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High wire act: Creating long-term value in the power industry

J.P.Morgan

1. Executive summary

As the utility industry enters into a period of historically high capital investment, it confronts potentially significant cost of capital challenges that may hinder its ability to create shareholder value. To avoid under-earning on its capital and potentially destroying shareholder value, utilities will need to judiciously manage capital investment decisions. They will also need to pursue regulatory strategies that will enable them to earn a timely and adequate return should interest rates and the industry's overall cost of capital increase over the short to medium term.

Core challenges	
Industry currently under-earning cost of capital	<ul style="list-style-type: none"> • Shareholder value erosion: Since 2006, the utility industry has earned returns on invested capital of 5.0%-6.0% versus cost of capital of 6.0%-7.0% • Under-earning driven by: (1) lower allowed returns; (2) rising cost of equity; (3) regulatory lag; and (4) a challenging economic environment
Significant cost of equity risk	<ul style="list-style-type: none"> • The utility industry beta has increased 50% since 2000, resulting in a utility equity risk premium that is 200 bps higher • The current notionally low interest rate environment is "masking" this increased equity risk premium. Should the 10-year Treasury increase to 5.0% or 6.0% it would result in an industry cost of equity of 10.0%-11.0%, in line with or above current allowed returns on equity
Action plan	
Capital investment and capital structure discipline	<ul style="list-style-type: none"> • Marginal-return investments should be eliminated or deferred – shareholders cannot subsidize ratepayers <ul style="list-style-type: none"> – Is investment economic if the cost of capital increases 50-100 bps in the short term? • Avoid leveraging balance sheet to lower the cost of capital to "bridge" investments with inadequate current return propositions
Proactive and aggressive regulatory strategy	<ul style="list-style-type: none"> • Need to "educate" regulators as to cost of capital risks • Potential need to file serial rate cases to garner rates sufficient to meet cost of capital hurdles • Pursue cost of capital adjustment mechanisms to minimize recovery lag/under-earning
Operational efficiencies	<ul style="list-style-type: none"> • Potential need for further cost reductions/efficiencies to increase investment returns to meet capital costs • Pursue aggressive demand-side management and other methods to potentially defer infrastructure requirements until capital-cost and return metrics are aligned

2. Powering results: Creating value in the electric power industry

In our previous report we reviewed the impact of the financial crisis on the capital markets and its implications for the utility industry.¹ A key takeaway of that report was that the utility industry's significant capital investment requirements and attendant reliance on external funding compounded many of the financial challenges experienced across other industries.

As it was a year ago, the industry is poised to invest record amounts of capital in its regulated infrastructure. However, notwithstanding the recent stabilization in the capital markets, determining the appropriate hurdle rate for allocating capital remains challenging. The economic and financial environment continues to be very fluid, and many of the industry's risk factors remain. Uncertainty around U.S. (and global) fiscal and monetary policy makes the proper pricing of capital that much more difficult. Coupled with these challenging economic dynamics is a political and regulatory environment where allowed returns have been increasingly ratcheted down, reducing the **margin of error** between a power company's cost of capital and its achievable returns.

This narrow margin of value creation is perilous for shareholders as the industry confronts the prospect of an increase in its cost of capital should interest rates begin to rise as projected over the short to medium term. In an environment where there is little margin of error for power companies to earn adequate returns and create shareholder value, thoughtful cost of capital determinations and strategies will be paramount if the utility industry is to efficiently access and deploy its capital.

Within this context, we begin by assessing the industry's historical ability to create shareholder value by earning a **return on invested capital (ROIC)** in excess of its **weighted average cost of capital (WACC)**. Our results suggest that the utility industry managed to earn an adequate return on its invested capital for much of the past decade. In recent years, however, the industry's ROICs have declined below its WACCs, as lower allowed returns, a challenging economic environment, regulatory lag and an increased utility equity risk premium have offset the significant cost of capital benefits of the low-interest-rate environment. Since 2006, regulated utilities have generated ROICs of approximately 5.0%–6.0% compared to WACCs of approximately 6.0%–7.0%, implying destruction in shareholder value during that period. Notably, this inability to earn a sufficient ROIC coincides with the industry's historically elevated capital investment programs.

We then examine the industry's **cost of equity**. Notwithstanding the current historically low 10-year Treasury rate environment, the industry's cost of equity is currently in line with to slightly above historical levels. However, this current cost of equity is deceptive. Over the past decade, the industry's beta and its equity risk premium have increased by approximately 50% and 200 bps, respectively. The true impact of this increased equity risk profile on the industry's cost of equity has been masked by the low-interest-rate environment.

