it would write off its investment, walking away from a stake once valued at over £990 million in 2021 (Shankleman and Aldrick, 2024). The impairment included not only the equity investment but also the loan receivable and accrued interest. Other major investors took similar actions in the months that followed. The USS issued a 62% write-down of its 19.71% stake in Kemble, valued at £956 million at the end of 2022 (Plimmer and Pickard, 2024). QIC confirmed that it had reduced the value of its 5.35% ownership stake to zero, citing the ongoing instability of the utility (Hall, 2024; Plimmer and Pickard, 2024). Finally, ADIA issued a write-down of its 9.90% stake in Kemble to £1, valued at £263 million at the end of 2023 (Healy, Plimmer and Pickard, 2024).

Thames Water's annual report, as of June 30, 2024, disclosed that the company had £1.8 billion in liquidity runway, only enough to fund operations until the end of May 2025 (Ofwat, 2024c). Following this, Ofwat released its PR24 draft determinations decision on July 12, 2024, limiting allowed bill increases. Consequently, Moody's downgraded TWUL's CFR rating by two notches to Ba2 from Baa3 with a negative outlook. This left TWUL with only one investment-grade issuer rating, contrary to the obligation in License Condition P26. A month later, on July 31, 2024, S&P downgraded TWUL's Class A debt from BBB- with a negative outlook to BB. S&P cited deteriorating liquidity and the projected trigger events that might restrict Thames Water's ability to secure additional debt. As a result, TWUL no longer held two investment-grade ratings and was in breach of License Condition P26.

In response, Ofwat issued a provisional decision notice on August 7, 2024, finding Thames Water in breach of License Condition P26 (Ofwat, 2024j). After a short consultation period, Ofwat published its final decision to accept Thames Water's undertakings to remedy its license breach. This centered around four main elements: (i) Appointment of an Independent Monitor to provide regular updates to Ofwat on the progress (ii) Preparation and implementation of a suitable turnaround plan for continued operations, (iii) Execution of actions necessary to secure new equity funding and (iv) Appointment of new non-executive directors to the board (Ofwat, 2024k).

Against this backdrop, on September 20, 2024, Thames Water announced that liquidity was expected to expire by the end of December 2024, earlier than the previously indicated date of May 2025. Shortly thereafter, Moody's downgraded TWUL's CFR rating from Ba2 to Caa1, and S&P lowered TWUL's Class A debt from BB to CCC+. At this point, TWUL's covenant basis net debt had reached £16.98 billion, with a RCV of £20.2 billion, resulting in a gearing ratio of 84.2%

(Thames Water Utilities Limited, 2024d). The following month, TWUL announced a restructuring plan ("Liquidity Extension") to extend the runway to 2025–2026. In response, S&P further downgraded TWUL's Class A debt to CC, characterizing the proposed transaction as a distressed debt restructuring.

On December 19, 2024, Ofwat released its final determinations, agreeing to allow Thames Water to increase its annual household bills (in nominal terms) from £426 in 2024/25 to £588 in 2029/30, an increase of 35%. While substantial, this increase remained well below the 53% hike Thames Water initially requested (Ofwat, 2024i). Politically, this decision was highly sensitive, drawing public scrutiny over affordability, especially amid a broader cost-of-living crisis and elevated inflation. Ofwat also announced it would impose a £18.2 million penalty for broken dividend rules under License Condition P30, following TWUL's dividend payments of £37.5 million in October 2023 and £131.3 million in March 2024 to its parent company, TWUHL (Ofwat, 2024e). To protect consumers from the financial impact of the company forfeiting £131.3 million in tax losses as part of the March dividend, Ofwat planned to adjust the utility's price control mechanism accordingly.

6.5 Solutions on the Table

As financial pressure on Thames Water reached a tipping point, several rescue scenarios emerged. With cash reserves projected to run dry by December, the urgency to act grew sharply (Ofwat, 2024c). Any potential solution would need to navigate the strict legal and financial constraints of the WBS arrangement, where Thames Water's assets are distributed according to a legally defined hierarchy of claims. In this structure, debtholders have the first claim on assets, with Class A and Class B creditors holding secured rights over the regulated utility's cash flows. Since investors at the Kemble company level are structurally subordinated, they have limited tools to intervene or recover value. Each potential solution presents difficult trade-offs, balancing financial viability, stakeholder implications, and the need to preserve core utility services.

6.5.1 Debt Restructuring

Operating Company Level: One path was to restructure TWUL's heavy debt load (Elder, 2024). TWUL's senior creditors could agree to reprofile debt terms by changing the timing of debt payments without reducing the principal or writing off debt (e.g., extending maturities, adjusting amortization schedules, and spreading out repayments) in exchange for credit sweeteners (e.g.,

higher interest margins, fees, and tighter covenants). Alternatively, TWUL could seek to refinance portions of its existing debt through new lending facilities. With TWUL under major financial stress and close to default, the company could arrange an emergency liquidity facility, often structured as a super-senior secured loan that ranks above existing Class A debt.

Holding Company Level: As a non-regulated entity with no operating income, Kemble had long relied on upstream dividend payments from TWUL to meet debt obligations at KWF. This strategy became unviable after Ofwat imposed dividend restrictions. With Kemble insolvent and unable to raise new debt or restructure existing debt, KWF's lenders could theoretically choose to initiate in-court insolvency procedures, such as enforcing a share pledge to seize control of TWL. This could result in a broader debt restructuring or the sale or merger of TWL. In this case, KWF could be forced to reduce its debt through haircuts, debt for equity swaps, interest rate adjustments, and covenant waivers (i.e., temporary agreements to overlook loan term breaches). If Kemble creditors accepted a swap, they would ultimately become TWL's new owners but still suffer from impairment of their claims. Inevitably, existing Kemble shareholders would not be receptive to this option as their equity stake would be diluted or written off.

Trade-offs: A debt reprofiling at the operating level could offer immediate relief as multiple loans are due in the near future. Raising a super-senior facility would provide short-term relief but reduce recovery prospects for existing secured creditors if TWUL defaults. In that event, Class A and B creditors would risk higher losses due to the restructured claim hierarchy. Additionally, due to their structural subordination, Kemble creditors would recover value only if surplus assets remained after operating company claims were settled. A positive aspect of a broader debt restructuring is that it forces financial pain onto investors rather than taxpayers.

However, forcing losses on creditors could have broader repercussions, as experts warned it might undermine investor confidence and raise borrowing costs across the sector (Duarte, 2024). Also, a drawn-out debt renegotiation carries operational risk, as contractors may demand cash up front and insurers could withdraw coverage, causing a cash crunch. Still, the main drawback is the complexity of securing out-of-court creditor agreement, given Thames Water's diverse investor base and layered financing structure.

6.5.2 Equity Restructuring

Operating Company Level: Bringing in new external investors to recapitalize the utility on a larger scale became a potential option after existing owners refused to inject capital. The regulatory ring-

fencing of TWUL, the operating company, offered a degree of insulation from Kemble's financial distress. Even if the parent defaulted, TWUL could continue operating under Ofwat's oversight. Nevertheless, new owners would still inherit TWUL's debt load, regulatory scrutiny, and mandated infrastructure upgrades. Attracting investors required improving viability, likely through concessions such as creditor write-downs, greater control, regulatory clarity, and higher allowed customer charges (Young, 2024; Young et al., 2024). This approach would let new investors bypass Kemble, directing capital to core operations instead of servicing legacy debt. It effectively transferred control away from Kemble, leaving subordinated creditors and shareholders likely wiped out or heavily diluted.

Holding Company Level: With Kemble insolvent, its creditors could enforce their rights, including share pledges over TWL shares. The outcome would depend on TWL's valuation relative to the group's debt. In a best-case scenario, TWL's enterprise value exceeds the total outstanding debt across both TWUL and Kemble. In that case, the business could be sold, but perhaps at a discount. Since the transaction would fully cover all outstanding debt, creditors would avoid losses, though Kemble's investors would be diluted and recover only part of their investment. In a base-case scenario, TWL is worth enough to repay TWUL's creditors, but not enough to cover the debts at Kemble. TWL could still be sold, likely at a steep discount, wiping out Kemble shareholders. While TWUL's secured creditors would be repaid in full, subordinated Kemble creditors could face haircuts of 0–99%. In the worst-case scenario, TWL's valuation fails to cover TWUL's secured obligations, and the entire capital structure would be overhauled with zero equity value left. In such a case, TWUL would enter formal insolvency.

Trade-offs: At this point, there was little rationale for prospective investors to inject further funds into Kemble, the broken, debt-saddled shell. All funds would be used to service debt, with no prospect of recovery or return. A TWUL recapitalization was more viable, providing crucial funds to reduce debt, finance upgrades, and restore liquidity. However, fresh equity was no quick fix. It hinged on compromises and a favorable regulatory outcome to entice bidders. Secured TWUL creditors favored this scenario, as their bonds would be repaid in full if the new equity filled the gap. This outcome was strongly preferred by the broader public, as it avoided state intervention or a taxpayer-funded bailout. Customers would remain with a private provider but likely pay the price in terms of bill increases in exchange for service improvements.

