Industry Performance

Executive Summary

The Water Supply and Irrigation Systems industry has performed well over the past five years. Population growth, as well as greater incidences of drought and other adverse weather conditions, has increased demand for water supplied by industry operators. Additionally, economic growth has expanded water demand from both downstream commercial and industrial customers. Increased business activity has increased the amount of water demanded from retailers, restaurants and other commercial customers for provision to their customers and employees. Growth in manufacturing and other industrial activity, which often uses copious amounts of water in their business operations, has expanded water demand from the industrial sector. This growth in demand, in line with droughts and other threats to supply, has prompted many public utilities commissions to increase water rates to curb over consumption, further benefiting industry revenue. Finally, the industry has consolidated over the past five years as private companies increasingly purchased the rights to operate public water utilities and larger public utilities acquired smaller, less efficient distribution systems. As a result of these trends, both industry revenue and profit have risen in recent years. IBISWorld consequently forecasts that industry revenue will grow at an annualized rate of 1.3% over the five years to 2015, with revenue forecast to expand 0.4% to $68.7 billion in 2015.

Further rate increases and continued M&A activity will support revenue growth

The Water Supply and Irrigation Systems industry is expected to grow at a faster rate over the five years to 2020. Per capita water consumption is forecast to decline, as increasing concern over water conservation drives policy aimed at reducing consumption. However, growth in water rates is anticipated to represent part of this policy, to the benefit of the industry. In addition, while per capita consumption is expected to decline, aggregate consumption is forecast to expand as the population and economy grows. Finally, the industry is anticipated to continue to consolidate as larger public and private companies continue to acquire underperforming smaller water supply systems, positively influencing industry operating efficiency and revenue growth. Consequently, both industry revenue and profit are expected to rise in upcoming years. Overall, IBISWorld expects industry revenue to grow at an annualized rate of 2.1% over the five years to 2020 to $76.0 billion.

Key External Drivers

Local and state government investment

Local and state governments are responsible for the lion's share of investment in national water supply systems. Increased local and state government investment in water supply infrastructure expands industry operating capacity by increasing the volume of water that can be distributed through industry distribution systems and extending distribution systems to reach a larger downstream market of customers. Local and state government investment is expected to increase in 2015, representing a potential opportunity for the industry.

Number of households

Households represent the largest source of revenue for the Water Supply and Irrigation Systems industry. As the number of households rises, so does

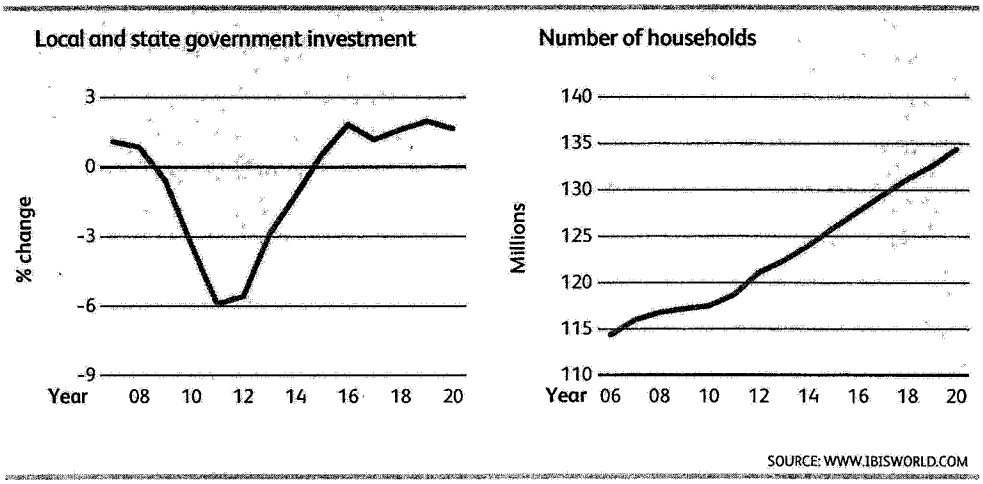
Industry Performance

Key External Drivers continued

demand for water from residential customers, benefiting industry operators. The number of households is expected to expand in 2015.

Average annual precipitation
Demand for water from public water supply systems tends to increase during periods of low precipitation, boosting industry sales. However, regulators often impose water rationing during periods of drought, reducing the volume of industry water sales to the detriment of industry revenue growth. As a result, increased precipitation tends to have a positive effect on industry revenue growth. Average annual precipitation is forecast to decline in 2015, posing a potential threat to the industry.

Agricultural price index
The majority of water supplied for irrigation is not sourced from public water supply systems. However, an estimated 4.1% of industry revenue is generated from sales of water for the purpose of irrigation. As the price of agricultural products rises, farmers tend to demand more water for irrigation, which benefits industry operators. The agricultural price index is anticipated to decline slightly in 2015.



SOURCE: WWW.IBISWORLD.COM

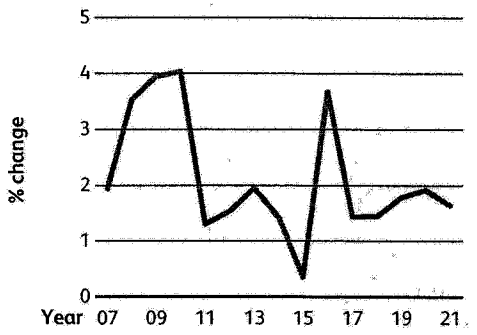
Industry Performance

Current Performance

Companies in the Water Supply and Irrigation Systems industry sell water as a public utility to households, businesses and public entities throughout the United States. Industry companies operate water treatment plants and infrastructure within water supply systems, including pumping stations, aqueducts and distribution mains. According to estimates from the Environmental Protection Agency (EPA), about 84.0% of water supply operators are government owned, with the remaining operators private entities. The industry does not include sewage treatment facilities.

Revenue for the Water Supply and Irrigation Systems is forecast to grow at an annualized rate of 1.3% over the five years to 2015, with revenue expected to grow 0.4% in 2015 to $68.7 billion. This growth has been driven by an expansion in the volume of water sold, as well as water price rate hikes. These water price rate hikes have been implemented due to higher water demand as a result of droughts and drier weather conditions. Water rates are set by each state's public utilities commission, utilities regulators that set prices within their jurisdictions, as well as municipal utilities commissions (together referred to as PUCs). PUCs set water price rates based on a variety of factors, including the volume of water in demand over a certain period of time and the amount of revenue needed to pay for capital investments used in the maintenance and upgrading of the water supply infrastructure. Many PUCs granted rate increases over the past five years, allowing industry operators to charge downstream consumers higher prices for the water they sell, driving industry growth over the period.

Industry revenue



SOURCE: WWW.IBISWORLD.COM

Growth in water demand

Following a slight blip in the aftermath of the recession, water demand from both households and businesses has grown over the past five years. Aggregate household demand for water across the country has grown primarily due to population growth, as well as the increased prevalence of droughts and other adverse weather conditions that have strained the quantity of water available. Additionally, economic growth has increased the amount of water demanded by both commercial and industrial customers. As the number of customers patronizing retail outlets and restaurants has increased, these businesses have demanded more water to provide for both their employees and customers. Industrial businesses often use large quantities of water in their operations. For example, large quantities of water are used in the production of steel. As manufacturing and other industrial activity has expanded, demand for water from these customers has risen strongly as well. Finally, while only a fraction of the water used in irrigation is sourced from public water utilities, increased agricultural activity, driven by growth in crop prices, has nonetheless expanded demand from farmers for the water provided by industry operators.

Industry Performance

Growth in water demand continued

Water must be thoroughly treated prior to being distributed through public water utilities systems. As a result, water treatment costs have expanded over the past five years as downstream demand for water has increased. To cover these costs, many industry operators have successfully applied for water rate price increases from PUCs, further boosting industry revenue.

Privatization and consolidation

Public water-supply entities have increasingly become privatized over the past five years. Driven by low tax revenue in the aftermath of the recession, many municipal water authorities have opted to outsource the provision of water utilities within their jurisdictions to cushion their struggling budgets. At the same time, many smaller water distribution utilities have been merged into larger systems over the past five years in an attempt to improve the overall efficiency of water distribution over a geographic area.

These trends have been accompanied by an increase in the number of mergers and acquisitions (M&A) in the industry, as private-sector companies and larger public water utilities entities gain control over underperforming water supply and irrigation operations to take advantage of economies of scale. For example, American Water, the industry's largest player, acquired 11 regulated water systems and 48 wastewater systems in May 2011. In line with this M&A activity, the number of entities operating in the industry is anticipated to fall at an annualized rate of 0.2% over the five years to 2015 to 3,028 enterprises. Industry employment has also fallen as workforces have been trimmed in line with this M&A activity, with the number of industry employees forecast to decline at an annualized rate of 0.1% over the same period of time to 199,422 total workers.

The integration of smaller water systems into larger ones has also had a positive effect on margins

Despite this consolidation, the Water Supply and Irrigation Systems industry is still highly fragmented. While some water utilities systems encompass enormous populations, such as that of New York City, there remain thousands of systems serving fewer than 100 people. In addition, while the operation of water supply systems is increasingly being outsourced to larger private companies, many of these companies are small themselves, with the vast majority of water supply systems still operated by local public entities.

Profit growth

The privatization of water supply infrastructure and the general consolidation of the industry have had an overall positive effect on industry profit margins. With interest rates remaining low, private companies have been able to purchase companies by borrowing at favorable rates. For those companies that have signed contracts that grant incentives to invest in the infrastructure they operate, whether via mandate or medium-term ownership rates, investment in existing infrastructure has increased in an attempt to improve distribution efficiency to the benefit of industry margins. The integration of smaller water systems into larger ones has also had a positive effect on margins by reducing overall infrastructure requirements.

Industry Performance

Industry Outlook

Growing concern over the conservation of water is anticipated to drive policy aimed at the reduction of water usage, reducing per capita demand for water supplied by industry operators. However, economic and population growth are nonetheless forecast to increase the aggregate volume of water consumed by households, businesses and public entities in upcoming years. Additionally, the raising of water rate prices is expected to make up an important part of policies aimed at reducing per capita water consumption, benefiting industry revenue. As a result, industry revenue is expected to grow at an annualized rate of 2.1% over the five years to 2020 to $76.0 billion.

Rate increases

Per capita water consumption is expected to decrease as a result of water conservation measures in upcoming years to the detriment of industry revenue growth. However, rate increases are anticipated to more than offset this expected decline. The investment required to maintain the nation's water-supply system will necessitate increased prices charged to the industry's downstream customers. Public utilities commissions (PUCs) are expected to increasingly approve these rate increases, as increased municipal and local tax revenue collection increases the ability of government entities to co-fund infrastructure improvements.

In line with these expected trends, the Environmental Protection Agency (EPA) estimates that $335.0 billion will be invested in the replacement of aging infrastructure from 2007 to 2026. As the privatization of water utilities becomes more common, private companies are expected to be responsible for a growing share of this investment. Finally, many PUCs will implement measures that base rate approval on the previous year's revenue, as opposed to the currently more prevalent practice of basing rates on the volume of water distributed to downstream customers. This strategy better ensures the long-term growth prospects for water utilities operators, further incentivizing investment in infrastructure.

Industry profit will likely benefit from the industry's consolidation over the following five years

Continued industry consolidation

The trend of mergers and acquisitions in the industry over the previous five years is expected to continue over the five years to 2020. Consolidation offers multiple benefits to operating efficiency. These benefits include the development of technological expertise that would not be feasible in a smaller organization, improved capacity to meet increasingly stringent environmental regulations and an enhanced ability to fund necessary capital investment.