¹ *Challenges ahead: Building a power infrastructure in today's financial paradigm*, J.P. Morgan, April 2009

Thus, while the industry's current cost of equity is in line with historical levels, an increase in the 10-year Treasury rate to 5.0%–6.0% (as many project), would imply a 10.0% to 11.0% cost of equity, well above historical levels and potentially in excess of returns on equity (ROEs) allowed under current regulations. At a minimum, the cost of equity would be within the approximately 100–150 bps margin of error between the current median allowed ROE (10.7%) for the utility industry and what it has actually been able to earn once recovery lag and other return-diminishing factors are accounted for. This reduced margin of error, in turn, increases the chance a utility will not generate adequate ROEs to compensate its equity investors.

Ultimately, today's utility shareholder value is significantly leveraged to interest rates. This hidden, but real, cost of capital risk for the industry is exacerbated by the current challenging economic, political and regulatory environment, which has resulted in the continued ratcheting down of allowed returns. Should interest rates increase, the industry will be challenged to reverse this rate-compression bias in a timely way, potentially resulting in under-earning on capital investment and jeopardizing shareholder value.

EXECUTIVE TAKEAWAYS

1. In recent years, only a small fraction of utilities have earned returns on invested capital (ROICs) that were higher than their cost of capital
2. The main challenge has been declining ROICs and, most recently, increasing costs of capital
3. The cost of capital is leveraged to the current low-interest-rate environment. Should Treasury rates increase from current levels, then the industry would face a higher cost of capital. At the same time, allowed ROEs have been dropping
4. Because of the regulatory lag and other related issues, utilities typically need to have ROEs at least 100 bps higher than their cost of equity to break even
5. With projected capital investment at record levels, the stakes could not be higher, so the industry must adequately assess and anticipate these cost of capital challenges and proactively seek redress

3. Industry risk factors: Then and now

In Figure 1, we revisit some of the observations of our previous report to assess whether they still hold true in today’s more normalized capital markets environment. As we describe below, both the capital and bank markets have improved, and many firms have reduced their capex programs. In addition, we have seen a surprisingly rapid decline in the cost of capital due to tightening risk premia and an arguably artificially compressed Treasury rate environment. Together these factors have reduced the industry’s concern about future financial stability. On the other hand, many risk factors persist, including a challenging regulatory environment, likely tax increases, and the distorting effects of low Treasury rates.