6.5.3 Asset Sales or Split-Up

Some proposed selling parts of Thames Water through non-core asset sales or by splitting up the company. More drastic options involved the sale of core infrastructure. One proposal put forward by industry experts was to divide Thames Water along geographic lines. For example, Dieter Helm, Professor of Economic Policy at the University of Oxford, suggested splitting Thames Water into two stand-alone companies, "London Water" and "Greater Thames Water," with no overarching holding company (Helm, 2024). Some campaigners proposed breaking up Thames Water into smaller mutual entities, an idea dubbed "Mini Baby Thames" after the split-up of AT&T's monopoly into the "Baby Bells" (Lawson, 2024). This would mirror Dŵr Cymru's not-for-profit model, with the company owned and run for customers rather than Kemble's investors.

Trade-offs: Rapidly selling off assets in a complex water utility would be tricky for several reasons. Given their essential public role and integrated physical infrastructure, water utilities are difficult to separate, sell, or repurpose, making traditional asset disposals impractical and disruptive. Additionally, legal constraints require assets to remain functional to meet health, safety, and environmental standards. Regulators like Ofwat or Defra prioritize service continuity and would scrutinize any sale or split-up to ensure each part of the network had a capable, well-funded operator. Finally, arranging multiple asset sales could take time, with each new entity requiring a license and the operational capability to supply water and treat sewage. This option would necessitate heavy regulatory oversight, administration, or restructuring.

Executing asset sales could be a risk for Kemble shareholders. Selling parts of TWUL could generate cash to pay down debt or fund investments, preserving some value. However, divesting profitable assets and carving up Thames Water could disrupt economies of scale, reducing future earnings. Furthermore, selling parts of a failing water utility to private investors could be contentious, seen as privatizing gains while socializing losses. If Thames Water were split up, existing shareholders could receive stakes in smaller companies or see their holdings wiped out if the entities were mutualized.

For creditors, asset sales offer more hope of recovery, but a piecemeal sale raises questions about which creditors get paid and how. Under WBS, creditor recovery is tied to the survival of the business, not the value of its assets. If Thames Water were split, the debt would need to be divided among the new units or refinanced, adding complexity and potentially affecting credit

strength. A fragmented sale could cherry-pick the most profitable parts of the business, leaving some bondholders tied to weaker assets and a residual company still in need of support.

6.5.4 Water Industry Special Administration Regime

If all other options fail and Thames Water is unable to meet its core functions, it could be placed into a WISAR. Under this scenario, the government would act as the de facto steward of the utility. When conventional restructuring is inadequate, a WISAR is designed to enable an orderly transition. This form of "temporary nationalization" would aim to ensure uninterrupted water and sewage services, providing a window to implement a more permanent solution. The government could seek to refinance, split up, or sell the company

Trade-offs: A WISAR protects consumers and prevents service interruptions. Even if Thames Water runs out of money, the water supply to 16 million people would not be shut off. The immediate drawback is cost. Running the utility under government control could require billions in public funds upfront, and if the company's situation worsens, taxpayers could be left footing the bill. One estimate produced by Charlie Maynard, Member of Parliament (MP), stated that a special administration could cost the government up to £66 million (Mitchell, 2025). This figure was dismissed by Ofwat in the Court, on the grounds that there was no evidence to support this claim. In contrast, Thames Water estimated the cost to taxpayers at approximately £4 billion.

Under a special administration, Kemble shareholders risk losing their entire stake, similar to in a traditional insolvency process. Thames Water would be operated for public benefit until it could be sold or restructured, likely wiping out existing equity. In a typical insolvency, creditors' claims are prioritized to maximize value. However, as an essential service, Thames Water's process would differ, since a WISAR prioritizes service continuity over creditor recoveries. Creditors would still have rights, but these are secondary to public service obligations, potentially resulting in delayed recoveries, restructured claims, or haircuts.

Expropriating secured creditors could harm investor confidence, raise borrowing costs, and destabilize infrastructure financing, creating a trade-off between immediate resolution costs and broader financial market risks. Debt and equity investors might view this as a precedent that the government will strip owners of a failing utility, deterring investment in other regulated infrastructure assets. Conversely, opting for a bailout would create a moral hazard by signaling that risky financial strategies will be covered by the state (Lawson, 2024).

A WISAR is a dramatic and undesirable step unless no other options remain. Chris Weston, Thames Water's CEO, emphasized that several fundraising avenues were available before government intervention would be required, a signal for existing investors to step up (Thames Water, 2024a). Similarly, Environment Secretary Steve Reid publicly opposed placing Thames Water under a WISAR (Mitchell, 2025). Political risks loomed large, as officials feared that placing England's largest water utility into a WISAR would signal the failure of the privatized model. A full-blown renationalization of Thames Water was "too punchy a step for the government" (Lawson, 2024). Instead, the government and regulators like Ofwat pushed for a credible turnaround plan, hoping to avoid triggering a WISAR.

6.5.5 Renationalization

Some called for bringing Thames Water permanently back under public ownership. While this idea gained traction in public debate, especially among opposition figures and those frustrated by sewage spills, it was more of a rallying cry than an active government policy. Some politicians argued that Thames Water should be "put out of its misery" (Plimmer and Gross, 2024). However, government officials insisted Thames Water's investors fix the problem, signaling a preference to avoid a WISAR or nationalization unless customer supply was at risk (Muvija, 2023).

Trade-offs: If Thames Water were renationalized, the government would assume ownership of the operating company, and Kemble shareholders would be wiped out. Precedents exist for such interventions in the U.K. A notable example is Railtrack, the private rail company placed into special administration in 2001 following widespread safety concerns. By 2002, Railtrack had been replaced by Network Rail, a publicly controlled company limited by guarantee[8], while former shareholders received only a £500 million settlement (Butcher, 2010). Similarly, a renationalization of Thames Water would likely result in heavy shareholder losses, with any potential compensation subject to government discretion. Debt holders could fare better, as much of the debt would likely be taken on by the government, either by converting bonds into sovereign debt or paying them off. Although some reports suggest bondholders could face losses of up to 40% in a restructuring, most anticipated that they would be protected in a nationalization to maintain low financing costs for the sector and preserve market confidence (Isaac, 2024).

Advocates of renationalization argued it would provide a clean slate to address Thames

[8] A company limited by guarantee has no shareholders and limited member liability.

Water's challenges. Public ownership could lower borrowing costs through state guarantees, eliminate dividends, reinvest profits to improve services, and increase transparency (Lawson, 2024). In contrast, caution centered around cost since keeping Thames publicly owned, even temporarily, could cost billions and shift financial risk to taxpayers (Healy and Smith, 2024). Lastly, renationalizing Thames Water could set a precedent, prompting calls to bring other privatized utilities back under public control. Some also questioned whether Thames Water would perform better under public ownership. While Scottish Water is often praised, critics note it depends on government loans and taxpayer support, an approach that may not be scalable to England without substantial public spending. Overall, nationalization offers long-term alignment with public interests but comes with significant financial and political costs.

6.6 Recent Outcomes

6.6.1 Court-led Restructuring

Facing a severe liquidity crisis and complex financing, Thames Water was unable to reach an out-of-court solution, leading the company to pursue court alternatives under U.K. insolvency law. In December 2024, TWUHL along with its subsidiaries TWUL and TWUF, initiated a restructuring plan under Part 26A of the Companies Act 2006 to deliver interim stability and extend liquidity. A convening hearing was held that month, with a sanction hearing scheduled for February 2025 (LSE, 2024a; LSE, 2024b). To date, this plan is widely seen as the U.K.'s highest value restructuring (Bannister and Yafet, 2025).

In February 2025, the High Court approved the restructuring plan, enabling TWUHL and TWUL to borrow up to £3 billion in new funding classified as super-senior debt with a maturity of 2.5 years from the funding date (Thames Water, n.d.c). This debt was granted priority over existing Class A and Class B bonds, reshaping the claim hierarchy within the WBS framework. The loan arrangement was divided into an initial £1.5 billion tranche to extend the liquidity runway until September 2025 and an uncommitted £1.5 billion accordion option. This option increases the debt facility size, provided TWUL files a formal appeal to the CMA in response to Ofwat's PR24 final determination. To activate this option, the CMA appeal must be approved by (i) a board majority and (ii) at least two independent non-executive directors at TWUL. If exercised, the additional funds would be split into two equal £750 million tranches and could be available through May 2026. The loan carried a sizable 9.75% interest rate and 1.25% in commitment fees and was secured

by a consortium of creditors, including the hedge fund Elliott Management. Other key terms under the plan included a two-year extension of (i) maturities and (ii) amortization payments of all Class A and Class B instruments issued by TWUF (Thames Water, n.d.c).

The plan was approved by the holders of liquidity, interest rate, index-linked, and cross-currency hedging facilities, with 100% of those present voting in favor. The plan also received strong support from Class A creditors, with over 98% voting in favor. Unsurprisingly, 84.5% of Class B creditors and the entire subordinated creditor class opposed the restructuring plan. They argued the plan was unfair because it did not provide for a pari-passu distribution, meaning dissenting classes of creditors stood to absorb more risk, making the plan disproportionately punitive (High Court of Justice, 2025). Despite this, as 75% of creditors in at least one of the classes voted in favor, the High Court exercised its cross-class cramdown powers to bind dissenting classes to the plan. The High Court concluded that the restructuring plan was fair and equitable and a government intervention under a WISAR would lead to worse outcomes.

