I

GETTING STARTED IN UTILITIES

1

UTILITIES BASICS

It's 7:30 a.m., and if your alarm clock was working, it would have woken you for work an hour ago. The cold wakes you instead—it's only 40 degrees in your bedroom. Near hypothermic, you flip the light switch—nothing. Grumbling and very late, you blindly stumble out of bed, stubbing your toe. You painfully hobble toward the kitchen for a redeeming hot cup of coffee. Sadly, there's no water coming out of your faucet. Cold, caffeine-less, and cantankerous, you leave for work hoping your job is still waiting for you.

Utilities may not have sexy brand names or occupy skyscrapers on Wall Street, but the sector will get your attention if your electricity, gas, and water are turned off at six in the morning. The Utilities sector plays a critical role in both our personal lives and the global economy, and can serve an equally important purpose in an investor's portfolio.

It's likely most people don't worry about understanding how the Utilities sector operates. But for investors, understanding key aspects of the sector—the tremendous amount of investment required to build utilities infrastructure and the complex regulations involved in pricing the services, for example—is critical in determining how Utilities stocks behave, when to overweight or underweight Utilities,

and what types of Utilities stocks are likely best for the prevailing economic conditions, political environment, and market sentiment.

This book's aim is to help you become a better investor in the Utilities sector by teaching you to think critically in order to form your own investment views. To succeed, you don't need a set of hard-and-fast investment rules, much less an MBA or a PhD in electrical engineering. Rather, all you need is an understanding of what makes Utilities more likely to perform better or worse than the market overall.

It's not trivial, but once you understand the sector's characteristics and most important investment drivers, you can begin forming those opinions for yourself. And to get you to that point, we'll first cover Utilities 101.

UTILITIES 101

Utilities sell electricity, natural gas, and water—three of the most important commodities on the planet. You probably use all three when you turn on the lights and wash your face, and no matter where you work—or go to school—you're probably using at least one of them all day. Utilities are, without a doubt, a critical part of the fabric of the modern era: Gas heats our homes, cooks our food, and powers many of our factories; access to clean water is critical to human health and hygiene; and electricity is the lifeblood of the world as we know it—without it, economic productivity would plummet, modern technology would cease to function, and life would become much more difficult.

Although all three commodities are essential to modern society, electricity is by far the most important to the Utilities sector (water distribution, while obviously important, remains largely controlled by municipalities). Most investor-owned utilities are, to some extent, involved in the generation, transmission, or retail distribution of electricity. Because so much of the sector—about 90 percent, depending on how you measure—is involved in the electricity business, we'll spend most of this book focused on the Electric Utilities industry. (Also, to clarify, you'll notice when we refer to the Utilities sector or

a Utilities industry, like Electric Utilities, that's capital "U" Utilities. When referring to firms within the Utilities sector, those are lower case "u" utilities.)

However, though the commodities are different, the Gas and Water Utilities industries share many of the same underlying characteristics and business drivers with the Electric Utilities industry—in many cases, utilities operate in multiple industries and sell two or even three of the commodities. So while many examples in this book may come from the Electric Utilities industry, the lessons are very often applicable to all the sector's industries.

While each industry has its differences and firms have their own unique characteristics, utilities overall share the same general characteristics. Typically, the Utilities sector:

- Has very defensive characteristics
- Produces goods and services with inelastic demand
- Is very capital intensive
- Is heavily regulated

A DEFENSIVE SECTOR

The Utilities sector has traditionally underperformed when the market rallies, but when the market falls, Utilities often remains relatively resilient. For broad stock market investors, this is the sector's defining characteristic. (Investing professionals sometimes jibe that Utilities is the "widows-and-orphans" sector—best for those with less of a stomach for market volatility.) And as a typically defensive sector, it can be a useful (and at times powerful) risk management tool to help reduce overall portfolio volatility, generate investment income, and help take the teeth out of a bear market.

Best in a Bear

In any given year, one could say the stock market can really only do one of four things: It can go up a lot, it can go up a little, it can go down a little, or it can go down a lot (a bear market). During a

bear market, most sectors, if not all, will fall—even those considered defensive (Health Care, Consumer Staples, and Utilities). But in a bear market scenario, though Utilities may also be down on an absolute basis, the sector is also most likely to outperform the market—on a relative basis. Table 1.1 shows the annualized return for the S&P 500 and the S&P 500 Utilities sector during the last 13 bear markets. As you can see, Utilities underperformed only twice. Most times, Utilities outperformed the broader market during a bear.