Larger utilities that have greater access to capital are generally more capable of making mandated and other necessary infrastructure upgrades to water and wastewater systems. In addition, water and wastewater utilities with large customer segments spread across broad geographic regions may more easily absorb the risk of adverse weather, such as droughts, excessive rain and cool temperatures in specific areas. Larger utilities also have cost

Industry Performance

Continued industry consolidation continued

advantages because they can spread overhead expenses over a larger customer base, reducing the costs to serve each customer. Many administrative and support activities can be efficiently centralized to gain economies of scale and streamline the implementation of regulatory guidelines. Companies that participate in industry consolidation have the potential to improve operating efficiencies, lower unit costs and improve service. As a result of these benefits, large public water utilities systems and private companies are expected to expand their industry market share by acquiring underperforming smaller water supply systems. The efficiency benefits of the industry's consolidation are forecast to have a positive influence on industry profit margins.

As a result of this expected M&A activity, the number of entities operating in the industry is expected to decline at an annualized rate of 0.2% over the five years to 2020 to 3,004 total enterprises. In line with this decline in the number of industry enterprises, the number of industry employees is also forecast to fall at an annualized rate of 0.1% over the five years to 2020 to 198,432 total workers. Nonetheless, the vast majority of industry operators are expected to remain small, municipally owned and operated entities, with the privatization of public assets and consolidation of smaller water supply systems into larger systems only anticipated to occur very slowly.

Industry Performance

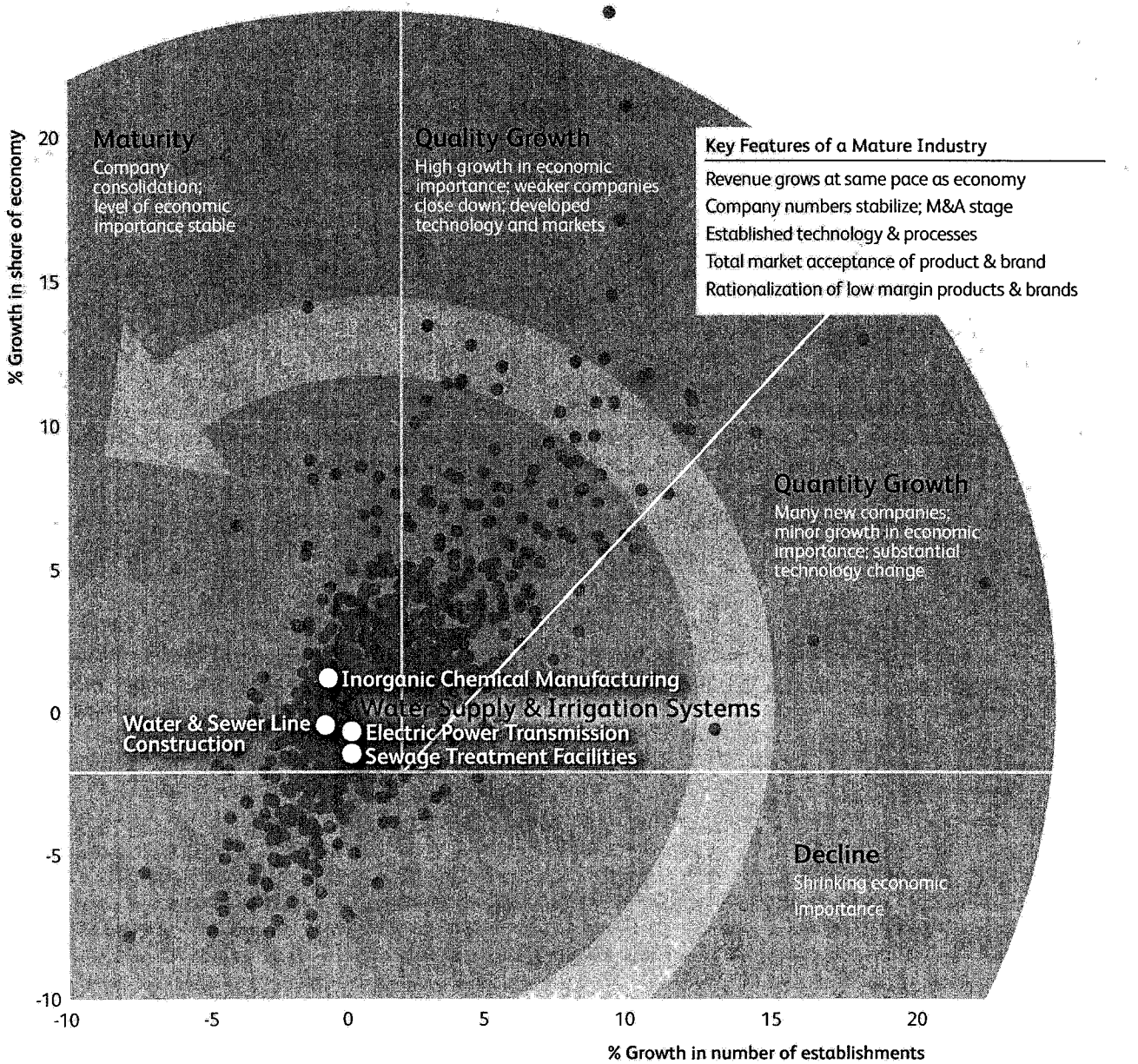
Life Cycle Stage

Industry services are essential to the functioning of the US economy

IVA is expected to grow in line with US GDP growth

The industry is undergoing structural change

The industry is experiencing merger and acquisition activity



SOURCE WWW.IBISWORLD.COM

Industry Performance

Industry Life Cycle

The Water Supply and Irrigation Systems industry is in the mature stage of its life cycle. Industry value added (IVA), a measure of an industry's contribution to the overall economy, is forecast to grow at an annualized rate of 2.6% over the ten years to 2020. In comparison, US GDP is anticipated to grow at an annualized rate of 2.5% over the same period of time. IVA growth in line with that of GDP is a typical indicator of an industry in the mature stage of its life cycle.

A properly functioning public water supply system is absolutely critical to the functioning of any modern economy. As a result, public funding for water treatment and distribution infrastructure has long been high in order to satisfy the requirements of the US population and economy. While funding can vary year-over-year, the Water Supply and Irrigation Systems industry grows in line with population and economic growth over the medium- and long-term.

The technology used in the distribution of water has not changed dramatically over the past 10 years. However, there have been some changes in the way in which water is treated, as well as recycled. These changes have come about partially as a result of increased regulation by the Environmental Protection Agency (EPA). With increased industry regulation expected, innovations in industry operations are likely to develop in upcoming years.

Finally, while not fundamentally altering the nature of industry activities, the Water Supply and Irrigation Systems industry has been undergoing structural change in recent years in the forms of increased privatization of public water systems, as well as the consolidation of smaller systems into larger ones. While the vast majority of water systems are still owned and operated by public entities, municipalities are increasingly contracting out private operators to provide public water distribution services within their jurisdictions. In addition, smaller water distribution systems, such as those that serve small rural communities, are increasingly being integrated into larger systems.

Products & Markets

Supply Chain | Products & Services | Demand Determinants
Major Markets | International Trade | Business Locations

Supply Chain

KEY BUYING INDUSTRIES

31-33	**Manufacturing in the US** Manufacturers and other industrial companies make heavy use of water from public utilities in their operations.
42	**Wholesale Trade in the US** Commercial businesses purchase water from public utilities for use in their operations.
44-45	**Retail Trade in the US** Commercial businesses purchase water from public utilities for use in their operations.
92	**Public Administration in the US** Government entities use water sourced from public utilities for use in their day-to-day operations.
99	**Consumers in the US** Households represent the most important market for the Water Supply and Irrigation Systems industry.

KEY SELLING INDUSTRIES

22112	**Electric Power Transmission in the US** Electric power is essential in the operation of machinery and equipment used in water treatment plants and water supply systems.
23711	**Water & Sewer Line Construction in the US** This industry does construction and repair work on the pipelines and other water supply infrastructure operated by the Water Supply and Irrigation Systems industry.
32518	**Inorganic Chemical Manufacturing in the US** This industry provides industry operators with chemicals used in water purification.
42469	**Chemical Wholesaling in the US** This industry provides industry operators with chemicals used in water purification.

Products & Services

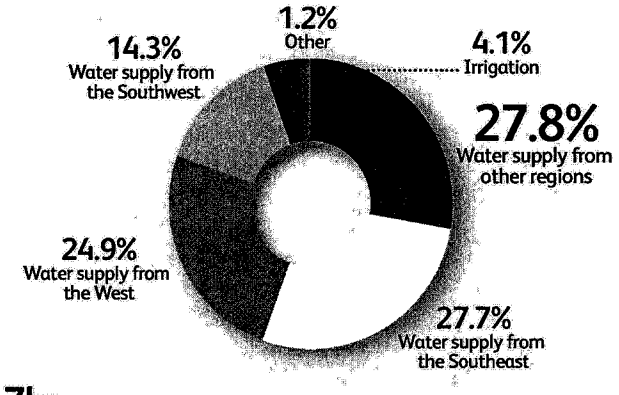
Water supply
The main service offered by this industry is the supply of water through the operation of public water supply systems, which generates almost 95.0% of overall industry revenue. Water-supply firms locate near key markets and supply water to their customers. As such, the location of large water-supply services follows population patterns and firms set up shop near large groups of people. Climatic conditions also play a role in location, and firms gravitate to abundant sources of water. This segment has grown over the past five years as rate increases have been passed down to the customer as higher volumes of water were demanded (as a result of droughts and other adverse climate conditions) and private-sector firms became more efficient in their operations.

Other
Charges for irrigation account for an estimated 4.1% of revenue and other items for the remaining 1.2%. These contributions to overall industry revenue generation have remained relatively constant over the course of the past five years. Although large volumes of water are used for irrigation in the United States, most is withdrawn directly by end-users (farmers raising crops of various types) and is not

Products & Markets

Products & Services continued

Products and services segmentation (2015)



Total $68.7bn

SOURCE: WWW.IBISWORLD.COM

provided via the public supply system. These withdrawals of water, and payment for them (generally via licenses), do not form part of this industry's operations. Instead, they comprise part of the revenue earned by state and local governments from natural resources.

Demand Determinants

Industry demand is determined by overall water demand, as well as the supply of water available to downstream markets from outside of public water supply systems (i.e. from outside the industry). Overall water demand is, in turn, dependent on the size of the population, the price of water, weather conditions, the amount of agricultural and industrial activity and other related factors. The supply of water available from outside the Water Supply and Irrigation Systems industry is mostly linked to infrastructure. For example, most of the water used in irrigation is sourced from separate water distribution systems.

Households, which represent the Water Supply and Irrigation Systems industry's largest market, demand water for drinking, bathing, laundry use, cleaning, gardening and other miscellaneous uses. The most important factor in demand from this market is the size of the US population. In addition however, demand from this market is also dependent on factors such as water prices, the type of household, weather conditions and water use trends. In general, households tend to decrease their water demand when prices rise. In addition, those living in apartments usually consume less water than those households with large properties, where water is used for a wider variety of purposes, most importantly in the maintenance of lawns and gardens. Households are also more likely to use more water in arid climates, where there is less rainfall. Finally, water demand can be influenced by public advocacy campaigns to reduce water consumption and technologies such as low flush toilets.

Industry demand is also influenced by commercial, public sector and industrial demand for water. Retail outlets, offices, hotels and motels, car washes, restaurants, and public buildings all make heavy use of water both to serve their customers and employees and sometimes as an input

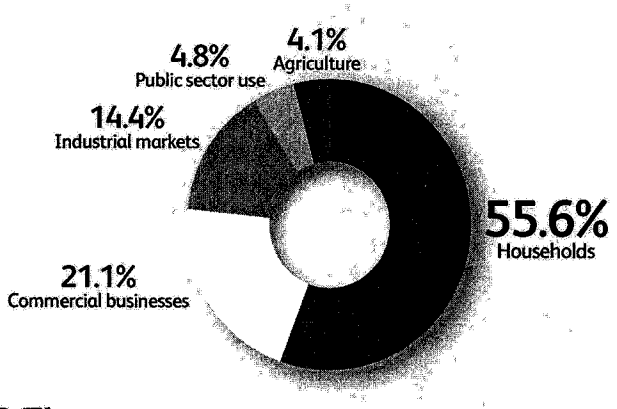
Products & Markets

Demand Determinants continued

in their operations. As with the residential sector, demand for water from public and commercial customers is correlated with population growth, weather conditions and trends in water use. In addition, commercial businesses tend to increase their demand for water when business increases, as more customers and employees drink tap water, use restrooms and more services are provided that make use of water (i.e. car washes). Finally, manufacturing and other industrial customers demand water for use in their operations, often as an input or a coolant. For example, steel manufacturing requires substantial water in the cooling of coke.