The court's decision was appealed by an ad hoc group consisting of (i) Class B creditors, (ii) Liberal Democrat Charlie Maynard MP acting in the public interest, and (iii) the immediate shareholder TWL (Court of Appeal, 2025). Despite this, in April 2025 the Court of Appeal upheld the High Court's decision, dismissing the appeals and reinforcing the plan's validity. This judicial endorsement provided Thames Water with a critical window to pursue a comprehensive recapitalization strategy, including efforts to raise equity and negotiate a balance sheet restructuring solution (Thames Water, 2025c).

Thames Water officially requested a referral of Ofwat's PR24 Final Determination to the CMA on February 14, 2025 (Thames Water, 2025d). Subsequently, on March 18, 2025, Thames Water and Ofwat agreed to defer the formal referral for up to 18 weeks, recognizing that it could support a more orderly resolution and allow time for the completion of a market-led recapitalization (Thames Water, 2025a). During this period, Thames Water committed to engaging with Ofwat, EA, Defra, and DWI to mitigate regulatory fines or compliance costs incurred prior to the super-senior debt maturity (Thames Water, n.d.c).

6.6.2 Equity Raise Process

Concurrently, with the debt terms locked in, Thames Water initiated an equity raising process for the regulated company, TWUL, to address its long-term capital needs (Thames Water Utilities Limited, 2024b). Reports indicated that six bidders had come forward to inject capital (Thames

Water, 2025a). These prospective parties represented a mix of strategic and financial investors, ranging from sector specialists to global PE giants. The non-binding proposals varied in terms of valuation, structure, and stakeholder impact. Of the five bids disclosing financial terms, all except one implied material impairments to TWUL's Class A debt. The sixth bid included a minority equity proposal, but no financial details were disclosed.

Among the bidders was CK Infrastructure Holdings (CKI), a Hong Kong-based infrastructure conglomerate that offered a £7 billion bid for a majority equity stake. CKI has extensive experience with regulated U.K. utilities, with stakes in U.K. Power Networks and Northumbrian Water (Smith, Plimmer, and Gara, 2025). Meanwhile, KKR & Co. (KKR), a prominent US-based PE firm with $638 billion in AUM, submitted a £4 billion bid to acquire a majority equity stake (Smith et al., 2025). The preliminary bid included write-downs of at least 25% on senior bonds. It proposed a mechanism through which bondholders could convert debt into equity, offering the possibility of acquiring up to a 50% ownership stake (Smith et al., 2025).

Castle Water, the U.K.'s largest independent business water retailer, was also among the bidders. This bid represented a more strategic and operationally engaged proposition. Another bid came from Covalis Capital, a London-based asset manager, proposing a £5 billion plan with an initial £1 billion equity injection and £4 billion raised through asset sales and refinancing. The strategy involved partnering with the French water utility Suez to manage operations while breaking up TWUL into smaller entities with plans for a future stock market relisting. Under this plan, the U.K. government would obtain a seat on the board and even hold a special "golden share," giving it veto power over key decisions to protect public interests (Morison, 2025). Other bidders included Stonepeak, a large US-based infrastructure investment firm with over $70 billion in AUM, with experience across water, energy, and transport sectors globally (Smith, Plimmer and Gara, 2025). In addition, FitzWalter Capital, a London-based private investment firm, signaled interest with intentions to get a minority equity stake by partnering with other investors. However, these two bidders were seen as weaker contenders and were less likely to proceed.

Finally, on March 31, 2025, TWUL selected KKR as the preferred bidder. KKR was granted a 10-week exclusive window to conduct due diligence, essentially freezing out other bidders. The equity offer remains contingent on regulatory approval and completion of necessary documentation. TWUL reported that it aimed to finalize the transaction terms by Q2 2025, with completion of the full recapitalization process by year-end (Thames Water, 2025c).

7 Discussion

This section discusses the case of Thames Water in relation to the two central research questions outlined in the introduction: (i) *Why did Thames Water fall into financial distress and how should the crisis be resolved?* and (ii) *How should essential public infrastructure be owned and managed?* The section concludes by exploring the wider implications of these findings and why they matter beyond this specific case.

7.1 Why Did Thames Water Fall Into Financial Distress?

7.1.1 Private Equity Ownership

This case study emphasizes the central role Macquarie played in Thames Water's financial distress. Macquarie's ownership marked a period of aggressive financial engineering, laying the foundation for a debt overhang. The WBS and corporate structure were originally intended to support long-term investment through predictable and stable cash flows (Haaranen and Nisar, 2011). Yet, during Macquarie's tenure, these mechanisms were repurposed, becoming tools for dividend recapitalizations. Although ring-fencing TWUL's cash flows from its parent is meant to give creditors confidence in repayment, it instead facilitated excessive leverage (Dentons, 2018). Paradoxically, this has now exposed creditors to even higher risk, with debt restructuring discussions involving losses for senior creditors, such as maturity extensions, write-downs, and haircuts. While securitization can shift risk away from the originator and reduce funding costs, in this case it also enabled Macquarie to extract value through dividend recapitalization without bearing the long-term consequences (Haaranen and Nisar, 2011). While it was legal, Macquarie's strategies raise ethical and moral questions about the appropriateness of applying extractive financial models to essential public infrastructure that serves millions of people daily.

Macquarie's approach is not unique; it mirrors the hallmarks of a common PE model, where financial engineering is used to maximize LP returns (Finnerty, 1988; Døskeland and Strömberg, 2018). Our thesis findings align with the Bhardwaj et al. (2025) study, which underscores how dividend recapitalizations increase the probability of financial distress for large, financially viable firms. In Thames Water's case, this translated into a clear misalignment of incentives. While Macquarie extracted value through large-scale dividends, the long-term viability of the utility was compromised, a textbook example of moral hazard.

Our results indicate that the PE model may be fundamentally ill-suited to the long-term sector needs and public service duties of utilities. It illustrates that while the PE model works well from the investor's perspective, it is poorly aligned with the public interest. Macquarie's behavior also amplifies broader concerns. The fact that a major infrastructure investor was able to implement such strategies so openly may signal to other private investors that similar approaches are feasible and profitable.

While Thames Water is often cited as the sector's most prominent example of financial distress, it is not an isolated case. Macquarie made its first entry into the U.K. water industry in 2003, when its European Infrastructure Fund (MEIF) acquired South East Water. During Macquarie's tenure, South East Water's debt levels doubled as the company raised financing under a WBS arrangement (Bayliss, Van Waeyenberge and Bowles, 2023). More recently, in 2021, Macquarie re-entered the water sector with a £1 billion capital injection to acquire a 65% stake in the troubled Southern Water through its Super Core Infrastructure Fund (MSCIF), described as a "yield-focused" vehicle (Macquarie Group, 2018). Despite the recapitalization, Southern Water's financial position deteriorated further, and Moody's downgraded its credit rating to junk status in November 2024, citing a £6 billion debt burden and growing risk of default (Healy and Plimmer, 2024). As illustrated in Table 2, Thames Water, South East Water, and Southern Water are three of the five most highly indebted firms, with gearing at 84.2%, 77.8%, and 71.6% respectively. Moreover, these companies also hold some of the lowest credit ratings in the sector.

However, financial fragility has been observed across Macquarie's investments in other U.K. sectors. For example, in 2017, Macquarie entered the gas sector and led the acquisition of Cadent Gas Limited (CGL), U.K.'s largest gas distribution network, also via its MSCIF (Macquarie Group, 2018). The acquisition was one of the largest infrastructure deals, which attracted wide institutional interest and was portrayed as a "rare opportunity" for its scale (Bayliss, Van Waeyenberge and Bowles, 2023). The CGL investment comprised 60% of MSCIF's total AUM (Macquarie Group, 2018). Shortly after the acquisition, the utility was structured similarly to Thames Water: the licensed company CGL was placed in a WBS beneath its parent, Quadgas Holdings TopCo (QHT). In 2021, four years after the acquisition, dividends of £1.2 billion had been distributed to QHT, with a large proportion financed by debt (Bayliss, Van Waeyenberge and Bowles, 2023). Although CGL had a lower gearing compared to TWUL's at 64%, it still faced a

significant debt burden. Consequently, Moody's downgraded CGL from A3 to Baa1 as a result of extensive financial risk at the holding company level.

Moreover, similar problems have been observed internationally. In the US, the Indiana Toll Road, leased by a consortium of Macquarie and Cintra, filed for bankruptcy in 2014 after unsustainable debt growth (IFM Investors, 2022). The deal was highly leveraged, financed through senior bank debt and a nine-year interest-only bullet loan, and hedged by a 20-year accreting interest rate swap. As interest costs mounted and refinancing became unviable, total project debt rose from $3.4 billion to $6 billion by 2011. The case of Thames Water reflects this same dynamic. Macquarie loaded the company with debt, exited, and left the utility with over half of its debt indexed to inflation, exacerbating financial distress as interest rates surged. All aforementioned cases highlight a wider trend in how Macquarie's use of PE strategies has led to poorly structured and managed essential infrastructure assets.

