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FEATURE ARTICLES

Utility Sales Growth and Shareholder Returns

By Steve Kihm and Tracy La Haise

In the conventional utility business model, the typical local energy utility had an exclusive franchise that enabled it to supply customers with all of their energy needs. While this arrangement has evolved over time—i.e., a number of states have deregulated generation—distribution service remains a regulated monopoly service in most, if not all, cases. Regulated utility prices are set via a calculation of a revenue requirement, which is comprised of the total of all the expenditures incurred by the utility to provide the service. Operating expenses include fuel, labor and maintenance; other expenses include the cost of the capital invested to provide services, such as repayment of, and interest on, debt and a provision for a fair return to equity for investors. Regulators then compute the rate needed to collect the revenue requirement based on an assumed level of sales allocated across all customer types. In this manner, utility profits are tied to increasing energy sales. This article discusses the competitive risk of distributed generation to utility sales growth and its impact on shareholder returns.

There is considerable discussion in the utility industry today about competitive threats that utilities face. It is not direct utility-on-utility competition, for utilities have exclusive franchises. Rather, the competition is from substitutes that reduce the need for grid power—notably energy efficiency improvements and customers' self-generation, such as that enabled by solar PV panels.

For many in the utility industry—including efficiency advocates—the natural response is that such sales erosion must be bad for utility shareholders. After all, lower sales means lower earnings and investors don't like to see that. But let's look at the data to see whether over the long run there is a relationship between utility sales growth and utility shareholder returns.

Long-Run Electric and Natural Gas Utility Stock Returns

In the 20th century *Moody's Public Utility Manual* published data on utility stock indices. (When Mergent took over the publication early in the 21st century they discontinued reporting on those indices, so the series ended at that point.) Figure 1 shows the total

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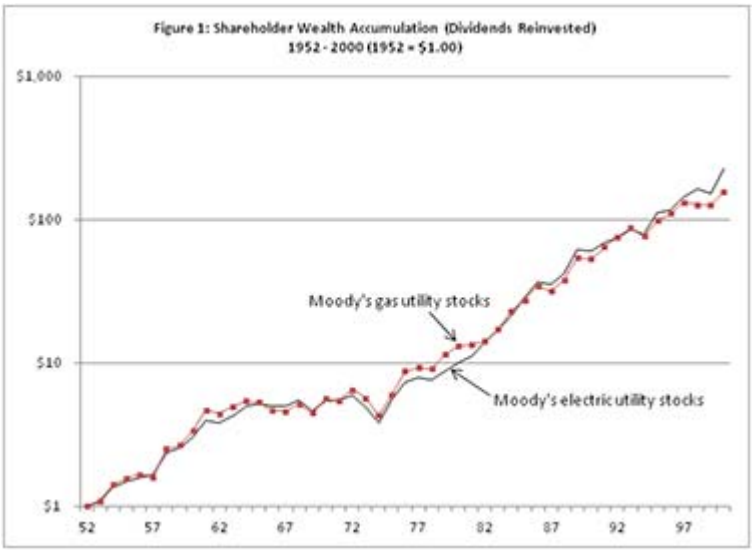
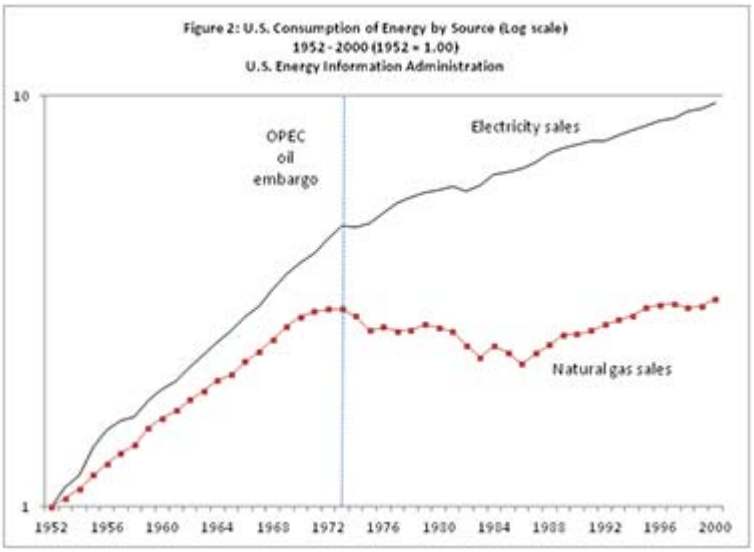
investor wealth accumulation (stock price appreciation plus reinvested dividends) for the Moody's Electric Utility Index and the Moody's Gas Utility Index from 1952 to 2000. We see that over this 48-year period, investors accumulated about the same amount of wealth by investing in either industry.