Figure 1

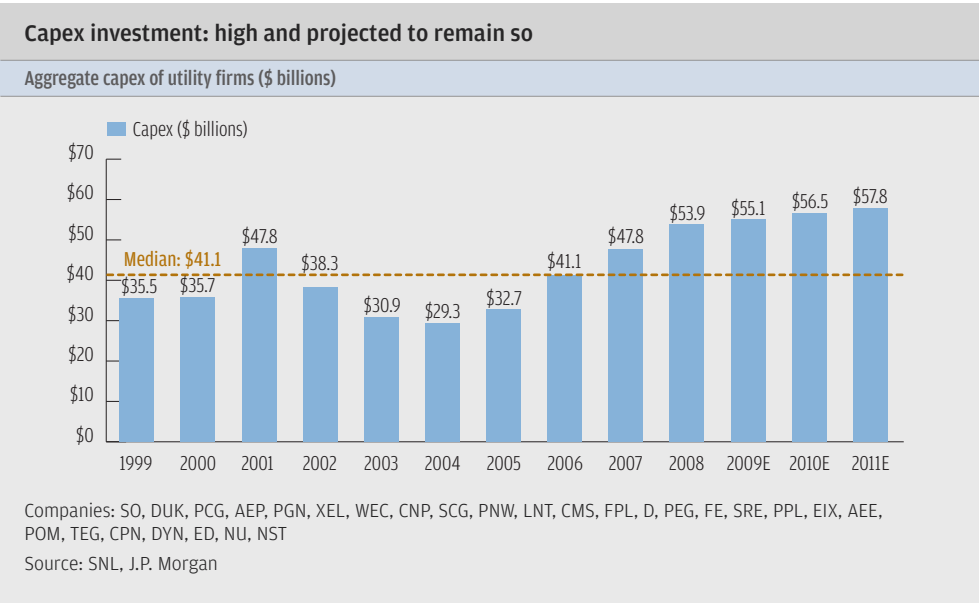
Industry risk factors: diminished, but not gone		
	One year ago	Today
Capex and cash flow	<ul style="list-style-type: none"> • High capex and negative free cash flow 	<ul style="list-style-type: none"> • Despite capex reductions, capex levels and negative free cash flow projections remain at historic highs
External funding need/access	<ul style="list-style-type: none"> • Significant external funding needs <ul style="list-style-type: none"> – BBB and lower utilities in particular faced significantly higher capital costs and volatility 	<ul style="list-style-type: none"> • Continued significant external funding needs, exacerbated by lower projected earnings <ul style="list-style-type: none"> – Industry WACC lower than pre-crisis, with robust market access
Bank dependency	<ul style="list-style-type: none"> • Bank dependency and low balance-sheet liquidity <ul style="list-style-type: none"> – Higher costs and large bank maturity towers, with uncertain future bank capacity to roll 	<ul style="list-style-type: none"> • Balance-sheet cash still low and towers still looming <ul style="list-style-type: none"> – Costs have moderated and bank balance sheets have improved
Cost of capital	<ul style="list-style-type: none"> • Increased equity risk premium <ul style="list-style-type: none"> – Leading to higher cost of capital 	<ul style="list-style-type: none"> • Utility equity risk premium has abated but remains significantly higher than in 2000 <ul style="list-style-type: none"> – Effect on cost of equity masked by low Treasury rates
Regulation	<ul style="list-style-type: none"> • Regulatory uncertainty <ul style="list-style-type: none"> – Anticipated continued downward rate pressure 	<ul style="list-style-type: none"> • Downward rate pressure persists, driven by challenging economic environment
Interest rate environment	<ul style="list-style-type: none"> • Risk of rising Treasury rates <ul style="list-style-type: none"> – High deficits expected to lead to rising Treasury rates 	<ul style="list-style-type: none"> • Futures market and economists predicting higher rates <ul style="list-style-type: none"> – But rates still low due to Fed policy and flight-to-quality/market uncertainty dynamics
Taxes	<ul style="list-style-type: none"> • Dividend taxes likely to increase 	<ul style="list-style-type: none"> • Dividend taxes still likely to increase
Pension liabilities	<ul style="list-style-type: none"> • Rising pension liabilities <ul style="list-style-type: none"> – Market collapse hurt asset portfolio valuations 	<ul style="list-style-type: none"> • Pension liabilities still higher than pre-crisis • Stock performance helped pension assets, but lower discount rates increased liabilities
Commodity exposure	<ul style="list-style-type: none"> • Volatility reducing earnings predictability 	<ul style="list-style-type: none"> • Volatility declining; exposure still there, but price of insurance has decreased
Source: J.P. Morgan		

4. Capex spending likely to remain at historical highs

Cost of capital considerations are never more important than in periods of significant capital investment. In the traditionally capital-intensive utility industry, projected industry capital expenditures for the next five years are significantly above historical norms. Over the 10-year period of 1999 to 2008, the utility industry invested on average \$39 billion in capital per year. For 2010–2011, aggregate annual capital expenditures for the power industry are projected to be approximately \$57 billion, an almost 50% increase. Even though many firms have reduced capital expenditures during the crisis, elevated capital investment levels are projected to continue for several years.

Because of the scale of this capital investment commitment, the industry is not generating sufficient cash flow to cover its capital expenditures. In 2008, a typical power company spent about 1.34x its cash flow from operations on capex, versus only about 0.35x for industrial firms. This industry cash-flow deficit is compounded by the industry’s significant dividend commitments. As a result, the industry’s 2008 cash flow from operations covers dividends and capex only 0.59x, compared with 1.74x for industrial companies. These coverage levels exclude potentially material pension funding requirements incurred as a result of the financial crisis. The industry will therefore need to access the external capital markets significantly in the coming years.

Figure 2



EXECUTIVE TAKEAWAY

Because of its robust capex plans, the power industry will continue to rely on external capital markets to fund capex

5. The historical performance: ROIC versus WACC

As the industry enters this significant period of infrastructure investment, we must first assess how successful the industry has been in allocating almost \$400 billion of capital over the 1999–2008 period. Has the industry earned an ROIC that was higher than its cost of capital (one way to assess value creation)? And what does this historical performance portend for the industry as it enters a robust period of capital investment?

Basic results: We track the difference between ROIC and WACC for regulated and hybrid utilities in the figures below. There are two principal conclusions of this analysis: First, regulated and hybrid firms’ ROICs outstripped their WACCs for most of the past decade, creating value for their shareholders. As one would expect for a regulated or partially regulated business, the value creation was modest compared to the typical S&P 500 firm, for which the ROIC-to-WACC spread averaged about 2 percentage points over the last decade. Second, while hybrid utilities appear to have performed better than regulated utilities, both have failed to create value recently. The ROIC of the typical regulated utility firm declined from around 7% to just below 5.5%. This decline has been exacerbated by an increase in the cost of capital from around 5% in 2004 to above 6.5% currently. Hybrid utilities have fared better; nevertheless, a significant percentage of the hybrid utilities in the sample still failed to earn returns in excess of their cost of capital over the last decade.