However, during bull markets, Utilities' limited leverage to a booming economy means Utilities underperformed in 8 out of 12 of the last bull markets (shown in Table 1.2). Again, note that in a bull market Utilities can rise too, just likely not as much as the broad market. And in a bear market, it can be down. What we are focusing on is its performance relative to the broad market.

Table 1.1 S&P 500 Utilities Versus S&P 500 Composite in Bear Markets

Bear Market Start	Bear Market End	S&P 500 Utilities	S&P 500 Composite	Relative Return
09/07/1929	06/01/1932	−83.0%	−84.5%	1.4%
03/06/1937	***04/28/1942***	***−61.7%***	***−48.6%***	***−13.0%***
05/29/1946	***06/13/1949***	***−20.5%***	***−20.3%***	***−0.2%***
08/02/1956	10/22/1957	−11.2%	−19.1%	7.9%
12/12/1961	06/26/1962	−24.1%	−27.1%	3.0%
02/09/1966	10/07/1966	−14.3%	−21.0%	6.7%
11/29/1968	05/26/1970	−30.0%	−33.9%	3.9%
01/11/1973	10/03/1974	−44.9%	−46.0%	1.0%
11/28/1980	08/12/1982	7.9%	−22.5%	30.4%
08/25/1987	12/04/1987	−16.0%	−33.1%	17.1%
07/16/1990	10/11/1990	−1.3%	−19.2%	17.9%
03/24/2000	10/09/2002	−43.0%	−47.4%	4.4%
10/09/2007	03/09/2009	−42.9%	−55.3%	12.4%
Annualized Bear Market Returns		**−22.2%**	**−26.1%**	**3.9%**

Source: Global Financial Data, Inc.; S&P 500 Utilities Total Return Index, S&P 500 Total Return Index, from 08/31/1929 to 03/09/2009.

Table 1.2 S&P 500 Utilities Versus S&P 500 Composite in Bull Markets

Bull Market Start	Bull Market End	S&P 500 Utilities	S&P 500 Composite	Relative Return
06/01/1932	03/06/1937	131.8%	398.3%	−266.5%
04/28/1942	***05/29/1946***	***316.8%***	***203.9%***	***112.9%***
06/13/1949	08/02/1956	164.1%	388.5%	−224.5%
10/22/1957	***12/12/1961***	***158.6%***	***104.9%***	***5.37%***
06/26/1962	02/09/1966	57.6%	94.1%	−36.4%
10/07/1966	11/29/1968	24.5%	54.7%	−30.2%
05/26/1970	01/11/1972	40.8%	83.7%	−42.9%
10/30/1974	***11/28/1980***	***143.9%***	***174.2%***	***−30.4%***
08/12/1982	08/25/1987	213.3%	277.6%	−64.4%
12/04/1987	07/16/1990	54.9%	80.5%	−25.6%
10/11/1990	03/24/2000	174.0%	546.2%	−372.2%
10/9/2002	***10/09/2007***	***227.5%***	***120.7%***	***106.8%***
Annualized Bull Market Returns		**19.0%**	**24.2%**	**−5.2%**

Source: Global Financial Data, Inc., S&P 500 Utilities Total Return Index, S&P 500 Total Return Index, from 08/31/1929 to 03/09/2009.

Bear Market Utilities Bets

Utilities has, throughout history, fairly consistently outperformed during bear markets and underperformed during bull markets. Consider this: If you'd invested $1 million into the S&P 500 Composite in 1929, you'd have earned about $1 billion by the end of 2009.[1] However, if you'd played defense by putting your entire portfolio in the Utilities sector during every bear market, you'd have nearly twice as much.[2]

Sounds great! Except such a move is likely foolhardy for most investors. It's extraordinarily difficult to call the top of a bull market and the bottom of a bear market, and even more difficult to do so with any degree of consistency. And putting your entire portfolio in one sector is a massive bet that, should you be wrong, could seriously harm your relative performance for years to come. (For more information on forecasting bear markets, see Ken Fisher's *The Only Three Questions That Count* [John Wiley & Sons, 2006].)