Our thesis also showcases deeper shortcomings within the privatized model. Thames Water's trajectory reflects structural issues in the water sector, where firms show weak financial resilience, characterized by high gearing, heavy reliance on index-linked debt, WBS arrangements, and significant involvement of private investment firms. The average sector gearing stood at around 70% as of March 31, 2024, lower than Thames Water's level but still unsustainable according to Ofwat's notional level of 55% (Table 2). Moreover, a large portion of ownership has migrated offshore, with many water utilities using complex structures composed of holding companies and SPVs for tax and financing reasons. Importantly, similar failures in other sectors, such as Bulb Energy's collapse in 2021 and the high-profile failure of Railtrack in the early 2000s, show that these risks are not unique to PE ownership only, rather symptomatic of the challenges inherent in applying privatized models to essential public services.

7.1.2 Weak Regulatory Oversight

Ofwat's core duty is to ensure that the licensed water companies deliver efficient, high-quality services to consumers at fair prices. Yet our study finds a striking gap between this mandate and actual outcomes. While privatization aimed to improve efficiency through profit incentives, the lack of reinvestment requirements and gearing limits allowed firms like Macquarie to prioritize financial engineering over operational improvements (Braadbaart, 2001). For Ofwat, alarm bells should have been ringing when companies began using complex corporate structures to raise mostly index-linked debt and pay large dividends instead of reinvesting in aging infrastructure.

Our findings show that Ofwat failed to protect the public interest, allowing a pattern of risky financial practices to take hold across the sector. Part of the issue stems from a narrow regulatory focus. While Ofwat tightly regulated the utility itself, the WBS arrangement allowed it to overlook the parent company's activities. This regulatory blind spot enabled risky financial strategies that jeopardized the utility's stability, as the WBS framework let the group issue investment-grade debt despite higher underlying risk (Schwarcz, 1994).

Although Ofwat has since received broader powers to monitor financial resilience and restrict dividend payments, the effectiveness of these reforms remains in question. A more robust framework, such as hard limits on gearing ratios, WACC, investment levels, inflation-linked debt, or mandated long-term equity holding periods, might help to prevent similar crises in the future. On the other hand, stricter regulations could potentially reduce investor appetite for funding essential infrastructure, highlighting a difficult trade-off.

Furthermore, Ofwat's pricing model of regulating the WACC could distort incentives. The WACC guides investment decisions as firms pursue projects expected to exceed their cost of capital (Blanc-Brude, Gupta and Whittaker, 2023). By capping returns well below market estimates, the regulator may have unintentionally promoted risky behavior. This case study suggests that Thames Water's low regulated WACC signaled limited returns, prompting owners to take on more debt at a low cost and pursue aggressive, short-term gains instead of long-term investment. While it is Ofwat's responsibility to ensure adequate reinvestment, the levels set by the regulator appear to have fallen short. Infrastructure assets with monopoly-like characteristics are particularly vulnerable to opportunistic behavior, given their stable cash flows and limited competition (Sawant, 2010). Our case study findings support the view that Thames Water's underinvestment in infrastructure and environmental protection reflects an incentive structure misaligned with the public interest.

This case also raises fundamental questions about accountability: should the blame lie with Ofwat, Thames Water's institutional shareholders, or with Macquarie? Our findings suggest that responsibility is shared. This case underscores the risk of moral hazard when owners benefit from gains but are insulated from losses. Misaligned incentives between GPs and the long-term health of portfolio companies increase the risk of distress (Bhardwaj et al., 2025). A government bailout would signal to investors that the public will absorb losses, encouraging excessive risk-taking.

Overall, the problems faced at Thames Water are inherently emblematic of broader systemic issues in how critical infrastructure is governed under private ownership models.

7.2 How Should the Crisis Be Resolved?

Our case study reveals that there is no simple solution to Thames Water's crisis. The core challenge is that the company's capital structure is unsustainable. This classical debt overhang problem distorts incentives, reduces the company's flexibility to invest in long-term improvements, and exposes customers, creditors, and taxpayers to ongoing risk. Each potential path forward comes with trade-offs for at least one group of stakeholders. While a debt restructuring risks creditor losses and higher sector-wide borrowing costs, equity recapitalization raises concerns about repeating past mistakes under private ownership. Asset sales might provide short-term relief but could weaken operations and deter long-term investment. Resorting to a WISAR would protect consumers but burden taxpayers and risk creating moral hazard. Though a full nationalization may lower financing costs, it entails significant government spending and political challenges. In short, no path forward is risk-free or painless.

Despite recent developments, the situation remains fluid. Given the complexity of the WBS arrangement, fragile public trust, and ongoing political pressures, the outcome of Thames Water's recovery is far from certain. It is unclear whether the recapitalization will proceed smoothly or if state intervention will eventually be required. While the company has now selected KKR's bid for an equity injection, this development does not erase concerns about the long-term implications of PE ownership in essential services. KKR has not disclosed its goals or the rationale behind the investment. According to the Financial Times, there are "plenty of easier deals KKR could pursue and still meet its expected returns," especially since equally large and experienced infrastructure funds have tried for seven years to fix the utility's mess (Smith et al., 2025).

Ultimately, Thames Water requires a long-term solution. The £3 billion in super-senior loan maturing in 2.5 years is only a temporary fix. In addition to KKR's equity injection, restructuring, debt write-downs, and creditor haircuts seem likely, but the scope and impact on the wider sector are still unknown. Legal uncertainty also remains. The recent court ruling against Class B creditors in the emergency loan process raises questions about their treatment in a broader restructuring. Likewise, Kemble's shareholders appear set for a wipeout. What happens next will have far-

reaching implications, not only for stakeholders within the capital structure, but also for the governance and financing of critical infrastructure across the U.K.

Financial fixes alone will not address the deeper structural issues exposed by this crisis. Highly leveraged, fragmented ownership models have proven unsuitable for managing critical infrastructure, while weak regulatory oversight has allowed risks to go unchecked. This case study reveals that it is not enough to simply inject new capital or restructuring debt. A broader reconsideration of ownership models, regulatory powers, and investor accountability will be necessary to ensure long-term resilience. Without such reforms, Thames Water's current crisis risks becoming the first in a series of systemic failures across the sector.

7.3 How Should Essential Public Infrastructure be Owned?

As outlined in the beginning of the thesis, privatization was justified based on the fiscal and efficiency hypotheses (Braadbaart, 2001). Our study findings challenge both assumptions as Thames Water paints a different picture. This case did not show any signs of improved fiscal discipline or greater efficiency but rather financial fragility and misaligned incentives. Thames Water's crisis, culminating in the threat of a special administration under WISAR, underscores the challenges in the privatized model.

Our results illustrate how private ownership has not worked well for water utilities in the U.K. Stable financial flows from customer bills were manipulated to boost returns and fund shareholder distributions. Consistent with Zhang et al. (2022), Thames Water's persistent inefficiencies under both public and private ownership make it unclear which ownership model performs better. Although capital expenditure has risen over time, with RWE and later Kemble investing more than its public predecessor, these efforts have fallen short of addressing the utility's long-term infrastructure, social, and environmental needs. Hence, our study highlights little evidence of improved efficiency.

Moreover, the growing presence of foreign institutional investors in U.K. water utilities raises important questions about alignment and stewardship in essential services. Historically, SWFs, global pension funds, and infrastructure funds have contributed capital for projects that might otherwise struggle to secure funding (Sawant, 2010). However, if investors have limited ties to the U.K., their financial goals may not align with the public interest. Water providers have a unique social responsibility in delivering critical services to society (Pollalis and Hagistavrou,

2019). This case demonstrates a clear misalignment between the private investors in Thames Water and the needs of the public they were meant to serve.

Furthermore, these conflicts of interest are compounded when ownership is fragmented. When no single investor holds a controlling stake, accountability is hard to pinpoint, and no party assumes full responsibility for the company's strategic direction. The fragmented consortium of institutional investors, including major pension funds, SWFs, and their elected board members, showed limited long-term engagement. This led to frequent board turnover and the use of alternate directors. When investors are too large relative to their stake, incentives for active oversight diminish, reinforcing passive governance.

The U.K. represents a unique case as its water sector is partly privatized. Globally, public ownership of water is the norm. Approximately 90% of countries retain public control of water services (The Economist, 2018). In recent decades, many cities, regions, and communities have reversed earlier privatizations due to concerns over accountability, rising costs, and service quality. Between 2000 and 2017, there were at least 235 cases of water renationalization in 37 countries, affecting over 100 million people (Kishimoto et al., 2015). Despite continued support for privatization by institutions such as the World Bank and OECD, the prevailing global trend has shifted back toward public delivery models (OECD, 2009; World Bank, 2009). This shift reflects growing recognition that natural monopolies like water, where effective competition is limited, may be more appropriately managed under public or hybrid models (Pérard, 2009).