Major Markets

Major market segmentation (2015)



Total $68.7bn

SOURCE: WWW.IBISWORLD.COM

Households

Households represent the largest market for the Water Supply and Irrigation Systems industry, with sales to this market expected to generate 55.6% of industry revenue in 2015. Households make heavy use of water for consumption, bathing, lawn maintenance, laundry use and other less common uses. Household water consumption has risen in absolute terms over the past five years in line with the growth of the US population. The amount of revenue generated from this segment however, can vary somewhat significantly year-over-year in line with weather conditions, especially droughts, and the various water price rates that regulatory agencies set across the country. Revenue generated from sales to this market segment has however, declined as a share of overall industry revenue as sales to commercial and industrial customers has increased.

Commercial businesses

Commercial businesses purchase water from the public supply for use in their restrooms, as well as to a lesser extent in their operations; for example, restaurants may use significant volumes of water while cooking and through offering customers tap water to drink. Sales of water to commercial businesses are expected to generate 21.1% of industry revenue in 2015, a share that has risen over the past five years as increased commercial business activity has

Products & Markets

Major Markets continued

increased water consumption from this market at a faster rate than households.

Industrial markets

Industrial customers can, depending on the type of customer, use very large quantities of water. Like commercial businesses, industrial customers use water from the public distribution system to give to their workers to drink and for use in their on-site restrooms. Additionally however, some manufacturers and other industrial customers use very large quantities of water in their operations. For example, large amounts of water are required to cool coke, a carbon fuel that is essential in the manufacturing of steel. As manufacturing and industrial activity has expanded over the past five years, demand for water from this segment has grown as well, increasing the share of revenue generated from sales to industrial markets.

Other markets

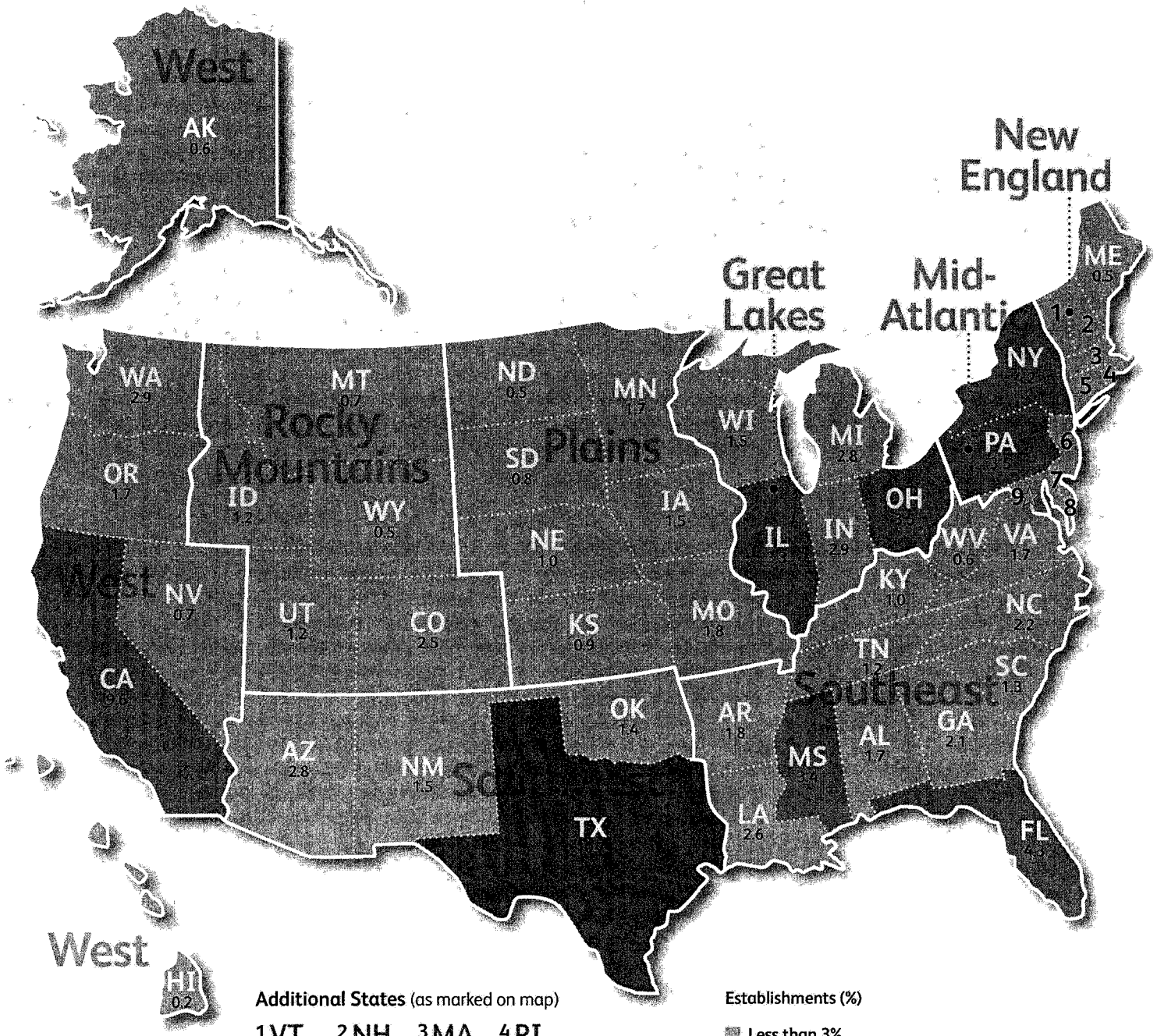
An estimated 4.8% of industry revenue is generated through the provision of water to the public sector. This includes sales of water used in government offices and buildings, as well sales of water for use by firefighting services, for the watering of public gardens and parks and other miscellaneous uses. Additionally, an estimated 4.1% of industry revenue is generated through water sales to farmers for use in irrigation. Revenue generated from sales to these markets has remained relatively stable as a share of overall industry revenue over the past five years.

International Trade

The Water Supply and Irrigation Systems industry operates almost entirely within the borders of the United States. Some water supply systems may distribute water across the border into Mexico and Canada, and Mexican and Canadian water distribution entities may provide services to some customers in the United States. However, such activity represents an infinitesimal share of overall industry revenue generation.

Products & Markets

Business Locations 2015



Additional States (as marked on map)

1 VT 0.4	2 NH 0.6	3 MA 1.5	4 RI 0.3	
5 CT 1.2	6 NJ 2.3	7 DE 0.2	8 MD 1.0	9 DC 0.1

Establishments (%)

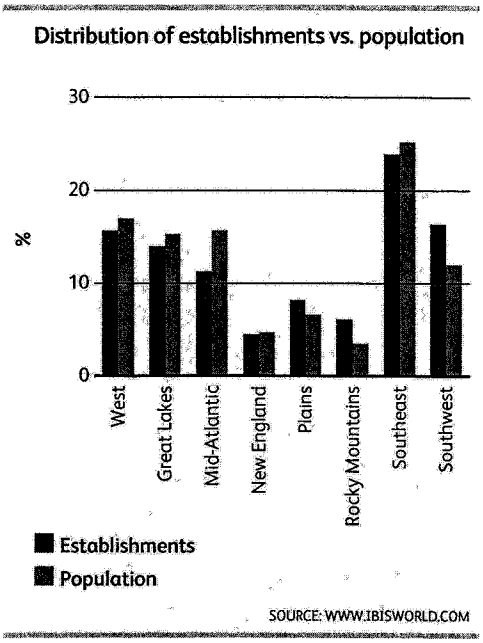
- Less than 3%
- 3% to less than 10%
- 10% to less than 20%
- 20% or more

SOURCE: WWW.IBISWORLD.COM

Products & Markets

Business Locations

In general, water use in the United States reflects population densities, although climatic conditions also play a role. The Southeast accounts for the largest share of public supply water use in the country, followed by the Southwest and West, all regions with relatively large populations and hotter climates. Both the Southeast and West contain a slightly smaller share of industry establishments than their share of the overall US population would otherwise suggest. Conversely, the Southwest contains a much larger share of industry establishments than its population would imply. This is primarily due to the region's very hot and dry conditions. In order to maintain lawns, gardens, golf courses and other plots of vegetation, households and businesses in the Southwest must extract large quantities of water from the water distribution system. Conversely, in regions such as the Great Lakes, New England, Mid-Atlantic and other regions, water use is lower per-capita, as regular rainfall is able to satisfy a larger share of the population's needs. Like the Southwest, the Plains and Rocky Mountains regions also contain a greater share of industry establishments than their share of the US population would indicate due to comparatively lower levels of rainfall in these regions.



Competitive Landscape

Market Share Concentration | Key Success Factors | Cost Structure Benchmarks
Basis of Competition | Barriers to Entry | Industry Globalization

Market Share Concentration

Level
Concentration in this industry is **Low**

The Water Supply and Irrigation Systems industry has a low level of market share concentration. There are numerous government-owned and private-sector operators in the industry. Even the largest of the private-sector operator, American Water Works, is expected to account for less than 5.0% of total industry revenue. Likewise, the largest municipal water suppliers account for a similar market share. Most firms operate on a localized basis and serve water to a small segment of the population. Nonetheless, market share has increased over the past five years as private firms step up acquisition activity. These firms are seeking aging assets that have been neglected by public sector firms reeling from financing issues. These private firms are looking to expand their footprint in nearby areas where they can add value and make operations that were once struggling into profitable ventures.

Key Success Factors

IBISWorld identifies 250 Key Success Factors for a business. The most important for this industry are:

Optimum capacity utilization
High capacity utilization enables unit capital charges to be reduced.

Ensuring pricing policy is appropriate
The price (in terms of both the overall level and its composition) charged for water has an impact on demand. Once basic needs are supplied (drinking and washing), the demand for water tends to fall as the price rises.

Ability to pass on cost increases
The ability to secure water price rate hikes from regulators with minimal lag following an increase in upstream purchases costs is crucial to maintaining margins.

Economies of scale
The efficiency of a water-supply system is significantly influenced by the size of the population and geographical area it serves.

Cost Structure Benchmarks

Profit
Industry profit margins are expected to expand from an estimated 13.0% of industry revenue in 2010 to an anticipated 15.3% in 2015. Industry margins are grown primarily as a result of a combination of increasing water price rate hikes and the industry's increasing consolidation. Water price hikes have directly positively impacted industry margins by increasing the price of industry output relative to input costs. Consolidation has further expanded margins as less-efficient, smaller water supply operators have been replaced by more efficiently run, larger public and privately owned utilities entities. As the industry continues to consolidate and as water prices continue to rise, industry profitability is expected to continue to rise.

Purchases
Purchases costs represent the Water Supply and Irrigation Systems industry's largest cost, and are expected to be equivalent to 43.6% of industry revenue in 2015. While including other purchases, purchased water and chemicals used in water purification and treatment represent the most significant purchases costs for industry operators. Purchased water is usually bought from reservoirs and other municipally owned sources of water. Purchases costs have remained relatively stable as a share of industry revenue over the past five years.