Since bull markets tend to be longer and stronger than bear markets, the Utilities sector has often lagged the market for considerable periods of time. Why would investors want to learn about a sector like that? For its defensive characteristics, of course. But also, there have been some very notable periods where Utilities significantly outperformed, even during a bull market. Understanding the Utilities sector can help investors identify those periods and determine how to optimally position their portfolios. Further, because Utilities has historically had lower volatility relative to the market, it serves a useful purpose in portfolio diversification.

Low Volatility

One metric investors use to measure a stock's historical volatility is *beta*. Beta describes a given stock's (or sector's) historical returns in relation to the returns of the stock market as a whole. A beta of less than 1 means the security tends to be less volatile than the market, while a beta of more than 1 indicates the stock tends to be more volatile than the market.

Figure 1.1 shows the beta of the MSCI World sectors in relation to the MSCI World Index. As you can see, the Utilities sector has a beta of just 0.56—historically it's been one of the lowest-beta sectors, along with other traditionally defensive sectors like Health Care and Consumer Staples. Theoretically, this means that if the MSCI World moves up (or down) 10 percent, the Utilities sector tends to move up (or down) 5.6 percent.

High Dividend Yields

Another defining characteristic of Utilities is it tends to have fairly high, stable dividends, which some investors find attractive. As Figure 1.2 illustrates, over the past decade, Utilities provided the highest dividend yield in the market.

A dividend represents a return of profit to shareholders. While some firms pay dividends, others don't, preferring to reinvest profits—neither approach necessarily results in better or worse total return over

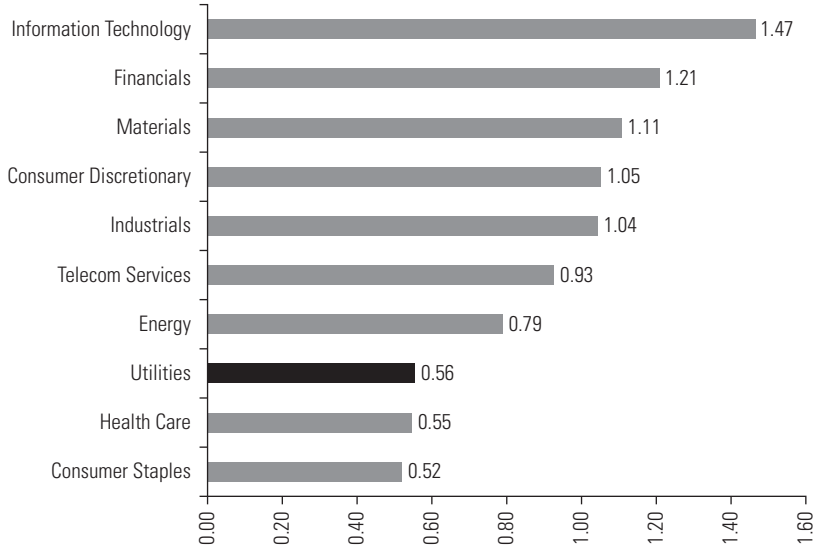


Figure 1.1 Sector Beta Relative to MSCI World Index (12/31/99–12/31/09)

Source: Thomson Reuters, MSCI, Inc.,[3] MSCI World Total Return Index from 12/31/99 to 12/31/09. Beta calculated using monthly returns.

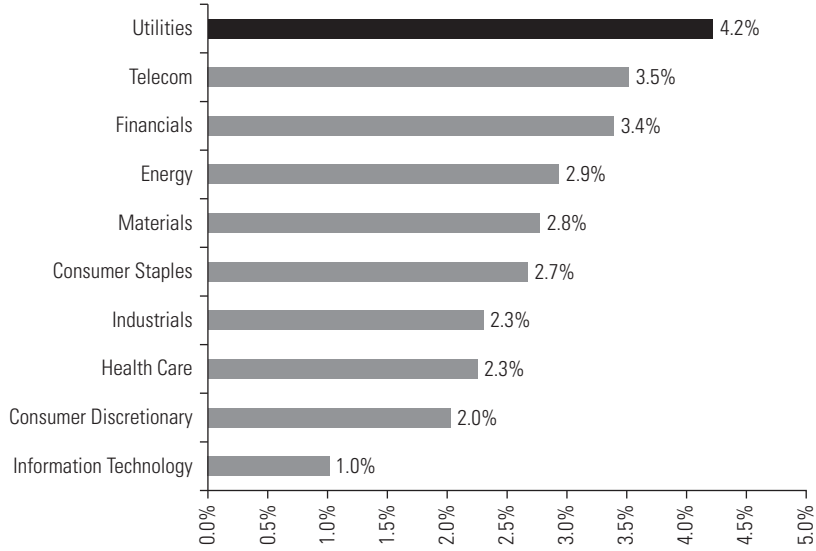


Figure 1.2 Sector Dividend Yields

Source: Thomson Reuters, MSCI Inc.,[4] annualized yields from 12/31/99 to 12/31/09.

time. Because utilities have limited growth opportunities, they tend to distribute profits through dividends rather than reinvesting profits into the firm. Many investors like the perceived "safety" of higher dividends, which helps contribute to greater demand for Utilities during economic downturns and bear markets.