7.4 Broader Lessons

Thames Water epitomizes the stable, predictable cash flows and inflation-hedged features that institutional investors are normally drawn to. It is easy to regard water companies as safe investments thanks to their simple business models, natural monopolistic positions, and the essential nature of their services. However, this case study reveals the opposite, highlighting important lessons for future investors. Even investments deemed safe or low risk, particularly in regulated environments, can carry high risks. For the existing Kemble consortium, Thames Water became a high-risk, low-return investment, with almost no dividends and major write-offs. Thames Water raises warning flags, especially for investors seeking investments with low volatility, stable returns, and long-term prospects.

When Macquarie divested its entire stake, the Kemble consortium should have seen the glaring red flags (Blanc-Brude, Gupta and Whittaker, 2023). First, Thames Water's incentives were misaligned due to the extremely low regulated WACC, which was far below its actual market cost of capital. Second, the company had built up an unsustainable level of debt, making future dividend payouts unlikely in the coming years. Third, Thames Water's exposure to market risk factors was high. Rather than evaluating Thames Water in isolation, investors should have compared it to other infrastructure assets in the U.K. and globally.

In hindsight, the institutional backing of Thames Water may reflect incomplete due diligence, or perhaps overconfidence. At the time, the macroeconomic climate was strong, and key investors were outperforming their benchmarks. While pension fund returns typically range from 6–8%, OMERS delivered a net return of 11.5% in 2017, outperforming its 7.3% benchmark with $95 billion in AUM (OMERS, 2018). USS saw returns of approximately 20% with £60.5 billion in AUM (USS, 2017). In this context, Thames Water likely appeared to be a modest risk, and strong overall returns may have contributed to investor complacency. Given that the investment represented only a small portion of each fund's AUM, the resulting write-downs remained well within their capacity to absorb without major consequences.

This case offers broader lessons, not just for investors but also for regulators, policymakers, and other stakeholders. First, it underscores the need for active stewardship and stricter regulatory oversight for privatized infrastructure sectors, particularly when essential monopolistic services are involved. Second, although infrastructure is usually funded with a high proportion of debt, this case highlights how regulated utilities can become financially unstable if capital structures are excessively reliant on inflation-linked debt. Third, it raises questions about ownership scale and accountability: when institutional investors are so large that critical national infrastructure becomes a marginal holding, the risks of under-engagement increase.

8 Conclusion

8.1 Conclusion

This thesis set out to examine: (i) *Why Thames Water fell into financial distress and how the crisis should be resolved,* and (ii) *How essential public infrastructure should be owned and managed.* Our findings reveal that Thames Water's financial distress was mainly driven by two key factors:

the PE model applied by Macquarie and shortcomings in the regulatory framework. While the original intent behind privatization was ambitious, it failed in practice.

The resolution of the crisis remains uncertain, with significant political, operational, and financial costs. This case study finds that any resolution path will come with major trade-offs for stakeholders. Although equity recapitalization efforts are underway with KKR, concerns persist about the long-term sustainability of a new PE owner. What remains clear is that Thames Water will require billions in investment to modernize its aging infrastructure to meet future societal needs. Moreover, this case is not merely about a single utility's failure; it reflects the symptoms of deeper regulatory and structural problems across the U.K.'s essential services. Ultimately, our thesis underlines that it is unclear whether vital infrastructure assets should be owned by the private or public sector. While privatization may seem appealing in theory, our findings underscore the serious challenges it poses in practice.

8.2 Future Research

A key limitation of this study is timing, as the crisis is still ongoing and the outcome remains uncertain. Hence, additional case studies could revisit Thames Water post-crisis to assess the long-term consequences and outcomes. Since this thesis was a single-case study, future research could also include broader empirical research, with larger samples to validate our findings. Additionally, future research could conduct comparative studies across sectors and countries to explore how private ownership, and regulatory models influence utility performance and its suitability.

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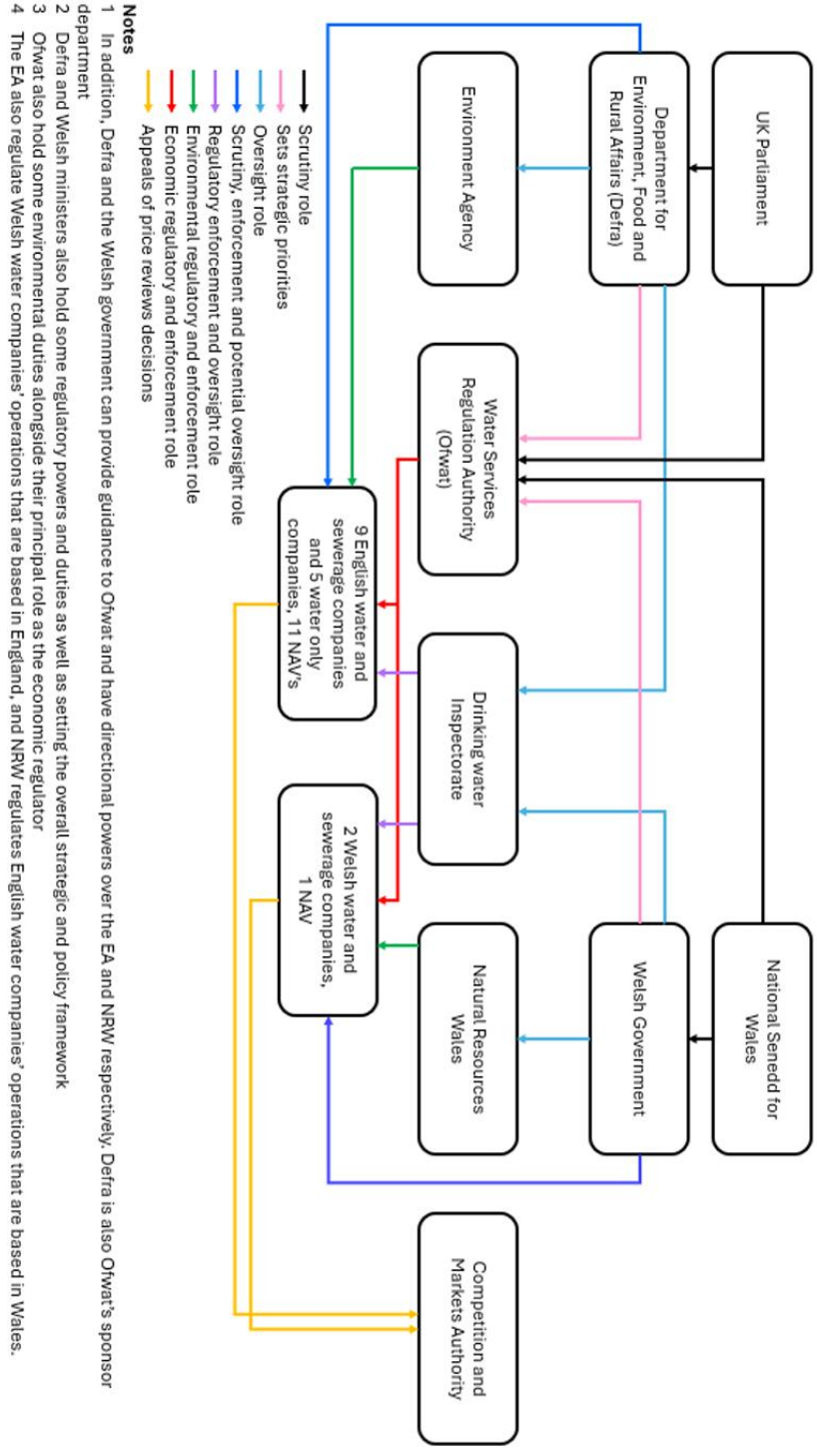
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10 Appendix

Appendix A. Water Sector Regulatory Framework



This table provides an overview of the regulatory framework governing the U.K. water sector. (Defra, 2025)

Appendix B. U.K. Formal Insolvency Regimes

Insolvency Regime	Description	Legislation
Administration	• Court-appointed administrator (an insolvency practitioner) takes control over an insolvent company • Initiated by a court order or by an out-of-court appointment. • Rescue the company as a going concern; or achieve better creditor outcome than liquidation • Broad moratorium on creditor actions, often resulting in reorganization or sale of the business	Insolvency Act 1986 (Sched. B1); Enterprise Act 2002
Company Voluntary Arrangements (CVAs)	• Binding agreement between an insolvent company and its creditors • Restructuring of unsecured debts for a specified time period • Approved if 75% of the value of the voting creditors agree • CVA cannot change the rights of secured or preferential creditors without their consent	Insolvency Act 1986, Part I
Administrative Receivership	• Secured creditor enforcement remedy (appointment of a receiver by a floating charge holder) to realize assets • Serves the appointing creditors interests; now mostly restricted. • Often leads to break-up or liquidation rather than rescue-restructuring.	Insolvency Act 1986, Part III (now largely limited by 2002 reforms)
Liquidation	• Winding-up of an insolvent company and distribution of assets to creditors, then dissolution • Can be either voluntary (initiated by members or creditors) or compulsory (court-ordered) • Used when rescue is not possible or as the last resort	Insolvency Act 1986, Parts IV & V
Schemes of Arrangement (Part 26)	• Court-sanctioned route to restructure or reorganize its obligations • Process requires two court hearings and approval of 75% in value from each creditor class	Companies Act 2006, Part 26
Restructuring Plan (Part 26A)	• Modelled on the same procedure as Part 26 • Cross-class cramdown mechanism; The court is allowed to approve a plan even if some classes dissent as long as certain legal conditions are met: (i) the plan is fair, (ii) at least one creditor class votes in favor, and (iii) the court is prepared to sanction the plan.	Companies Act 2006, Part 26A (added by CIGA 2020)
Moratorium	• Short-term debtor-in-possession breathing space (initial 20 business days) • Under supervision of a monitor to consider rescue options • Protects against creditor actions temporarily • Intended to facilitate CVAs, restructuring plans or new financing	Insolvency Act 1986, Part A1 (added by CIGA 2020)