Should we then conclude that electric and natural gas utilities had about the same sales growth rates over this period? No.

Long-Run Electricity and Natural Gas Sales Growth

Let's examine utility sales over the same period. Prior to the 1973 OPEC oil embargo, electric and gas utility sales grew at about six to seven percent per year. But the embargo changed the way Americans looked at energy use—all types of energy. Following that cataclysmic event, electric sales growth declined to about three percent per year. Natural gas sales were hit even harder—gas utility sales in 2000 were about the same as they were in 1972. See Figure 2.



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We see that even though electricity sales grew much faster than did natural gas sales in the last half of the 20th century, the earlier chart shows that utility investor wealth accumulated at about the same rate. The upshot: utility sales growth does not drive utility stock returns.

What, then, is the driver?

It's Asset Growth, Not Sales Growth, That Delivers Value
Examining the ratemaking model provides the answer—utility profits flow from increasing the size of the rate base, not from selling more energy. Natural gas utilities were able to grow their rate bases by expanding into new areas and replacing aging infrastructure. No more gas flowed through the new pipes than before, but the new investment did drive up profits.

A Caveat—Profits Must Clear the Hurdle Rate to Create Value
Asset growth does drive profits and profits do drive stock valuations—in most, but not all, cases. The following model shows how stock prices are formed.[1]

$$P = \frac{EPS}{k} + \frac{(r-k) \times I}{N \times k}$$

This model is not as intimidating as it might look. *P* is the stock price; *EPS* is earnings per share; *k* is the expected return on the stock (the cost of equity); *r* is the return on equity than the utility earns; *I* is new plant investment; and *N* is the number of shares of stock outstanding. We are interested in what happens when the utility adds a new plant (*I*), so we should focus on the second term on the right side of the equation.

$$\frac{(r-k) \times I}{N \times k}$$

That term will be positive, i.e., it will drive the stock price up, only when the return the utility earns (*r*) is higher than the return investors expect to earn on the utility's stock (*k*). Utility returns are usually larger than the return investors expect on utility stocks, so typically adding assets (increasing *I*) creates value for investors. But notice in Figure 1 that the stock returns from the mid-'60s to the late-'70s. Note that very little wealth accumulation occurred in that period. If we netted out the effect of inflation, we would see that utility investor wealth actually declined over that period. Why? Because the returns the utilities earned did not match those that investors expected in the market.

Looking Forward
So will utilities suffer if competitors steal some of their load? The answer lies not in their sales growth prospects, but in their ability to add assets that earn returns in excess of the return investors expect to make in the market. Utilities must investigate the investment opportunities offered by the changing utility landscape that will keep them in line with customer needs and desires, including those related to customer-side energy efficiency and on-site generation. In this environment, it will be critical for regulation to help utilities manage revenues within an increasingly competitive marketplace. One possibility is for regulators to remove some barriers to the utility adoption of alternative products and services.

Steve Kihm is the director of market research and policy, and Tracy La Haise is the senior project manager at Seventhwave.org (formerly Energy Center of Wisconsin). (Back to Top).

[1] See Myron Gordon, *Cost of Capital to a Public Utility*, Michigan State University (1974).