Competitive Landscape

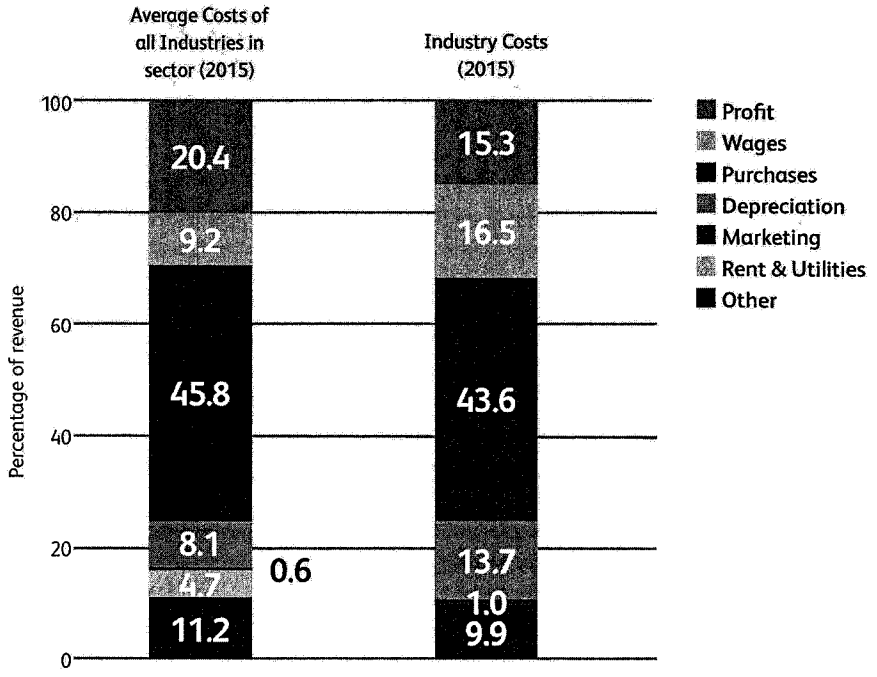
Cost Structure Benchmarks continued

Wages
Wage costs represent the second highest cost to industry operators, and are expected to be equivalent to 16.5% of industry revenue in 2015. Relatively few permanent employees are needed to manage water treatment and supply systems, with labor focused on monitoring treatment and distribution to ensure that water is being supplied safely and efficiently. However, the industry must regularly pay repair crews to carry out regular maintenance work on industry infrastructure. Additionally, permanent industry workers are mostly highly trained engineers that must do their jobs very methodically to prevent any catastrophic mistakes. As a result, industry wages tend to be relatively high. Wages have fallen somewhat as a share of industry revenue over the past five years as operational advancements, such as improved metering and electronic billing, have reduced industry labor intensity.

Depreciation
Depreciation costs for the Water Supply and Irrigation Systems industry are relatively high, equivalent to an estimated 13.7% of industry revenue. Given the critical nature of properly working water supply systems, substantial capital is invested in the repair and maintenance of water treatment plants, pumping stations, distribution lines and other industry infrastructure. Overall, industry depreciation costs have grown as a share of industry revenue over the past five years in line with increased investment in national water supply and distribution infrastructure.

Other
Other costs include administrative fees, legal costs and marketing costs, among

Sector vs. Industry Costs



SOURCE: WWW.IBISWORLD.COM

Competitive Landscape

Cost Structure Benchmarks continued

other costs. Given that that majority of industry operators are public utilities that have monopoly control over the water infrastructure within the jurisdictions they operate, industry marketing costs are very low. Conversely, legal and administrative fees, especially for privately owned industry operators, can be quite high given the high level of industry regulation.

Basis of Competition

Level & Trend
Competition in this industry is **Low** and the trend is **Steady**

Typically, water suppliers operate as single regional monopolies, with very little competition between suppliers. in order to compensate for this lack of competition and prevent the establishment of monopolistic pricing, regulatory authorities typically have a significant role in setting water price rates. In addition, regulators have significant oversight over industry operations to ensure that the water supply is supplied to an entire regional population, regardless of the implications for profitability. While the level of competition in this industry is very low, it is increasing as a greater share of public water utilities are becoming privatized. As municipalities increasingly privatize their water utilities, private companies are increasingly competing over contracts to gain control over these utilities. Nonetheless, the vast majority of water supply systems continue to be owned and operated by public companies.

Barriers to Entry

Level & Trend
Barriers to Entry in this industry are **High** and **Decreasing**

Barriers to entry into the Water Supply and Irrigation Systems industry are very high, primarily due to the extremely strict government regulations industry operators are exposed to and the very high level of capital investment required to operate water utilities. Finally, the vast majority of water supply systems are owned and operated by municipal government authorities. As a result, with the exception of setting up a new, small water supply system for an isolated population, prospective industry operators are only able to enter the industry when a municipal government decides to privatize its water supply system, a circumstance that, while not rare, does not occur at any regular interval. In order to secure a contract to operate a municipality's water supply system, a prospective operator must first meet all federal, state and local government inspections to ensure that the company is able to perform the job while strictly adhering to all safety, environmental and other regulations. Prospective operators then must also demonstrate that will be able to invest enough capital into existing infrastructure to ensure its proper functioning, as well as convince the government entity tendering the contract that they will do a better job at a lower price than any competitors. Competing with existing operators over a new contract tends to be particularly difficult, as existing operators have a proven history of expertise operating water utilities. All of the above mentioned factors demonstrate the very high barriers to entry into the Water Supply and Irrigation Systems industry.

Barriers to Entry checklist	Level
Competition	Low
Concentration	Low
Life Cycle Stage	Mature
Capital Intensity	High
Technology Change	Low
Regulation & Policy	Heavy
Industry Assistance	High

SOURCE: WWW.IBISWORLD.COM

Competitive Landscape

Industry Globalization

The Water Supply and Irrigation Systems industry has a very low level of globalization, with the vast majority of industry operations being conducted by municipal government entities at a local level. However, the level of industry globalization is increasing.

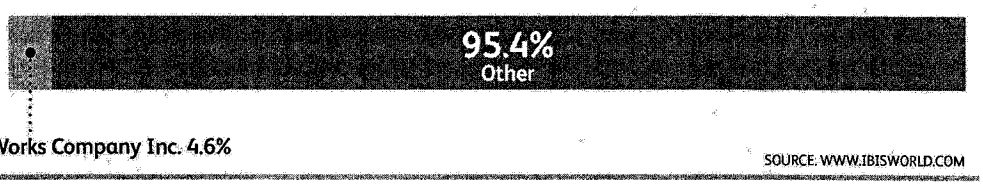
Foreign water firms are both acquiring water utilities (investor and municipally owned) in the United States and increasingly entering into public/ private partnerships with municipalities for the operation of their water systems.

Major Companies

American Water Works Company Inc. | Other Companies

Major players

(Market share)



SOURCE: WWW.IBISWORLD.COM

Player Performance

American Water Works Company Inc.
Market share: 4.6%

American Water Works Company Inc. (AWW) provides water, wastewater and other related services to about 14.0 million people in 40 US states and two Canadian provinces. Its corporate headquarters are located in Voorhees Township, NJ. Until April 2008, AWW was a wholly owned subsidiary of RWE Aktiengesellschaft and Thames Water Aqua Holdings GmbH, the latter of which is the holding company for RWE's global water business. RWE, a global multiutility company operating in more than 120 countries, acquired AWW in January 2003. Following the acquisition, RWE combined AWW with the US operations of RWE Thames Water, making AWW the manager of RWE's entire water business in North America and Chile.

The company's regulated utilities segment is most relevant to this industry. AWW's regulated utilities supply about 1,500 communities in 16 states with about 350 billion gallons of water per year. Its unregulated or market-based businesses provide contract management for systems that serve another 5.0 million consumers in the United States and Canada and also provide system design and homeowner services. Market-based activities typically comprise meter reading, billing, leak detection, engineering services, some water treatment services, water testing, recycled water operations and design and wastewater operations.

Financial performance

The company's US industry-specific revenue is expected to grow at an annualized rate of 4.4% over the five years to 2015 to $3.2 billion. Revenue growth has come as a result of water price rate hikes, an increase in the volume of water supplied and a number of strategic acquisitions. AWW has positioned itself to acquire localized

American Water Works Company Inc. – financial performance

Year	Revenue ($ million)	(% change)	Operating Income ($ million)	(% change)
2010	2,555.0	11.6	728.1	296.1
2011	2,666.2	4.4	803.1	10.3
2012	2,876.9	7.9	925.0	15.2
2013	2,901.9	0 9	945.8	2.2
2014*	3,045.2	4.9	978.1	3.4
2015*	3,166.8	4.0	1,003.6	2.6

*Estimates

SOURCE. ANNUAL REPORT AND IBISWORLD

Major Companies

Player Performance continued

water service companies to expand. Notable recent acquisitions include the 2011 purchase of 11 regulated water systems and 48 wastewater systems in Missouri, as well as the 2012 purchase of seven regulated water systems in New York, which added about 50,000 customers to the company's New York regulated operations.

Additionally, company profitability has been very strong over the past five years. Before its parent company spun off AWW, contractual obligations prevented the company from filing rate increases for a specified period of time, which hampered profit. However, the company rebuilt its infrastructure and returned to profitability in 2010. Furthermore, the company has divested assets to pad profit margins. In January 2011, AWW sold water and wastewater operations in Arizona and New Mexico to EPCOR Water (USA) Inc. for a total of $470.0 million.

Other Companies

The Water Supply and Irrigation Systems industry is extremely fragmented. Most people get their water from community water systems, defined by the Environmental Protection Agency (EPA) as public water systems that supply water to the same population year-round. The systems range in size from large municipally owned systems, such as the New York City water system, which supplies water to about 9.0 million people, to small systems that serve only tens or hundreds of customers.

The EPA also tracks noncommunity water systems, which total about 100,000. These can include nontransient systems like factories, schools or office buildings and transient water systems like gas stations or campgrounds where customers do not remain for a long period of time. Since these systems, by EPA definition, do not operate year-round, IBISWorld does not include them as industry operators.

Aqua America

Estimated market share: 1.3%

Aqua America Inc. is the holding company for regulated water utilities that supply water or wastewater services to 3.0 million people in Pennsylvania, Ohio, Illinois, Texas, New Jersey, Indiana, Virginia, North Carolina and Georgia. In 2013, the company sold all five of its Florida operations to focus on its business in these eight states. Its largest operating subsidiary, Aqua Pennsylvania Inc. (formerly Pennsylvania Suburban Water Company), accounts for about 53.0% of the company's operating revenue and provides water or wastewater services to about 1.5 million people in the suburban areas north and west of Philadelphia and 25 other counties in Pennsylvania. Although the operations in Philadelphia remain the most substantial, the company's name changed to reflect the geographic broadening of operations that occurred over recent years.

Aqua America has its headquarters in Bryn Mawr, PA. Part of the company's growth strategy is to expand via acquisitions; in 2013 the company acquired 15 water and wastewater utility systems. Further, in 2012 the company significantly expanded its operations with the acquisition of American Water Works Company Inc.'s water operations in Ohio, adding about 59,000 customers. However, additions to its revenue are offset by the simultaneous sale of its water operations in New York, which served about 51,000 customers. In 2015, the company is expected to generate about $900.0 million in industry-related revenue.

Major Companies

Other Companies continued

California Water Service Group

Estimated market share: 0.9 %

The California Water Service Group, headquartered in San Jose, CA, is the holding company of six operating subsidiaries: the California Water Service Company, the Washington Water Service Company, the New Mexico Water Service Company, the Hawaii Water Service Company Inc., CWS Utility Services and HWS Utility Services. These subsidiaries provide regulated and nonregulated water services to about 500,000 people in California, Hawaii, Washington and New Mexico. The Group obtains about half of its water from wells, purchasing the rest from wholesale suppliers. A negligible proportion of its water supplies (well under 1.0%) consist of surface water. As of year-end 2013, the company had 1,125 employees.

The California Water Service Company, widely known as Cal Water, is one of the largest investor-owned water utilities in the United States. It provides services to 475,100 customers in 83 California communities. The California Public Utilities Commission (CPUC) regulates the company, which is expected to generate about $600.0 million in industry-specific revenue in 2015.