This table lists formal insolvency regimes in the U.K., including the description, and applicable key legislation. (Mills & Reeve LLP, 2022)

Appendix C. Water Service and Supply Companies



Water and wastewater companies
Anglian Water – ANH
Dŵr Cymru – WSH
Hafren Dyfrdwy – HDD
Northumbrian Water – NES
Severn Trent Water – SVE
South West Water – SBB
Southern Water – SRN
Thames Water – TMS
United Utilities Water – UUW
Wessex Water – WSX
Yorkshire Water – YKY

Water only companies
Affinity Water – AFW
Portsmouth Water – PRT
South East Water – SEW
South Staffs Water – SSC
SES Water – SES

This illustrates the 16 water and sewerage companies in England and Wales.

[1] Water services provided under the Hartlepool Water name

[2] Water services provided under the Cambridge Water name

[3] Water services provided under the Essex & Suffolk Water name

[4] Water services provided under the Bournemouth Water name

[5] Water services provided under the Bristol Water name

[6] Hafren Dyfrdwy provides water services only in this area

[7] Severn Trent Water provides water services only in this area

(Ofwat, 2024h)

Appendix D. Ownership and Financing Structures of Water Companies

Company	Ownership Type[1]	WBS	Ultimate Parent	Investors	Investor Origin
Water and Sewerage Companies					
Anglian Water	Private	Yes	Anglian Water Group Limited	• CPP Investments (32.9%) • IFM Investors (19.8%) • Infinity Investments S.A (16.7%) • Igneo Infrastructure Partners (15.6%) • Camulodunum Investments (15%)	Canada, Australia, U.K., Luxembourg
Dŵr Cymru	Not-for-profit	Yes	Glas Cymru Holdings Cyfyngedig	• Limited by guarantee; owned by guarantors rather than shareholders	N/A
Hafren Dyfrdwy	Listed [LSE: SVT]	No	Severn Trent Plc	• Broad base of institutional shareholders including Lazard Asset Management LLC, L&G's Investment Management Limited, Impax Asset Management Limited, etc.	N/A
Northumbrian Water	Private	No	Northumbrian Water Group Limited	• CK Hutchison Holdings Limited (60%) • CK Asset Holdings Limited (15%) • KKR & Co. Inc. (25%)	Hong Kong, US
Severn Trent Water	Listed [LSE: SVT]	No	Severn Trent Plc	• Broad base of institutional shareholders including Lazard Asset Management LLC, L&G's Investment Management Limited, Impax Asset Management Limited, etc.	N/A
Southern Water	Private	Yes	Greensands Holdings Limited	• Macquarie Asset Management (82%) • Other minor shareholdings held by JP Morgan Asset Management, UBS Asset Management, Hermes Infrastructure Fund, etc. (18%)	Australia, US, Switzerland, U.K.
South West Water	Listed [LSE: PNN]	Yes	Pennon Group Plc	• Broad base of institutional shareholders including Lazard Asset Management LLC, Impax Asset Management Limited, Amundi Asset Management, etc.	N/A
Thames Water	Private	Yes	Kemble Water Holdings Limited	• Ontario Municipal Employees Retirement System (31.78%) • Universities Superannuation Scheme (19.71%) • Infinity Investments S.A. subsidiary of ADIA (9.90%) • British Columbia Investment Management Corporation (8.71%) • Hermes GPE (8.7%) • China Investment Corporation (8.7%) • Queensland Investment Corporation (5.35%) • Auilda GP Inc. (5%) • Stichting Pensioenfonds Zorg en Welzijn (2.17%)	Canada, U.K., UAE, China, Australia, Netherlands
United Utilities	Listed [LSE: UU]	No	United Utilities Group Plc	• Broad base of institutional shareholders including BlackRock, Inc., The Vanguard Group, Inc., Lazard Asset Management Pacific Co., etc.	N/A
Wessex Water	Private	No	YTL Corporation Berhad	• YTL Corporation Berhad (100%)	Malaysia

Yorkshire Water	Private	Yes	Kelda Holdings Limited	• GIC Special Investments (33.56%) • Corsair Infrastructure Management (30.32%) • Deutsche Asset Management (23.37%) • SAS Trustee Corporation (12.75%)	Singapore, US, Australia
Water Only Companies					
Affinity Water	Private	Yes	Daiwater Investment Limited	• Allianz Infrastructure Holding I Pte. Limited (36.6%) • HICL Infrastructure Plc (33.2%) • DIF Tamblin Limited (26.8%) • Small group of co-investors (3.4%)	Germany, U.K.
Bristol Water	Listed [LSE: PNN]	Yes	Pennon Group Plc	• Broad base of institutional shareholders including Lazard Asset Management LLC, Impax Asset Management Limited, Amundi Asset Management, etc.	N/A
Portsmouth Water	Private	Yes	Southern Region Water Holding Limited	• Ancala Partners LLP (100%)	U.K.
South East Water	Private	No	HDF Holdings Limited	• Utilities of Australia Pty (50%) • NatWest Pension Trustee Limited (25%) • Desjardins Entities (25%)	Australia, U.K., Quebec
South Staffs Water	Private	No	South Staffordshire Plc	• Arjun Infrastructure Partners Limited (100%)	U.K.
SES Water	Listed [LSE: PNN]	Yes	SES Group Holdings Limited, formerly Sumisho Osaka Gas Water U.K. Limited	• Broad base of institutional shareholders including Lazard Asset Management LLC, Impax Asset Management Limited, Amundi Asset Management, etc.	N/A

The table displays the ownership type, WBS arrangement, and ownership structure of water companies in the U.K..
[1] "Listed" refers only to regulated companies whose ultimate parent is listed on the London Stock Exchange (LSE).
(Affinity Water, n.d.; Anglian Water Group, n.d.a, n.d.b; Blanc-Brude, Gupta and Whittaker, 2023; Dŵr Cymru Welsh Water, n.d.; Severn Trent PLC, n.d.a, n.d.b; Kelda Group, n.d.; Macquarie Asset Management, 2024; Northumbrian Water Limited, n.d.; Pennon Group PLC, n.d.; Portsmouth Water, 2021; Southern Water, n.d.; South East Water, n.d.; South West Water, n.d.; South Staffs Water, n.d.; SES Water, 2024; Thames Water, n.d.d; United Utilities Group PLC, n.d.; Wessex Water, n.d.)

Appendix E. Macquarie's Portfolio Companies in the U.K.

Company	Description
Transportation	
AGS Airports	Aberdeen, Glasgow, and Southampton airports
Farnborough Airport	Business aviation airport
Roadchef	Operates motorway service areas
Renewable Energy – Offshore Wind	
Gwynt y Môr	Offshore wind farm off the coast of North Wales
Rhyl Flats	Offshore wind farm in Liverpool Bay
Lincs	Offshore wind farm off the east coast of England
Lynn and Inner Dowsing	Adjacent offshore wind farms off the Lincolnshire coast
Race Bank	Large offshore wind farm off the Norfolk coast
Sheringham Shoal	Offshore wind farm off the Norfolk coast
Renewable Energy – Other	
Island Green Power	Solar power developer
Eku Energy	Global battery energy storage platform
Energy & Utilities	
Cadent Gas	Largest gas distribution network
Southern Water	Water and wastewater services for southern England
National Grid Gas (now National Gas)	U.K.'s gas transmission and metering business
Digital Infrastructure	
KCOM	Broadband and telecom provider based in Hull
VIRTUS Data Centres	Operates data centers
Arqiva	Provides broadcast and telecoms infrastructure

This table lists Macquarie's portfolio companies in the U.K. as of 2025.
(Macquarie Group, n.d.c)

Appendix F. Thames Water's Environmental Violations

Year	Environmental Violations
2007	A chemical spill from the Beddington sewage works led to the death of over 2,000 fish in the River Wandle. Thames Water was fined £125,000, later reduced to £50,000 on appeal.
2011	Approximately 230,000 cubic meters of sewage were released from Mogden Sewage Treatment Works, resulting in the death of 26,000 fish.
2012	A sewage spill into the Chase Brook near Newbury occurred due to clogged pumps. Thames Water was fined £250,000 for this incident.
2013-2014	Thames Water discharged approximately 1.4 billion liters of untreated sewage into the River Thames and its tributaries, affecting areas such as Aylesbury, Didcot, Henley, Little Marlow, and Littlemore.
2016	Thames Water was fined £1 million for polluting the Grand Union Canal in Hertfordshire between July 2012 and April 2013.
2017	A record £20.3 million fine was imposed on Thames Water for the 2013–2014 sewage discharges, marking the largest freshwater pollution case undertaken by the Environment Agency at the time.