But keep in mind: Though many investors consider dividends to be "safe," this is merely a perception (in the near term, however, perceptions can be powerful demand drivers). Dividends are not a guaranteed source of income. Dividends are only as good as a company's fundamental business prospects, since a company can't pay a dividend if it is unable to generate sufficient capital to do so. Moreover, while an 8 percent dividend yield may sound attractive if risk-free bonds are only yielding 3 percent, a higher dividend yield is often reflective of a riskier stock—or a perception that the dividend might be cut. And an 8 percent yield is little consolation if shares fall 40 percent—a possibility with any stock in any sector of the market, including Utilities.

What investors should care about at the portfolio level is *total return*—price appreciation plus dividends accrued.

Dividends and Taxes

One of the most important factors in determining the value of dividends is tax policy. Although different investors have different tax considerations, dividends may be taxed at a different rate than normal income or long-term capital gains. When tax rates change, it could materially affect the value of dividends relative to other forms of income.

WHAT MAKES UTILITIES DEFENSIVE?

The Utilities sector has tended to be a low-risk/low-reward sector. But what is it about utilities that makes their shares so resilient during a downturn, less volatile than the market, and allows them to pay stable dividends? Generally, the key to stable share prices is stable earnings. From year-to-year, utilities are able to generate relatively consistent—albeit relatively low—earnings growth. The major reason for this is

the heavily regulated nature of the industry. But before we talk about regulation, we'll discuss the concepts of *inelastic demand* and *capital intensity*, two more key characteristics of the sector and major reasons why it's so heavily regulated.

Inelastic Demand for Irreplaceable Commodities

There are few commodities in the world harder to give up than electricity, gas, and water. Even when they become less affordable (e.g., prices rise or incomes fall), it's difficult to adjust our consumption without resulting in a significant negative impact on our daily lives. In economic terms, this means demand for utilities services is income and price *inelastic*. This has three important implications.

First, it means that demand for utilities services isn't very sensitive to income growth or economic activity. Although an economic downturn will reduce the need for electricity, gas, and water—primarily among industrial consumers—demand will usually be much less impacted than it would be for more discretionary goods, like new cars or fancy cell phones. This is one factor that helps the Utilities sector remain relatively resilient during an economic downturn.

Second, it means that utilities—if unchecked by regulation—could significantly raise prices without significantly reducing the amount of consumption.

Third, the essential, irreplaceable nature of utilities means the government has a big interest in ensuring the population gets reliable, cost-effective service from Utilities firms. Without utilities service, people aren't happy, factories can't run, and politicians lose their jobs. And since politicians really don't like losing their jobs, the government often takes a very active role in regulating the sector (though this does not necessarily have the intended effect of improving reliability or reducing costs).

Note to Politicians: Don't Let the Lights Go Out

When millions of Californians lost power during the state's energy crisis in 2001, voters reacted angrily, ultimately recalling Governor Gray Davis from office. He was only the second US governor in history to face such a fate.

A Capital-Intensive Sector

Capital intensity refers to how much fixed capital investment is required in the production process—and hardly anything requires more fixed capital investment than utilities. A tremendous amount of upfront investment in equipment and infrastructure is required before a utility can provide services and start generating revenue. Utilities must build massive power plants, hundreds of miles of gas pipelines and electric transmission lines, and complex local electric, gas, and water distribution networks.