American States Water Company

Estimated market share: 0.5 %

American States Water Company (AWR) is an investor-owned utility, publicly traded on the New York Stock Exchange. IT is the parent company of Golden State Water Company (GSWC) and American States Utility Services (ASUS), as well as the latter's subsidiaries Fort Bliss Water Services Company (FBWS), Terrapin Utility Services (TUS), Old Dominion Utility Services (ODUS), Palmetto State Utility Services (PSUS) and Old North Utility Services (ONUS). Across these businesses, AWR operates in three reportable segments: water, electric and contracted services. GSWC has over 250,000 utility water customers, all in California; meanwhile, ASUS and its subsidiaries have contracts with the US government to provide water and wastewater to military facilities. American States Water Company is expected to generate about $350.0 million in industry-specific revenue in 2015.

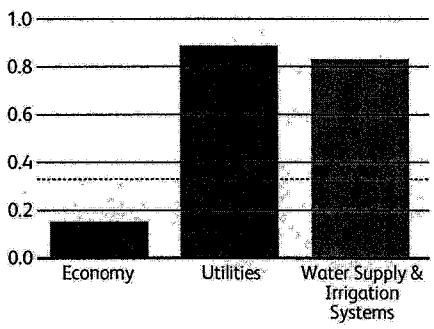
Operating Conditions

Capital Intensity | Technology & Systems | Revenue Volatility
Regulation & Policy | Industry Assistance

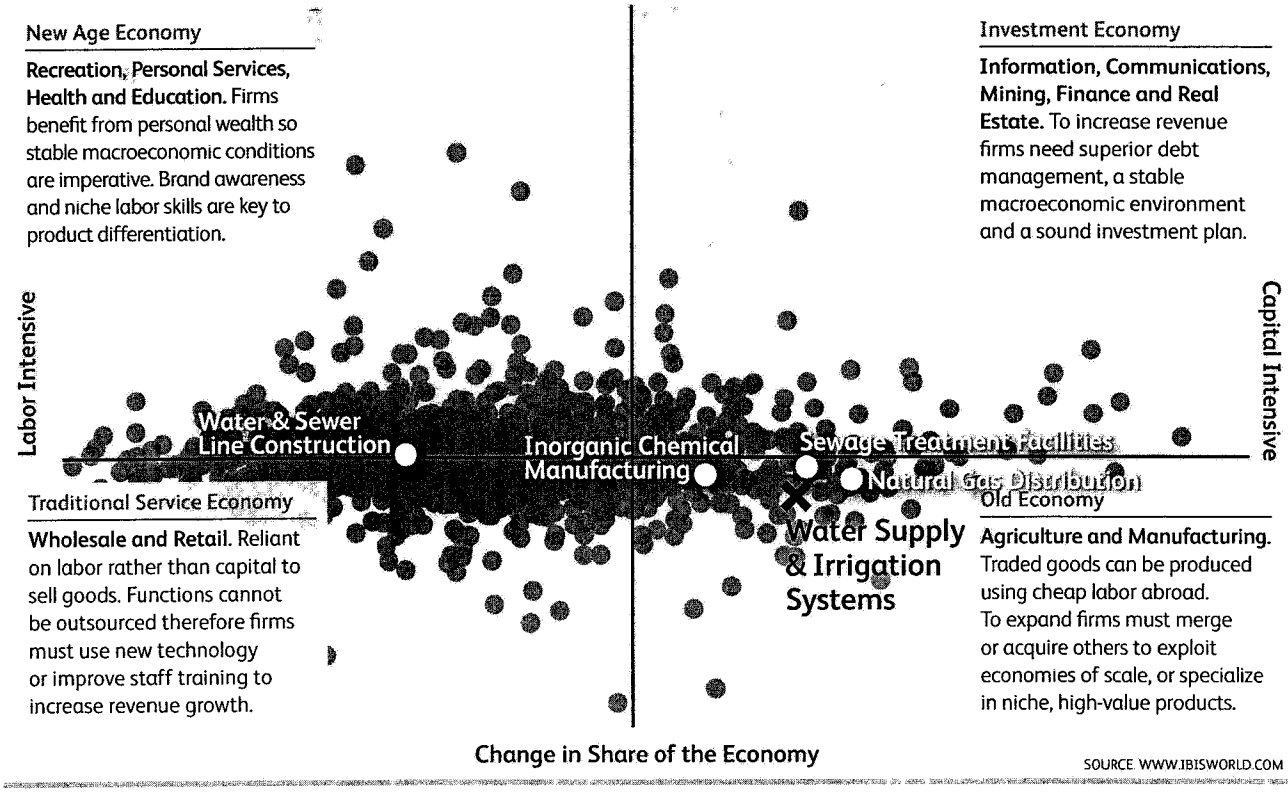
Capital Intensity

Level
The level of capital intensity is **High**

The Water Supply and Irrigation Systems industry is very capital intensive, with the average industry operator spending an estimated $0.83 on capital for every dollar spent on labor. The infrastructure required to supply the entire American populace with a reliable and sufficient water supply is massive, including a series of dams, pumping stations, water treatment plants and a huge distribution system of pipes. A large amount of capital must be invested to ensure that this system functions properly, as the consequences of failure can be catastrophic, with the potential of depriving populations of water or spreading serious water-borne illnesses. Industry capital intensity has expanded even more over the past five years as private firms and municipalities have increased investment in the repair and replacement of ageing water infrastructure assets.



Tools of the Trade: Growth Strategies for Success



Operating Conditions

Technology & Systems

Level
The level of Technology Change is **Low**

The Water Supply and Irrigation Systems industry operates by distributing water stored in dams to users via a system of pipelines. This water is almost always treated with chlorine and other chemicals to ensure that it is potable, i.e. fit for human consumption. Techniques used to treat water prior to entry into the water distribution system, as well as to monitor its purity are becoming more refined over time. For example, earlier water treatment systems typically only used sand filters, while the introduction of chlorine filtering became common in the 19th century. In modern times, the use of ozone and ultraviolet light to kill pathogens is becoming an increasingly common process in water filtration and treatment facilities. Other forms of treatment include adding coagulants to the water as it flows through tanks. The coagulants cause dirt and other contaminants to form clumps that settle to the bottom of the tanks. The water then flows through a filter for removal of the smallest contaminants, such as viruses and the parasite giardia.

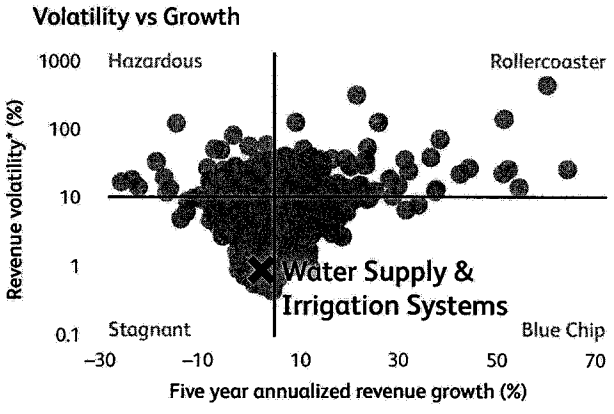
Revenue Volatility

Level
The level of Volatility is **Low**

The Water Supply and Irrigation Systems industry has low revenue volatility. Most water is consumed by households and any increases in water consumption are broadly linked to population growth, which amounts to about 1.0% per year. Extreme weather conditions can have a substantial influence on year-over-year industry revenue generation. For example, drought in California and much of the rest of the United States in 2013 caused an uptick in the demand for water, causing a slight boost to industry revenue that year. However, even events such as these tend to have relatively minor impacts on year-over-year industry revenue volatility. Overall, industry revenue is forecast to grow at a relatively steady rate in upcoming years, with the industry unlikely to experience major year-over-year discrepancies in revenue generation barring serious adverse weather conditions or a significant breakdown in water infrastructure.

A higher level of revenue volatility implies greater industry risk. Volatility can negatively affect long-term strategic decisions, such as the time frame for capital investment.

When a firm makes poor investment decisions it may face underutilized capacity if demand suddenly falls, or capacity constraints if it rises quickly.



* Axis is in logarithmic scale

SOURCE: WWW.IBISWORLD.COM

Operating Conditions

Regulation & Policy

Level & Trend
The level of Regulation is Heavy and the trend is Increasing

Numerous federal drinking water regulations have been in place in the US since the passage of the Safe Drinking Water Act in 1974. The Safe Drinking Water Act establishes criteria and procedures for the Environmental Protection Agency to develop national quality standards for drinking water. Regulations issued pursuant to the Safe Drinking Water Act set standards on the amount of certain microbial and chemical contaminants and radionuclides allowable in drinking water.

The Safe Drinking Water Act was most recently amended in 1996; additional water quality standards set by the Environmental Protection Agency (EPA) have been implemented over time. Disinfection byproduct limits were lowered in 1998, and took effect in 2002. More stringent surface water treatment performance standards also became effective in 2002. In 2001, the EPA adopted a limit for arsenic in water of 10 parts per billion. The new limit, which became effective in 2006, is one-fifth of the previous allowable level and required investment spending on the part of water suppliers that did not already meet the standard.

The Clean Water Act regulates discharges from drinking water and wastewater treatment facilities into lakes, rivers, streams, and groundwater. The handling and disposal of residuals and solids from water and wastewater treatment facilities are governed by state and federal laws and regulations. Water treatment residuals and solids are a combination of the chemicals used in the treatment process and the silt and other materials removed from the raw water. Major dams are subject to federal and state regulations related to dam safety.

State regulation

In addition to federal regulation, state commissions also regulate water utilities. These commissions have broad authority to establish rates for service, prescribe service standards, and to review and approve rules and regulations. In most instances, long-term financing programs, transactions between water utilities and affiliated interests, reorganizations, mergers and acquisitions also require state commission approval to proceed. The jurisdiction exercised by each commission is prescribed by state legislation and therefore varies from state to state.

Economic regulation deals with many competing, and often conflicting, public interests and policy goals. Rate adjustment proceedings normally are initiated by the water utility. Commission staff investigates the claims and public hearings are held. These hearings, which are economic and service quality fact-finding proceedings, are typically conducted in a trial-like setting where evidence submitted. The hearings then form the basis for a commission decision. The purpose of this regulatory process is to set rates that will cover the reasonable operating costs of providing quality service to customers and allow the water utility the opportunity to earn a fair return on the investment necessary to provide that service. A rate proceeding generally focuses on four areas: the amount of investment in facilities that provide public service; the operating costs and taxes associated with providing the service; the capital costs for the funds used to provide the facilities; and the tariff design that allocates revenue requirements equitably across the customer base.

The regulatory rate setting process is time-consuming. After considering the time required to complete the regulatory process, water utilities file for rate adjustments that will reflect as closely as possible the cost of providing service during the time new rates are intended to be effective. Attempts are also made to offset any adverse financial impact

Operating Conditions

Regulation & Policy continued

arising from regulatory lag. For example, some states employ some form of forward looking test year, such as a future test year or recognition of known and measurable changes for some period beyond a historic test year. Such mechanisms result in rates that are more reflective of costs that are likely to be incurred during the period the rates will be in effect. Rate orders may also allow for the recovery of interest and depreciation expenses related to the interim period from the time a major construction project is placed into service until new rates reflecting the cost of the project become effective.

Some states allow water utilities to recover certain costs of distribution system infrastructure replacement without a full rate proceeding being filed. Distribution system infrastructure replacement is a significant element of capital expenditure, and the ability to recoup at least some of the associated cost can reduce regulatory lag and increase the time between full rate cases.

In addition, some states also permit forms of rate design known as single tariff pricing. Under this arrangement, similar rates are set for the customers of water utilities with multiple service districts, simplifying administration and reducing the complexity of rate proceedings. Single tariff pricing also spreads fixed costs over a larger customer base.