This table shows Thames Water's environmental violations under Macquarie's ownership.
(BBC News, 2010; Vidal, 2011; DEFRA, 2016; BBC News, 2016; BBC News, 2017)

Appendix G. External Shareholders Description

Investor	Description
Ontario Municipal Employees Retirement System	One of Canada's largest public pension funds, managing over C$100 billion in assets with significant infrastructure investment experience.
Universities Superannuation Scheme	The main pension provider for academic staff in U.K. higher education institutions.
Infinity Investments SA	A subsidiary of the Abu Dhabi Investment Authority, one of the world's most prominent sovereign wealth funds.
British Columbia Investment Management Corporation	Manages investment portfolios for public sector pension plans and government bodies in British Columbia.
Hermes GPE	An independent investment firm focused on global private markets, often working with institutional clients like pension funds.
China Investment Corporation	China's state-owned sovereign wealth fund, investing globally on behalf of the Chinese government.
Queensland Investment Corporation	A diversified investment manager overseeing capital for Queensland's public sector superannuation and other funds.
Aquila GP Inc.	An infrastructure asset manager under Fiera Infrastructure, investing on behalf of institutional clients across infrastructure sectors.
Stichting Pensioenfonds Zorg en Welzijn	A major Dutch pension fund servicing the healthcare and social work sectors, as well as their employers.

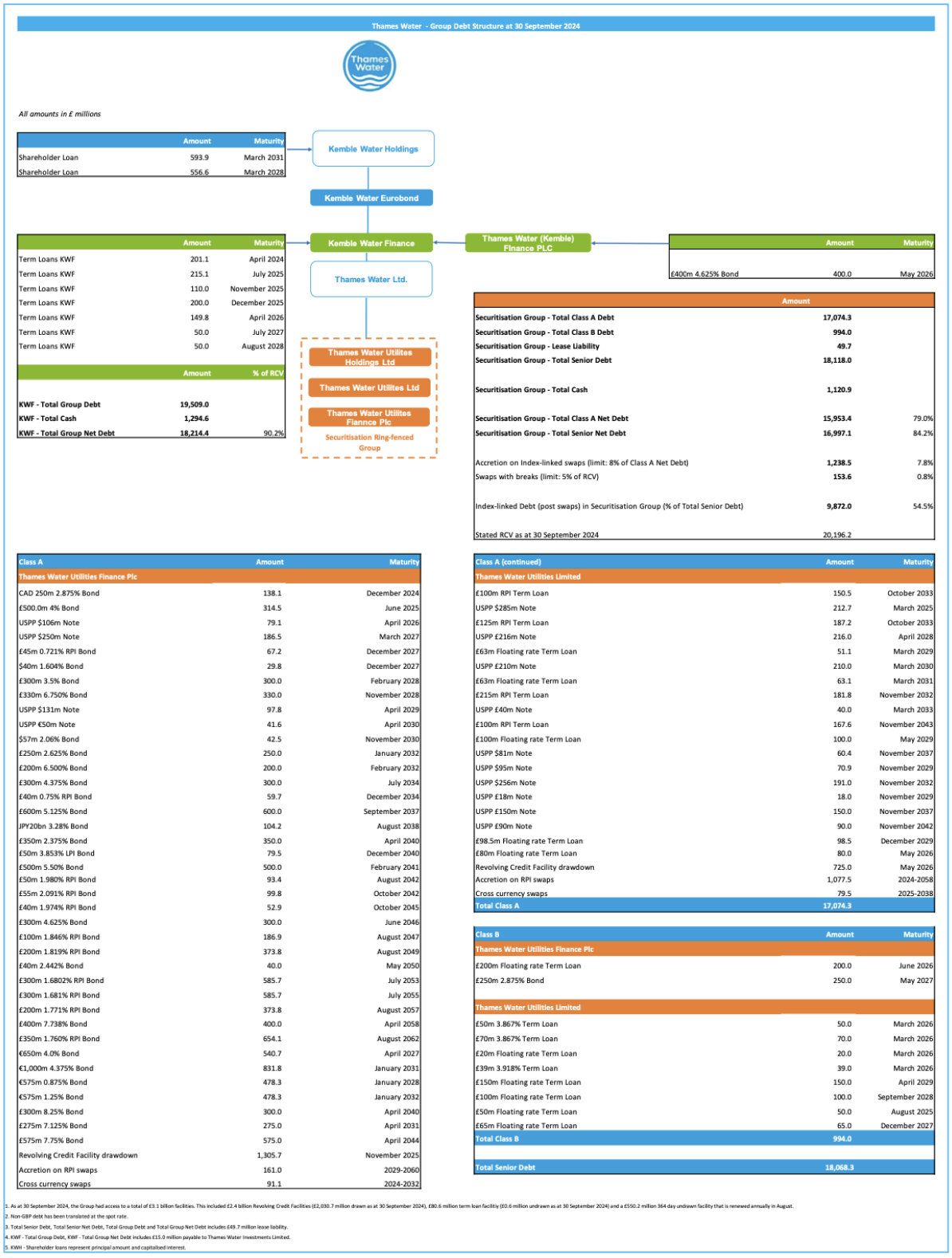
This table lists the institutional investors that hold ownership stakes in Kemble Water as of 2025.
(Thames Water, n.d.d)

Appendix H. Thames Water's Historical Financials

	2024	2023	2022	2021
Statements of income (£m)				
Revenue	2,518	2,265	2,177	2,107
Operating expenses excluding impairment losses on trade receivables and contract assets	(2,110)	(1,994)	(1,833)	(1,703)
Impairment losses on trade receivables and contract assets	(40)	(22)	(10)	(37)
Total operating expenses	(2,150)	(2,017)	(1,843)	(1,740)
Other operating income	149	108	96	122
Operating profit	517	356	429	489
Finance income	277	224	129	188
Finance expense	(670)	(700)	(513)	(396)
Net gains/losses on financial instruments	152	122	(896)	(522)
Impairment losses on intercompany loan	(119)	-	-	-
Profit/(loss) on ordinary activities before taxation	157	2	(851)	(242)
Tax (charge)/credit on profit/(loss) on ordinary activities	(82)	(32)	(123)	43
Profit/(loss) for the year	75	(30)	(973)	(199)
Balance sheets, (£m)				
Non-current assets	21,767	20,437	19,559	18,852
Current assets	2,141	2,647	1,119	1,150
Total	23,908	23,085	20,678	20,003
Current liabilities	3,751	3,341	1,684	1,891
Non-current liabilities	18,378	17,918	17,164	15,317
Total equity	1,779	1,825	1,831	2,795
Total	23,908	23,085	20,678	20,003
Cash flow statements, (£m)				
Net cash generated by operating activities	1,381	1,116	1,193	932
Investing activities:				
Purchase of property, plant and equipment	(1,959)	(1,555)	(1,272)	(1,050)
Purchase of intangible assets	(43)	(44)	(72)	(55)
Proceeds/(costs) from sale of property, plant and equipment	6	(7)	1	11
Interest received	191	230	113	200
Repayment of loans by parent company	-	444	-	59
Net cash used in investing activities	(1,805)	(932)	(1,230)	(536)
Financing activities:				
New loans raised	3,099	5,071	3,585	1,574
Repayment of borrowings	(2,667)	(3,221)	(3,322)	(1,846)
Repayment of lease principal	(10)	(100)	(10)	(11)
Proceeds from derivative settlement	28	4	21	(15)
Payment for derivative settlement	(172)	(413)	-	-
Interest paid	(334)	(187)	(272)	(321)
Net financing fees paid	-	-	1	(8)
Dividends paid	(196)	(45)	(37)	(33)
Net cash (used in)/generated by financing activities	258	1,227	(33)	(660)
Net (decrease)/increase in cash and cash equivalents	(681)	1	(70)	(264)
Net cash and cash equivalents at beginning of period	1,836	1,835	495	758
Net cash and cash equivalents at end of period	1,155	1,836	425	495

This table consolidates key financial data for Thames Water Utilities Limited's Group financial statements for the fiscal years ending 31 March 2021 through 31 March 2024. Figures include total reported values, incl. Bazalgette Tunnel Limited (BTL) arrangement, whose financials are recognized where required under accounting standards. (Thames Water Utilities Limited, 2022; Thames Water Utilities Limited, 2024a)

Appendix I. Thames Water's Group Debt Structure



Thames Water - Group Debt Structure at 30 September 2024

All amounts in £ millions

	Amount	Maturity
Shareholder Loan	593.9	March 2031
Shareholder Loan	556.6	March 2028

Kemble Water Holdings

Kemble Water Eurobond

	Amount	Maturity
Term Loans KWF	201.1	April 2024
Term Loans KWF	215.1	July 2025
Term Loans KWF	110.0	November 2025
Term Loans KWF	200.0	December 2025
Term Loans KWF	149.8	April 2026
Term Loans KWF	50.0	July 2027
Term Loans KWF	50.0	August 2028

	Amount	% of RCV
KWF - Total Group Debt	**19,509.0**	
KWF - Total Cash	**1,294.6**	
KWF - Total Group Net Debt	**18,214.4**	90.2%

Kemble Water Finance

Thames Water (Kemble) Finance PLC

	Amount	Maturity
£400m 4.625% Bond	400.0	May 2026

Thames Water Ltd.