Figure 1.3 shows fixed asset investment relative to annual revenue—in other words, how much in fixed asset investment is required to drive a dollar of revenue? Utilities are currently highest—requiring about $2.25 in fixed asset investments for every dollar in annual revenue. Plus, it is often many years before that fixed investment ever generates any revenue. Consider this: A 600-megawatt, coal-fired power plant costs about $1.2 billion and takes about four years to

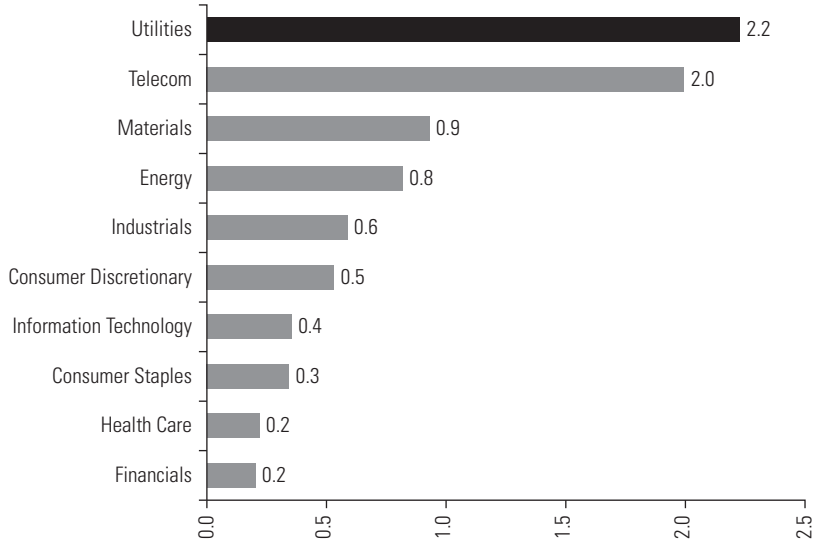


Figure 1.3 Fixed Asset Investment to Annual Revenue

Source: Standard & Poor's Research Insight®,[6] 12/31/09. Fixed Assets calculated as Property, Plant & Equipment plus Accumulated Depreciation.

build.[5] That's about $206 to build enough capacity just to power one 100-watt light bulb.

Capital Market Dependence Because utilities are required to make large capital outlays that can take years to generate any revenue, they are highly dependent on investors to provide long-term financing.

There are basically two ways to do this: issuing stock or issuing bonds. Issuing bonds has the benefit of interest payments being tax-deductible while firms must pay taxes on the profits they return to shareholders via dividends. However, as a company issues more debt, the risk the company won't be able to make its interest payments increases. If a firm issues too much debt, its bonds may be downgraded by ratings agencies, and it will become more challenging for the company to obtain financing.

But because utilities tend to have much more stable, predictable earnings than most companies, there is less risk of default, and they usually have significantly more leverage than most other sectors. And while the stability of earnings does tend to keep utilities' borrowing costs relatively low, the high level of debt tends to mean that interest payments make up a large portion of a utility's overall cost structure.

Economies of Scale Heavy infrastructural requirements and their significant financing expense lead to very high fixed costs for the industry. In other words, whether the power plant from our previous example is producing 1 megawatt or 600 megawatts of power, a lot of its costs (e.g., interest expense) are going to stay the same. This provides tremendous *economies of scale*, meaning utilities can significantly reduce their average per-unit costs by increasing production and distributing their fixed costs across a greater amount of output. Said another way, if utilities aren't maximizing their *capacity utilization*, they aren't providing their services at the lowest possible cost, or maximizing their profit potential.

Natural Monopoly The importance of utilities' economies of scale became abundantly clear in the nineteenth century, when companies built competing power lines, gas mains, and sewage systems all in the same city—or sometimes all under the same street! Because they all competed for customers, none were able to maximize capacity utilization, costs for the consumer were exorbitantly high—and utilities struggled to remain profitable.

In his seminal 1848 work, *Principals of Political Economy*, British economist John Stuart Mill asked why such a multitude of water companies were necessary in London, when the city's population could be so much more cost-effectively served by just a single entity. "Why do we need the needless expense of double sets of machinery, even double sets of pipes when the whole of London could be served by just one company?" he lamented.[7] Mill's comments don't just apply to water companies—but rather any company that relies on *network infrastructure* (e.g., gas pipelines, electric transmission grids, or even telephone lines).

Mill coined the term *natural monopoly* to describe a market that could be most cost-effectively served by a single company, and thus was born the basis of regulation in the Utilities industry for most of the past century.