Industry Assistance

Level & Trend
The level of Industry Assistance is **High** and the trend is **Steady**

While private companies are having an increasingly important role in the operation and maintenance of the US water supply distribution system, the vast majority of water supply infrastructure in the United States is owned and operated by municipal and state government entities. These companies have access to substantial subsidies and other governmental support. The relatively high level of government assistance for the industry is due to the critical importance of a properly functioning water system to the functioning of the US economy and society, with the possibility of water supply system failure simply not viable. More specifically, government-owned water suppliers can access a range of subsidies, including federal or state interest rate subsidies or grants and transfer payments (such as movement of funds between a city's general fund and the water utility). Subsidies and transfer payments play a role in meeting the annual revenue requirement of water utilities and decrease the amount of revenue that needs to be recovered from ratepayers.

Key Statistics

Industry Data

	Revenue ($m)	Industry Value Added ($m)	Establish-ments	Enterprises	Employment	Exports	Imports	Wages ($m)	Domestic Demand	Price of Water and Sewerage Maintenance (Index)
2006	56,351.9	27,741.8	52,339	3,114	200,044	--	--	9,821.9	N/A	351.8
2007	57,448.8	25,310.0	52,110	3,100	201,315	--	--	10,143.5	N/A	360.5
2008	59,480.9	27,102.9	51,988	3,091	200,402	--	--	11,043.1	N/A	374.7
2009	61,830.1	27,151.7	51,407	3,057	200,219	--	--	10,643.0	N/A	397.7
2010	64,324.9	26,861.7	51,350	3,055	200,113	--	--	10,587.5	N/A	422.1
2011	65,164.1	30,874.6	51,295	3,051	200,228	--	--	10,934.4	N/A	437.6
2012	66,168.7	31,514.1	51,231	3,048	200,131	--	--	11,134.2	N/A	457.2
2013	67,463.6	32,669.4	51,176	3,043	200,030	--	--	11,350.9	N/A	472.9
2014	68,423.7	31,309.2	50,988	3,033	199,514	--	--	11,466.3	N/A	482.3
2015	68,665.7	31,220.2	50,972	3,028	199,422	--	--	11,307.2	N/A	479.7
2016	71,184.4	32,289.9	50,920	3,019	198,758	--	--	11,646.4	N/A	497.0
2017	72,209.5	32,901.6	50,891	3,020	198,694	--	--	11,960.8	N/A	515.9
2018	73,255.5	33,492.0	50,844	3,008	198,635	--	--	12,247.9	N/A	536.1
2019	74,568.0	34,142.1	50,828	3,007	198,586	--	--	12,517.3	N/A	557.1
2020	76,003.0	34,808.6	50,771	3,004	198,432	--	--	12,767.7	N/A	577.7
Sector Rank	4/10	4/10	1/10	2/10	2/10	N/A	N/A	2/10	N/A	N/A
Economy Rank	148/1328	99/1328	166/1328	559/1328	214/1328	N/A	N/A	167/1328	N/A	N/A

Annual Change

	Revenue (%)	Industry Value Added (%)	Establish-ments (%)	Enterprises (%)	Employment (%)	Exports (%)	Imports (%)	Wages (%)	Domestic Demand (%)	Price of Water and Sewerage Maintenance (%)
2007	1.9	-8.8	-0.4	-0.4	0.6	N/A	N/A	3.3	N/A	2.5
2008	3.5	7.1	-0.2	-0 3	-0 5	N/A	N/A	8.9	N/A	3.9
2009	3.9	0.2	-1.1	-1.1	-0.1	N/A	N/A	-3.6	N/A	6.1
2010	4.0	-1 1	-0 1	-0.1	-0.1	N/A	N/A	-0.5	N/A	6.1
2011	1.3	14.9	-0.1	-0.1	0.1	N/A	N/A	3.3	N/A	3.7
2012	1.5	2.1	-0.1	-0 1	0.0	N/A	N/A	1 8	N/A	4.5
2013	2.0	3.7	-0.1	-0.2	-0.1	N/A	N/A	1.9	N/A	3.4
2014	1.4	-4.2	-0 4	-0 3	-0 3	N/A	N/A	1.0	N/A	2.0
2015	0.4	-0.3	0.0	-0 2	0.0	N/A	N/A	1.4	N/A	0.5
2016	3.7	3.4	-0 1	-0 3	-0.3	N/A	N/A	3 0	N/A	3.6
2017	1.4	1.9	-0.1	0.0	0.0	N/A	N/A	2.7	N/A	3.8
2018	1.4	1.8	-0.1	-0 4	0.0	N/A	N/A	2 4	N/A	3.9
2019	1.8	1.9	0.0	0.0	0.0	N/A	N/A	2.2	N/A	3.9
2020	1.9	2.0	-0.1	-0 1	-0.1	N/A	N/A	2.0	N/A	3 7
Sector Rank	9/10	8/10	7/10	9/10	7/10	N/A	N/A	9/10	N/A	N/A
Economy Rank	1139/1328	1117/1328	985/1328	958/1328	1045/1328	N/A	N/A	1187/1328	N/A	N/A

Key Ratios

	IVA/Revenue (%)	Imports/ Demand (%)	Exports/ Revenue (%)	Revenue per Employee ($'000)	Wages/Revenue (%)	Employees per Est.	Average Wage ($)	Share of the Economy (%)
2006	49.23	N/A	N/A	281.70	17.43	3.82	49,098 70	0.19
2007	44.06	N/A	N/A	285.37	17.66	3.86	50,386.21	0.17
2008	45.57	N/A	N/A	296.81	18 57	3.85	55,104.74	0.18
2009	43.91	N/A	N/A	308.81	17.21	3.89	53,156.79	0.19
2010	41.76	N/A	N/A	321.44	16.46	3.90	52,907.61	0 18
2011	47.38	N/A	N/A	325.45	16.78	3.90	54,609.74	0.21
2012	47.63	N/A	N/A	330.63	16.83	3.91	55,634.56	0.21
2013	48.43	N/A	N/A	337.27	16.83	3.91	56,745.99	0.21
2014	45.76	N/A	N/A	342.95	16 76	3.91	57,471 15	0.20
2015	45.47	N/A	N/A	344.32	16.47	3.91	56,699.86	0.19
2016	45.36	N/A	N/A	358.15	16 36	3.90	58,595.88	0.19
2017	45.56	N/A	N/A	363.42	16.56	3.90	60,197 09	0.19
2018	45.72	N/A	N/A	368.79	16.72	3.91	61,660 33	0.19
2019	45.79	N/A	N/A	375.49	16.79	3.91	63,032.14	0.19
2020	45 80	N/A	N/A	383 02	16.80	3.91	64,342.95	0.18
Sector Rank	3/10	N/A	N/A	9/10	3/10	10/10	9/10	4/10
Economy Rank	357/1328	N/A	N/A	522/1328	742/1328	1034/1328	505/1328	99/1328

Figures are inflation-adjusted 2015 dollars. Rank refers to 2015 data

SOURCE: WWW.IBISWORLD.COM

Jargon & Glossary

Industry Jargon

ENVIRONMENTAL PROTECTION AGENCY (EPA) A federal agency that regulates the industry through water-quality standards.

PUBLIC UTILITY COMMISSION (PUC) A local or state level commission that accept or reject applications for water-supply rate increases.

WASTEWATER Water that has already been used and discharged.

IBISWorld Glossary

BARRIERS TO ENTRY High barriers to entry mean that new companies struggle to enter an industry, while low barriers mean it is easy for new companies to enter an industry.

CAPITAL INTENSITY Compares the amount of money spent on capital (plant, machinery and equipment) with that spent on labor. IBISWorld uses the ratio of depreciation to wages as a proxy for capital intensity. High capital intensity is more than $0.333 of capital to $1 of labor; medium is $0.125 to $0.333 of capital to $1 of labor; low is less than $0.125 of capital for every $1 of labor.

CONSTANT PRICES The dollar figures in the Key Statistics table, including forecasts, are adjusted for inflation using the current year (i.e. year published) as the base year. This removes the impact of changes in the purchasing power of the dollar, leaving only the "real" growth or decline in industry metrics. The inflation adjustments in IBISWorld's reports are made using the US Bureau of Economic Analysis' implicit GDP price deflator.

DOMESTIC DEMAND Spending on industry goods and services within the United States, regardless of their country of origin. It is derived by adding imports to industry revenue, and then subtracting exports.

EMPLOYMENT The number of permanent, part-time, temporary and seasonal employees, working proprietors, partners, managers and executives within the industry.

ENTERPRISE A division that is separately managed and keeps management accounts. Each enterprise consists of one or more establishments that are under common ownership or control.

ESTABLISHMENT The smallest type of accounting unit within an enterprise, an establishment is a single physical location where business is conducted or where services or industrial operations are performed. Multiple establishments under common control make up an enterprise.

EXPORTS Total value of industry goods and services sold by US companies to customers abroad.

IMPORTS Total value of industry goods and services brought in from foreign countries to be sold in the United States.

INDUSTRY CONCENTRATION An indicator of the dominance of the top four players in an industry. Concentration is considered high if the top players account for more than 70% of industry revenue. Medium is 40% to 70% of industry revenue. Low is less than 40%.

INDUSTRY REVENUE The total sales of industry goods and services (exclusive of excise and sales tax); subsidies on production; all other operating income from outside the firm (such as commission income, repair and service income, and rent, leasing and hiring income); and capital work done by rental or lease. Receipts from interest royalties, dividends and the sale of fixed tangible assets are excluded.

INDUSTRY VALUE ADDED (IVA) The market value of goods and services produced by the industry minus the cost of goods and services used in production. IVA is also described as the industry's contribution to GDP, or profit plus wages and depreciation.

INTERNATIONAL TRADE The level of international trade is determined by ratios of exports to revenue and imports to domestic demand. For exports/revenue: low is less than 5%, medium is 5% to 20%, and high is more than 20%. Imports/domestic demand: low is less than 5%, medium is 5% to 35%, and high is more than 35%.

LIFE CYCLE All industries go through periods of growth, maturity and decline. IBISWorld determines an industry's life cycle by considering its growth rate (measured by IVA) compared with GDP; the growth rate of the number of establishments; the amount of change the industry's products are undergoing; the rate of technological change; and the level of customer acceptance of industry products and services.

NONEMPLOYING ESTABLISHMENT Businesses with no paid employment or payroll, also known as nonemployers. These are mostly set up by self-employed individuals.

PROFIT IBISWorld uses earnings before interest and tax (EBIT) as an indicator of a company's profitability. It is calculated as revenue minus expenses, excluding interest and tax.

Jargon & Glossary

IBISWorld Glossary continued

VOLATILITY The level of volatility is determined by averaging the absolute change in revenue in each of the past five years. Volatility levels: very high is more than ±20%; high volatility is ±10% to ±20%; moderate volatility is ±3% to ±10%; and low volatility is less than ±3%.

WAGES The gross total wages and salaries of all employees in the industry. The cost of benefits is also included in this figure.

Scheig Exhibit 5

Market Results
Through 2013

2014
Valuation Handbook
Guide to Cost of Capital

DUFF&PHELPS

In Exhibit 7.2, the largest company in each of the CRSP (NYSE/AMEX/NASDAQ) deciles and size groupings (by market capitalization) as of September 30, 2013.

Exhibit 7.2: Largest Company (by market capitalization) in CRSP (NYSE/AMEX/NASDAQ) Deciles and Size Groupings
September 30, 2013

Decile	Company Name	Recent Market Capitalization (in $thousands)
1-Largest	Apple, Inc.	428,699,798
2	Cigna Corp.	21,739,006
3	Molson Coors Brewing Co.	9,196,480
4	Donaldson Inc.	5,569,840
5	Kennametal Inc.	3,573,079
6	Idacorp Inc.	2,431,229
7	Stone Energy Corp.	1,621,792
8	Korn Ferry International	1,055,320
9	Calix Inc.	632,770
10-Smallest	Yume Inc.	338,829

Source of underlying data: CRSP databases ©2014 Center for Research in Security Prices (CRSP®), The University of Chicago Booth School of Business (2014).