Thames Water Utilites Holdings Ltd

Thames Water Utilites Ltd

Thames Water Utilites Fiannce Plc

Securitisation Ring-fenced Group

	Amount	
Securitisation Group - Total Class A Debt	**17,074.3**	
Securitisation Group - Total Class B Debt	**994.0**	
Securitisation Group - Lease Liability	**49.7**	
Securitisation Group - Total Senior Debt	**18,118.0**	
Securitisation Group - Total Cash	**1,120.9**	
Securitisation Group - Total Class A Net Debt	**15,953.4**	79.0%
Securitisation Group - Total Senior Net Debt	**16,997.1**	84.2%
Accretion on Index-linked swaps (limit: 8% of Class A Net Debt)	**1,238.5**	7.8%
Swaps with breaks (limit: 5% of RCV)	**153.6**	0.8%
Index-linked Debt (post swaps) in Securitisation Group (% of Total Senior Debt)	**9,872.0**	54.5%
Stated RCV as at 30 September 2024	20,196.2	

Class A	Amount	Maturity
Thames Water Utilities Finance Plc		
CAD 250m 2.875% Bond	138.1	December 2024
£500.0m 4% Bond	314.5	June 2025
USPP $106m Note	79.1	April 2026
USPP $250m Note	186.5	March 2027
£45m 0.721% RPI Bond	67.2	December 2027
$40m 1.604% Bond	29.8	December 2027
£300m 3.5% Bond	300.0	February 2028
£330m 6.750% Bond	330.0	November 2028
USPP $131m Note	97.8	April 2029
USPP €50m Note	41.6	April 2030
$57m 2.06% Bond	42.5	November 2030
£250m 2.625% Bond	250.0	January 2032
£200m 6.500% Bond	200.0	February 2032
£300m 4.375% Bond	300.0	July 2034
£40m 0.75% RPI Bond	59.7	December 2034
£600m 5.125% Bond	600.0	September 2037
JPY20bn 3.28% Bond	104.2	August 2038
£350m 2.375% Bond	350.0	April 2040
£50m 3.853% LPI Bond	79.5	December 2040
£500m 5.50% Bond	500.0	February 2041
£50m 1.980% RPI Bond	93.4	August 2042
£55m 2.091% RPI Bond	99.8	October 2042
£40m 1.974% RPI Bond	52.9	October 2045
£300m 4.625% Bond	300.0	June 2046
£100m 1.846% RPI Bond	186.9	August 2047
£200m 1.819% RPI Bond	373.8	August 2049
£40m 2.442% Bond	40.0	May 2050
£300m 1.6802% RPI Bond	585.7	July 2053
£300m 1.681% RPI Bond	585.7	July 2055
£200m 1.771% RPI Bond	373.8	August 2057
£400m 7.738% Bond	400.0	April 2058
£350m 1.760% RPI Bond	654.1	August 2062
€650m 4.0% Bond	540.7	April 2027
€1,000m 4.375% Bond	831.8	January 2031
€575m 0.875% Bond	478.3	January 2028
€575m 1.25% Bond	478.3	January 2032
£300m 8.25% Bond	300.0	April 2040
£275m 7.125% Bond	275.0	April 2031
£575m 7.75% Bond	575.0	April 2044
Revolving Credit Facility drawdown	1,305.7	November 2025
Accretion on RPI swaps	161.0	2029-2060
Cross currency swaps	91.1	2024-2032

Class A (continued)	Amount	Maturity
Thames Water Utilities Limited		
£100m RPI Term Loan	150.5	October 2033
USPP $285m Note	212.7	March 2025
£125m RPI Term Loan	187.2	October 2033
USPP £216m Note	216.0	April 2028
£63m Floating rate Term Loan	51.1	March 2029
USPP £210m Note	210.0	March 2030
£63m Floating rate Term Loan	63.1	March 2031
£215m RPI Term Loan	181.8	November 2032
USPP £40m Note	40.0	March 2033
£100m RPI Term Loan	167.6	November 2043
£100m Floating rate Term Loan	100.0	May 2029
USPP $81m Note	60.4	November 2037
USPP $95m Note	70.9	November 2029
USPP $256m Note	191.0	November 2032
USPP £18m Note	18.0	November 2029
USPP £150m Note	150.0	November 2037
USPP £90m Note	90.0	November 2042
£98.5m Floating rate Term Loan	98.5	December 2029
£80m Floating rate Term Loan	80.0	May 2026
Revolving Credit Facility drawdown	725.0	May 2026
Accretion on RPI swaps	1,077.5	2024-2058
Cross currency swaps	79.5	2025-2038
Total Class A	**17,074.3**	

Class B	Amount	Maturity
Thames Water Utilities Finance Plc		
£200m Floating rate Term Loan	200.0	June 2026
£250m 2.875% Bond	250.0	May 2027
Thames Water Utilities Limited		
£50m 3.867% Term Loan	50.0	March 2026
£70m 3.867% Term Loan	70.0	March 2026
£20m Floating rate Term Loan	20.0	March 2026
£39m 3.918% Term Loan	39.0	March 2026
£150m Floating rate Term Loan	150.0	April 2029
£100m Floating rate Term Loan	100.0	September 2028
£50m Floating rate Term Loan	50.0	August 2025
£65m Floating rate Term Loan	65.0	December 2027
Total Class B	**994.0**	
Total Senior Debt	**18,068.3**	

1. As at 30 September 2024, the Group had access to a total of £3.1 billion facilities. This included £2.4 billion Revolving Credit Facilities (£2,030.7 million drawn as at 30 September 2024), £80.6 million term loan facility (£0.6 million undrawn as at 30 September 2024) and a £550.2 million 364 day undrawn facility that is renewed annually in August.
2. Non-GBP debt has been translated at the spot rate.
3. Total Senior Debt, Total Senior Net Debt, Total Group Debt and Total Group Net Debt includes £49.7 million lease liability.
4. KWF - Total Group Debt, KWF - Total Group Net Debt includes £15.0 million payable to Thames Water Investments Limited.
5. KWH - Shareholder loans represent principal amount and capitalised interest.

This table provides a detailed breakdown of Thames Water's group debt structure as of September 30, 2024. (Thames Water Utilities Limited, 2024d)

Appendix J. Comparison of Thames Water's Market WACC

Period	WACC[1]	COE[2]	COD[3]	ERP[4]	OBS[5]
		Thames Water			
2000-2004	12.9	14.4	5.3	10.7	5
2005-2009	14.2	15.1	5	11.7	5
2010-2014	12.1	13.3	2.8	11.8	5
2015-2019	6.9	9.9	2.3	9	5
Since 2020	8.5	10.9	2	9.7	4
		U.K. Utilities			
2000-2004	11.1	13.9	5.3	10.2	108
2005-2009	10.1	14.7	5.1	11.4	144
2010-2014	8.1	12.6	4	10.9	165
2015-2019	5.8	9.2	2.6	8.2	176
Since 2020	6.9	9.7	2.4	8.7	135
		Europe Utilities			
2000-2004	10.8	18.4	4.6	16	4
2005-2009	9.5	15.8	5.3	12.8	35
2010-2014	6.9	15.2	3.8	12.3	66
2015-2019	5.1	9.3	1.8	8.6	89
Since 2020	6.6	9.8	1.6	9.3	75
		Global Utilities			
2000-2004	9	17.3	6	13.1	15
2005-2009	9.8	16	6.6	11.7	52
2010-2014	8.7	12.3	5.6	8.9	81
2015-2019	7	10.2	3.7	7.6	96
Since 2020	7.7	11.4	4.7	9.2	77

This table compares Thames Water's market WACC with that of water utilities in the U.K., Europe, and globally across multiple time periods.

[1] WACC – Weighted Average Cost of Capital

[2] COE – Cost of Equity

[3] COD – Cost of Debt

[4] ERP – Equity Risk Premium

[5] OBS – Observations

(Blanc-Brude, Gupta and Whittaker, 2023).

Appendix K. AI Disclosure

This thesis used ChatGPT (OpenAI versions 3.5, 4.0-mini, and 4.5) to some extent during the writing process. These AI-tools were mainly used to improve sentence structure, clarify meaning, and ensure consistency in tone and language.

We recognize that the use of AI tools comes with inherent risks. Suggestions may at times lack depth or cohesion, particularly in more nuanced or technical sections. Additionally, it can generate inaccurate or hallucinated content. To mitigate these risks, all outputs were independently reviewed, verified, and revised before inclusion to ensure reliability and accuracy.