Heavy Regulation

For most of its modern existence, the Utilities sector has been the subject of heavy government regulation. In fact, for much of the twentieth century, many of the world's largest Utilities companies were owned by the government outright. Even today's publicly traded Utilities firms tend to have higher government ownership than any other sector of the market.[8] Why does the government play such an active role in the Utilities sector? In large part, this reflects Mill's notion that Utilities firms are natural monopolies that must be regulated to ensure they don't abuse their dominant position. But as we discussed, it also reflects the essential and irreplaceable nature of utilities. Without utilities, the economy—and very likely the

incumbent government—would collapse, providing governments with a very strong incentive to ensure the sector functions as reliably and cost-effectively as possible.

The Goal of Utilities Regulators The twofold goal of utilities regulation is to provide consumers with the *most reliable service* possible at the *lowest cost possible*. If regulators believe this may be most effectively accomplished through a *natural monopoly*, then so be it. But if monopoly utilities are unchecked by competition, they can charge exorbitant rates and earn outsized profits—defeating the goal of providing the lowest possible cost to consumers. To ensure this doesn't happen, most countries and states have capped the rate of return utilities monopolies are allowed to earn by setting the prices they are allowed to charge their customers.

But utilities regulation isn't that simple. If regulators set rates too low, utilities can't generate sufficient profit to attract the investment required to build and maintain reliable infrastructure—defeating the goal of providing reliable service.

Additionally, over the past 25 years, it has become clear to many observers that at least some parts of the Utilities sector are not necessarily natural monopolies, and may be more cost-effectively and more reliably operated in an environment of open competition.

Regulators have found it terribly difficult to agree on the best way to balance the reliable service goal with the low-cost goal, and as a result regulation often differs tremendously from country to country and even from state to state.

Investing Without Emotion

The role the government should play in the economy is perhaps one of the most hotly contested issues of all time—and the Utilities sector has often been at the center of the debate. But investors are usually best served by focusing not on how they think the sector *should* be regulated, but rather on how it actually is regulated, and how that is likely to impact its investment performance.

Regulation, Risk, and Reward Usually, the more vigorously regulated a Utilities firm is, the less opportunity it has to earn outsized profits and generate large returns for shareholders. However, a highly regulated firm often faces no competitive pressure or price fluctuations for its products and usually can count on fairly stable earnings, limiting the risk for investors.

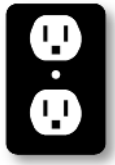
There are pros and cons of regulation—both for consumers and for investors. By limiting the risk for investors, regulation theoretically lowers the cost of capital for utilities, allowing the savings to be passed on to consumers. But if a utility is highly regulated and almost guaranteed a return on its investments, it has little incentive to operate efficiently and may make investments that are entirely unnecessary. This can significantly raise costs for consumers.

Understanding the manner and degree to which utilities are regulated is critical to investors. For example, earnings at a highly regulated utility may steadily move in sympathy with the size of the population in the company's service area and be relatively unaffected by other factors. Conversely, an unregulated utility may see its earnings fluctuate significantly from year to year due to changes in commodity prices, borrowing costs, or economic growth. In Chapter 4, we'll delve into utilities regulation in more depth.

Public Policy Shifts Regulation is an important driver for the Utilities sector, but it's the changes in regulations that often have the biggest impact on share prices. Because Utilities products are so important in our lives, the rules and regulations that govern them have been a topic of heated debate for 150 years. And as political sentiment shifts from the right to the left (and back), these policies can shift dramatically. Over the past hundred years, the way in which the sector is regulated has changed many times over. Throughout its history, the Utilities sector has been unregulated, regulated, nationalized, privatized, and recently has been once again trending back toward deregulation.

When the government does decide to change the rules, it usually creates economic winners or losers, making it very important for

Utilities investors to be acutely aware of the political environment. But it is very difficult to determine if, when, and how public policy will change—and equally difficult to figure out exactly how that will affect the sector, which companies will be winners, and which companies will be losers.



Chapter Recap

You've now been introduced to some of the fundamental characteristics of the Utilities sector. As we progress into later chapters, we will build upon many of the concepts presented in this chapter, including the following:

- The Utilities sector is highly defensive and tends to perform best on a relative basis during bear markets.
- Due to high capital costs and network infrastructure requirements, portions of the Utilities sector may be most cost-effectively operated as monopolies.
- Because utilities are often monopolies and electricity, gas, and water are essential services, the government often plays an active role in regulating the sector. Changes in government regulation can have a major impact on utilities.
- The maturity of the industry, combined with heavy regulation, means Utilities is a low-return, low-growth sector. As a result, utilities typically return a large portion of their income to shareholders via dividends.