In the following sections we provide an example of (i) calculating a CRSP Deciles Size Premia and (ii) a Risk Premium Report, using example data from each of the two data sets.

Size Premium Calculation: CRSP Deciles Size Premia

In the *2014 Valuation Handbook*, the CRSP Deciles Size Premia are calculated over the years 1926–2013. The following statistics are calculated over this time period:

- The "historical" average annual long-term equity risk premium is 6.96%.
- The average annual risk-free rate is 5.09%.
- CRSP portfolio 10b average annual return equals 23.57%
- CRSP portfolio 10b OLS beta equals1.36

The beta-adjusted size premium for CRSP portfolio 10b is calculated as follows:

10b Size Premium = actual excess return – excess return predicted by CAPM

Looking Exhibit 7.3, the *actual* excess return of portfolio 10b is 18.47% (23.57% - 5.09%), and the excess return that CAPM *predicted* is 9.48% (1.36 x 6.96%). The size premium for CRSP portfolio 10b is therefore 8.99%, which is "what actually happened" (18.47%) minus "what CAPM predicted" (9.48%). This is what is meant when we say that the beta of smaller companies doesn't explain all of their returns. In this simple example, beta fell 8.99% short of explaining what actually happened.

Exhibit 7.3:CRSP (NYSE/AMEX/NASDAQ) Deciles; Returns in Excess of CAPM (i.e., beta-adjusted Size Premia)

Size Grouping	OLS Beta	Arithmetic Mean	Return in Excess of Risk-free Rate (actual)	Return Return in Excess of Risk-free Rate (as predicted by CAPM)	Size Premium
Mid-Cap (3–5)	1.12	14.01%	8.91%	7.81%	1.11%
Low-Cap (6–8)	1.22	15.57%	10.48%	8.50%	1.98%
Micro-Cap (9–10)	1.36	18.41%	13.32%	9.44%	3.87%
Breakdown of Deciles 1–10					
1-Largest	0.92	11.10%	6.01%	6.38%	-0.37%
2	1.04	13.04%	7.95%	7.20%	0.75%
3	1.10	13.64%	8.55%	7.69%	0.86%
4	1.13	14.09%	9.00%	7.84%	1.16%
5	1.16	14.92%	9.82%	8.08%	1.75%
6	1.17	15.12%	10.02%	8.17%	1.86%
7	1.24	15.68%	10.59%	8.65%	1.94%
8	1.31	16.55%	11.45%	9.09%	2.36%
9	1.35	17.27%	12.18%	9.37%	2.81%
10-Smallest	1.40	20.85%	15.75%	9.77%	5.99%
Breakdown of 10th Decile					
10a	1.42	19.40%	14.31%	9.91%	4.40%
10w	1.38	18.22%	13.12%	9.61%	3.52%
10x	1.48	21.05%	15.96%	10.29%	5.67%
10b	1.36	23.57%	18.47%	9.48%	8.99%
10y	1.38	22.24%	17.14%	9.59%	7.55%
10z	1.35	26.59%	21.50%	9.38%	12.12%

Source of underlying data: Calculated (or derived) based on data from CRSP ©2014 Center for Research in Security Prices (CRSP®), The University of Chicago Booth School of Business (2014). Calculations by Duff & Phelps.

Scheig Exhibit 6

Risk Premium Analysis

	MOODY'S AVERAGE PUBLIC UTILITY BOND YIELD (1)		AUTHORIZED ELECTRIC RETURNS (2)	Annual Yield	Annual ROE
Q2 1989	9.85%	Q1 1990	12.62%		
Q3 1989	9.38%	Q2 1990	12.85%		
Q4 1989	9.34%	Q3 1990	12.54%		
Q1 1990	9.62%	Q4 1990	12.68%	9.55%	12.67%
Q2 1990	9.82%	Q1 1991	12.66%		
Q3 1990	9.84%	Q2 1991	12.67%		
Q4 1990	9.76%	Q3 1991	12.49%		
Q1 1991	9.42%	Q4 1991	12.42%	9.71%	12.56%
Q2 1991	9 34%	Q1 1992	12.38%		
Q3 1991	9.19%	Q2 1992	11.83%		
Q4 1991	8.89%	Q3 1992	12.03%		
Q1 1992	8.76%	Q4 1992	12.14%	9.05%	12.10%
Q2 1992	8.72%	Q1 1993	11.84%		
Q3 1992	8.37%	Q2 1993	11.64%		
Q4 1992	8.44%	Q3 1993	11.15%		
Q1 1993	8.03%	Q4 1993	11.04%	8.39%	11.42%
Q2 1993	7.74%	Q1 1994	11.07%		
Q3 1993	7.25%	Q2 1994	11.13%		
Q4 1993	7.21%	Q3 1994	12.75%		
Q1 1994	7.53%	Q4 1994	11.24%	7.43%	11.55%
Q2 1994	8.28%	Q1 1995	11.96%		
Q3 1994	8.51%	Q2 1995	11.32%		
Q4 1994	8.89%	Q3 1995	11.37%		
Q1 1995	8.58%	Q4 1995	11.58%	8.56%	11.56%
Q2 1995	7.95%	Q1 1996	11.46%		
Q3 1995	7.74%	Q2 1996	11.46%		
Q4 1995	7.36%	Q3 1996	10.76%		
Q1 1996	7.43%	Q4 1996	11.56%	7.62%	11.31%
Q2 1996	7.98%	Q1 1997	11.08%		
Q3 1996	7.96%	Q2 1997	11.62%		
Q4 1996	7.61%	Q3 1997	12.00%		
Q1 1997	7.80%	Q4 1997	11.06%	7.84%	11 44%
Q2 1997	7.93%	Q1 1998	11 31%		
Q3 1997	7.56%	Q2 1998	12 20%		
Q4 1997	7.26%	Q3 1998	11 65%		
Q1 1998	7 08%	Q4 1998	12.30%	7.46%	11.87%
Q2 1998	7.07%	Q1 1999	10.40%		
Q3 1998	6.94%	Q2 1999	10.94%		
Q4 1998	6.89%	Q3 1999	10.75%		
Q1 1999	7 02%	Q4 1999	11 10%	6.98%	10.80%
Q2 1999	7.42%	Q1 2000	11.08%		
Q3 1999	7.80%	Q2 2000	11.00%		
Q4 1999	7.97%	Q3 2000	11.68%		
Q1 2000	8 15%	Q4 2000	12.50%	7.84%	11 57%
Q2 2000	8.30%	Q1 2001	11.38%		
Q3 2000	8.13%	Q2 2001	10.88%		
Q4 2000	7.97%	Q3 2001	10 78%		
Q1 2001	7.68%	Q4 2001	11 57%	8.02%	11.15%
Q2 2001	7 81%	Q1 2002	10.05%		
Q3 2001	7 64%	Q2 2002	11.41%		
Q4 2001	7.70%	Q3 2002	11.25%		
Q1 2002	7.71%	Q4 2002	11.57%	7.72%	11.07%
Q2 2002	7 72%	Q1 2003	11 49%		
Q3 2002	7.37%	Q2 2003	11.16%		
Q4 2002	7.31%	Q3 2003	9.95%		
Q1 2003	6.95%	Q4 2003	11.09%	7.34%	10.92%
Q2 2003	6 41%	Q1 2004	11.00%		
Q3 2003	6.64%	Q2 2004	10.64%		
Q4 2003	6.43%	Q3 2004	10.75%		

Q1 2004	6.14%	Q4 2002	10.91%	6.41%	10.83%
Q2 2004	6.53%	Q1 2005	10 55%		
Q3 2004	6.18%	Q2 2005	10.13%		
Q4 2002	5.95%	Q3 2005	10.84%		
Q1 2005	5.77%	Q4 2005	10.57%	6.11%	10.52%
Q2 2005	5.57%	Q1 2006	10.38%		
Q3 2005	5.52%	Q2 2006	10 39%		
Q4 2005	5 83%	Q3 2006	10.06%		
Q1 2006	5.86%	Q4 2006	10 38%	5.70%	10.30%
Q2 2006	6.35%	Q1 2007	10.30%		
Q3 2006	6.20%	Q2 2007	10.27%		
Q4 2006	5.89%	Q3 2007	10 02%		
Q1 2007	5.91%	Q4 2007	10.44%	6.09%	10.26%
Q2 2007	6.13%	Q1 2008	10.15%		
Q3 2007	6.27%	Q2 2008	10.41%		
Q4 2007	6 15%	Q3 2008	10.42%		
Q1 2008	6.22%	Q4 2008	10.38%	6.19%	10.34%
Q2 2008	6.41%	Q1 2009	10.31%		
Q3 2008	6.52%	Q2 2009	10.56%		
Q4 2008	7.45%	Q3 2009	10.46%		
Q1 2009	6.78%	Q4 2009	10.54%	6.79%	10.47%
AVERAGE	7.54%		11.23%		

(1) Three Month Average End of Month Yield From Bloomberg Professional Service

(2) Rate Case Summary Q4 2009 Financial Update, Edison Electric Institute

CLOSE/MID/YIELD

NUODUAVG Moodys Bond UTIL AVG 5.55 AVERAGE YIELD

HI 15.77 ON 12/31/81

Range 12/31/46 to 12/31/09 Period Yearly AVE 7.17

LOW 2.77 ON 12/31/46

DATE	YIELD	DATE	YIELD	DATE	YIELD
12/09	5.86	12/93	7.33	12/78	9.67
12/08	6.85	12/92	8.36	12/77	8.65
12/07	6.23	12/91	8.76	12/76	8.61
12/06	5.83	12/90	9.57	12/75	9.87
12/05	5.83			12/74	10.02
12/04	5.93	12/89	9.31	12/73	8.17
12/03	6.36	12/88	10.02	12/72	7.48
12/02	7.21	12/87	10.55	12/71	7.92
12/01	7.86	12/86	8.96	12/70	8.45
12/00	7.79	12/85	10.82		
		12/84	12.96	12/69	8.39
12/99	8.04	12/83	13.48	12/68	6.85
12/98	6.84	12/82	13.55	12/67	6.57
12/97	7.16	12/81 H	15.77	12/66	5.65
12/96	7.58	12/80	14.48	12/65	4.82
12/95	7.21			12/64	4.54
12/94	8.79	12/79	11.68	12/63	4.49

<HELP> for explanation. Index **HP**

CLOSE/MID/YIELD

MUODUAVG Moodys Bond Util AVG Page 2 / 2

5.55 AVERAGE YIELD

HI 15.77 ON 12/31/81

Range 12/31/46 to 12/31/62 Period Yearly AVE 7.17

LOW 2.77 ON 12/31/46

DATE	YIELD	DATE	YIELD	DATE	YIELD
12/62	4.41	12/47	3.02		
12/61	4.62	12/46	2.77		
12/60	4.58				
12/59	4.86				
12/58	4.39				
12/57	4.29				
12/56	3.93				
12/55	3.31				
12/54	3.10				
12/53	3.37				
12/52	3.19				
12/51	3.24				
12/50	2.87				
12/49	2.79				
12/48	3.06				

CLOSE/MID/YIELD

MOODUAVG Moodys Bond UTIL AVG 5.55 AVERAGE YIELD

HI 10.31 ON 10/31/74

Range 12/31/46 To 11/30/76 Period M Monthly AVE 5.23

LOW 2.71 ON 5/31/47

DATE	YIELD	DATE	YIELD	DATE	YIELD
11/76	8.77	12/75	9.87	12/74	10.02
10/76	8.83	11/75	9.83	11/74	10.12
		10/75	9.94	10/74 H	10.31
9/76	8.91	9/75	9.98	9/74	10.11
8/76	9.07	8/75	9.93	8/74	9.70
7/76	9.26	7/75	9.81	7/74	9.35
6/76	9.36	6/75	9.81	6/74	9.08
5/76	9.31	5/75	9.93	5/74	8.86
4/76	9.27	4/75	9.88	4/74	8.68
3/76	9.43	3/75	9.67	3/74	8.44
2/76	9.50	2/75	9.83	2/74	8.33
1/76	9.68	1/75	10.10	1/74	8.27

<HELP> for explanation. Index HP

CLOSE/MID/YIELD

MOODYAVG Moody's Bond UTIL AVG 5.55 AVERAGE YIELD

Range 12/31/71 to 10/30/73 Period Monthly

HI 10.31 ON 10/31/74
AVE 5.23
LOW 2.71 ON 5/31/47

DATE	YIELD	DATE	YIELD	DATE	YIELD
12/73	8.17	12/72	7.48	12/71	7.92
11/73	8.11	11/72	7.55	11/71	7.96
10/73	8.04	10/72	7.63	10/71	8.04
9/73	8.09	9/72	7.63	9/71	8.12
8/73	8.06	8/72	7.69	8/71	8.30
7/73	7.81	7/72	7.80	7/71	8.34
6/73	7.69	6/72	7.83	6/71	8.39
5/73	7.63	5/72	7.88	5/71	8.23
4/73	7.64	4/72	7.87	4/71	8.05
3/73	7.64	3/72	7.81	3/71	8.08
2/73	7.61	2/72	7.84	2/71	7.94
1/73	7.51	1/72	7.85	1/71	8.17

<HELP> for explanation. Index **HP**

CLOSE/MID/YIELD

[illegible] Moodys Bond [illegible] AVG 5.55 AVERAGE YIELD

Range [illegible] to [illegible] Period Monthly

HI 10.31 ON 10/31/74
AVE 5.23
LOW 2.71 ON 5/31/47

DATE	YIELD	DATE	YIELD	DATE	YIELD
12/70	8.45	12/69	8.39	12/68	6.85
11/70	8.77	11/69	7.94	11/68	6.58
10/70	8.74	10/69	7.91	10/68	6.39
9/70	8.80	9/69	7.62	9/68	6.27
8/70	8.83	8/69	7.40	8/68	6.30
7/70	9.01	7/69	7.49	7/68	6.53
6/70	9.06	6/69	7.38	6/68	6.60
5/70	8.72	5/69	7.15	5/68	6.60
4/70	8.37	4/69	7.26	4/68	6.54
3/70	8.34	3/69	7.23	3/68	6.39
2/70	8.47	2/69	7.05	2/68	6.36
1/70	8.54	1/69	7.02	1/68	6.47

<HELP> for explanation. Index **HP**

CLOSE/MID/YIELD

BOODUAVG Moodys Bond UTIL AVG 5.55 AVERAGE YIELD

Range [redacted] to [redacted] Period Monthly

HI 10.31 ON 10/31/74
AVE 5.23
LOW 2.71 ON 5/31/47

DATE	YIELD	DATE	YIELD	DATE	YIELD
12/67	6.57	12/66	5.65	12/65	4.82
11/67	6.39	11/66	5.64	11/65	4.71
10/67	6.12	10/66	5.72	10/65	4.67
9/67	6.02	9/66	5.78	9/65	4.64
8/67	5.96	8/66	5.54	8/65	4.60
7/67	5.91	7/66	5.39	7/65	4.58
6/67	5.80	6/66	5.32	6/65	4.56
5/67	5.59	5/66	5.23	5/65	4.53
4/67	5.37	4/66	5.21	4/65	4.51
3/67	5.37	3/66	5.08	3/65	4.51
2/67	5.25	2/66	4.90	2/65	4.51
1/67	5.42	1/66	4.85	1/65	4.52

<HELP> for explanation. Index **HP**

CLOSE/MID/YIELD

MOODYAVG Moodys Bond UTIL AVG 5 55 AVERAGE YIELD

HI 10.31 ON 10/31/74

Range [illegible] to [illegible] Period Monthly AVE 5.23

LOW 2.71 ON 5/31/47

DATE	YIELD	DATE	YIELD	DATE	YIELD
12/64	4.54	12/63	4.49	12/62	4.41
11/64	4.53	11/63	4.45	11/62	4.42
10/64	4.52	10/63	4.44	10/62	4.46
9/64	4.53	9/63	4.44	9/62	4.49
8/64	4.54	8/63	4.42	8/62	4.50
7/64	4.54	7/63	4.42	7/62	4.48
6/64	4.55	6/63	4.40	6/62	4.47
5/64	4.53	5/63	4.39	5/62	4.50
4/64	4.53	4/63	4.39	4/62	4.56
3/64	4.51	3/63	4.38	3/62	4.60
2/64	4.51	2/63	4.37	2/62	4.62
1/64	4.51	1/63	4.38	1/62	4.61

<HELP> for explanation. Index **HP**

CLOSE/MID/YIELD

[illegible]00DUAVG Moodys Bond UTIL AVG 5.55 AVERAGE YIELD

HI 10.31 ON 10/31/74

Range [illegible] to [illegible] Period Monthly AVE 5.23

LOW 2.71 ON 5/31/47

DATE	YIELD	DATE	YIELD	DATE	YIELD
12/61	4.62	12/60	4.58	12/59	4.86
11/61	4.63	11/60	4.56	11/59	4.86
10/61	4.66	10/60	4.56	10/59	4.95
9/61	4.67	9/60	4.48	9/59	4.89
8/61	4.67	8/60	4.53	8/59	4.77
7/61	4.60	7/60	4.71	7/59	4.79
6/61	4.52	6/60	4.75	6/59	4.77
5/61	4.49	5/60	4.76	5/59	4.67
4/61	4.46	4/60	4.70	4/59	4.49
3/61	4.43	3/60	4.79	3/59	4.43
2/61	4.51	2/60	4.89	2/59	4.46
1/61	4.57	1/60	4.92	1/59	4.43

<HELP> for explanation. Index **HP**

CLOSE/MID/YIELD

MOODUAVG Moodys Bond Aa1 AVG 5.55 AVERAGE YIELD

Range 12/31/46 to 10/31/73 Period Monthly

HI 10.31 ON 10/31/74
AVE 5.23
LOW 2.71 ON 5/31/47

DATE	YIELD	DATE	YIELD	DATE	YIELD
12/58	4.39	12/57	4.29	12/56	3.93
11/58	4.40	11/57	4.49	11/56	3.86
10/58	4.46	10/57	4.48	10/56	3.82
9/58	4.41	9/57	4.45	9/56	3.73
8/58	4.16	8/57	4.33	8/56	3.60
7/58	3.94	7/57	4.19	7/56	3.48
6/58	3.88	6/57	4.06	6/56	3.44
5/58	3.89	5/57	3.98	5/56	3.44
4/58	3.90	4/57	3.94	4/56	3.38
3/58	3.95	3/57	3.95	3/56	3.27
2/58	3.87	2/57	3.97	2/56	3.26
1/58	3.99	1/57	3.98	1/56	3.28

<HELP> for explanation. Index **HP**

CLOSE/MID/YIELD

FUDDUAVG Moody's Bond UTIL AVG 5.55 AVERAGE YIELD

Range 12/31/42 to 11/30/76 Period Monthly

HI 10.31 ON 10/31/74
AVE 5.23
LOW 2.71 ON 5/31/47

DATE	YIELD	DATE	YIELD	DATE	YIELD
12/55	3.31	12/54	3.10	12/53	3.37
11/55	3.28	11/54	3.10	11/53	3.38
10/55	3.27	10/54	3.11	10/53	3.46
9/55	3.29	9/54	3.13	9/53	3.58
8/55	3.26	8/54	3.12	8/53	3.54
7/55	3.22	7/54	3.13	7/53	3.56
6/55	3.21	6/54	3.15	6/53	3.62
5/55	3.19	5/54	3.13	5/53	3.57
4/55	3.17	4/54	3.13	4/53	3.44
3/55	3.17	3/54	3.14	3/53	3.33
2/55	3.15	2/54	3.23	2/53	3.29
1/55	3.12	1/54	3.31	1/53	3.23

<HELP> for explanation. Index **HP**

CLOSE/MID/YIELD

MOODUAVG Moodys Bond UTIL AVG 5.55 AVERAGE YIELD

Range 12/31/46 to 11/30/76 Period Monthly

HI 10.31 ON 10/31/74
AVE 5.23
LOW 2.71 ON 5/31/47

DATE	YIELD	DATE	YIELD	DATE	YIELD
12/52	3.19	12/51	3.24	12/50	2.87
11/52	3.19	11/51	3.21	11/50	2.86
10/52	3.22	10/51	3.14	10/50	2.85
9/52	3.20	9/51	3.09	9/50	2.84
8/52	3.20	8/51	3.13	8/50	2.80
7/52	3.20	7/51	3.19	7/50	2.83
6/52	3.20	6/51	3.18	6/50	2.81
5/52	3.19	5/51	3.10	5/50	2.81
4/52	3.19	4/51	3.07	4/50	2.79
3/52	3.21	3/51	2.95	3/50	2.78
2/52	3.19	2/51	2.86	2/50	2.78
1/52	3.23	1/51	2.85	1/50	2.79

<HELP> for explanation. Index **HP**

CLOSE/MID/YIELD

[illegible] Moody's Bond [illegible] AVG 5 5% AVERAGE YIELD

Range [illegible] to [illegible] Period Monthly

HI 10.31 ON 10/31/74
AVE 5.23
LOW 2.71 ON 5/31/47

DATE	YIELD	DATE	YIELD	DATE	YIELD
12/49	2.79	12/48	3.06	12/47	3.02
11/49	2.81	11/48	3.09	11/47	2.93
10/49	2.83	10/48	3.07	10/47	2.87
9/49	2.84	9/48	3.07	9/47	2.78
8/49	2.86	8/48	3.07	8/47	2.72
7/49	2.89	7/48	3.02	7/47	2.72
6/49	2.93	6/48	2.96	6/47	2.72
5/49	2.95	5/48	2.95	5/47	2.71
4/49	2.96	4/48	2.97	4/47	2.71
3/49	2.97	3/48	3.01	3/47	2.73
2/49	2.99	2/48	3.03	2/47	2.72
1/49	2.99	1/48	3.03	1/47	2.73

<HELP> for explanation. Index **HP**

CLOSE/MID/YIELD

MOODUAVG Moodys Bond UTIL AVG Page 11 /11

5.55 AVERAGE YIELD

HI 10.31 ON 10/31/74

Range 12/31/46 to 06/30/76 Period Monthly AVE 5.23

LOW 2.71 ON 5/31/47

DATE	YIELD	DATE	YIELD	DATE	YIELD
6/47	2.72				
5/47 L	2.71				
4/47	2.71				
3/47	2.73				
2/47	2.72				
1/47	2.73				
12/46	2.77				

11 Index **HP**

CLOSE/MID/YIELD

Page 1 /11

MOODUAVG Moody's Bond UTIL AVG 5.55 AVERAGE YIELD

HI 16.89 ON 9/30/81

Range 12/31/76 to 6/30/06 Period Monthly AVE 9.35

LOW 5.39 ON 6/30/05

DATE	YIELD	DATE	YIELD	DATE	YIELD
11/06	5.82	12/05	5.83	12/04	5.93
10/06	6.01	11/05	5.88	11/04	5.97
		10/05	5.79	10/04	5.94
9/06	6.03	9/05	5.54	9/04	6.01
8/06	6.20	8/05	5.51	8/04	6.18
7/06	6.37	7/05	5.50	7/04	6.34
6/06	6.39	6/05	5.39	6/04	6.53
5/06	6.39	5/05	5.60	5/04	6.68
4/06	6.28	4/05	5.72	4/04	6.38
3/06	5.99	3/05	5.86	3/04	6.01
2/06	5.83	2/05	5.64	2/04	6.17
1/06	5.77	1/05	5.80	1/04	6.23