Figure 3

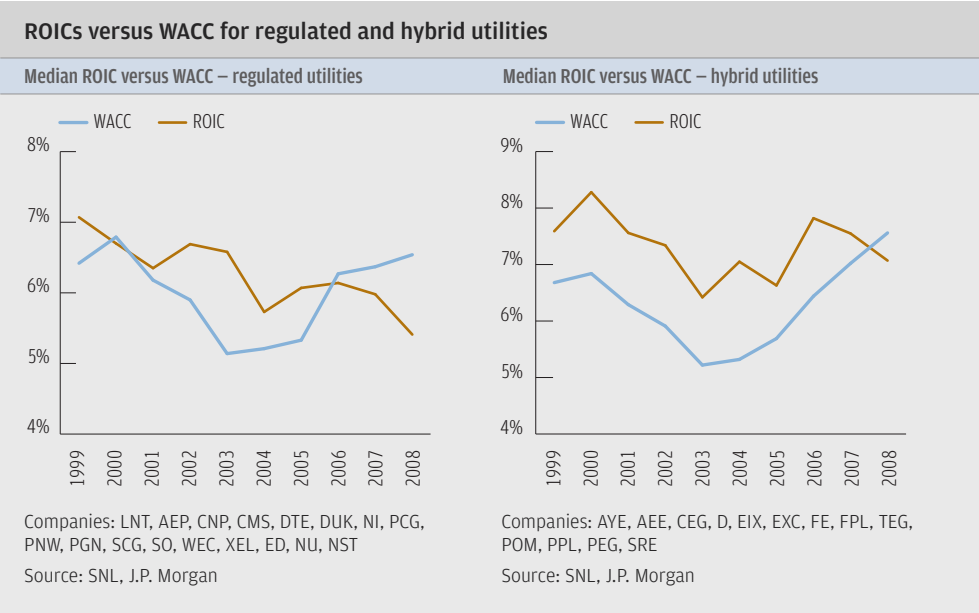
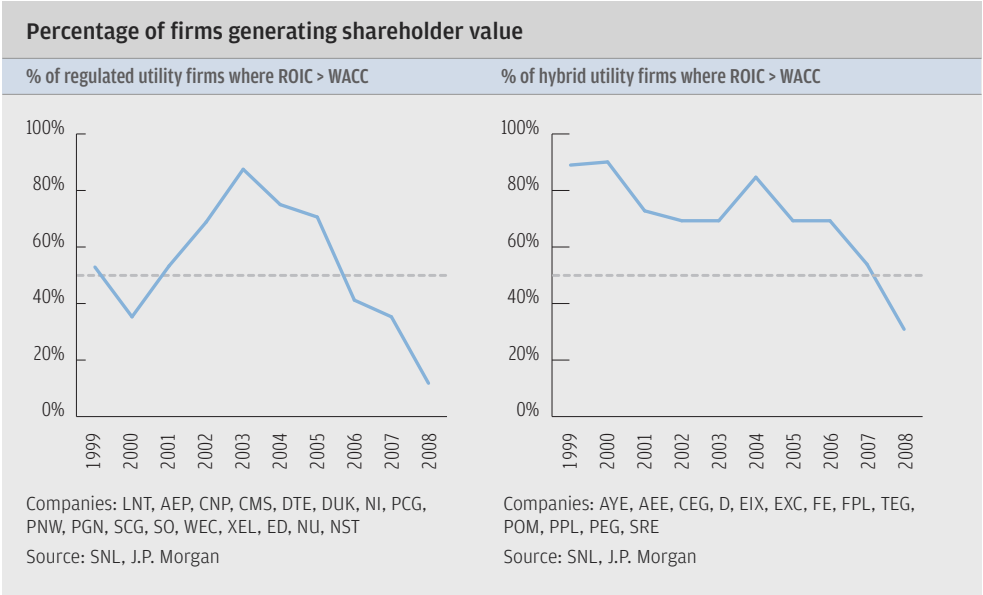


Figure 4



Measuring ROIC: ROIC is, most generically, the amount of cash flow generated divided by the aggregate amount of capital utilized. Although ROIC is just one of many metrics for measuring financial performance, it is widely used because of its direct relation to the cost of capital. If a firm's ROIC exceeds its WACC, then its returns exceed its costs, and value is created. Conversely, an ROIC below the WACC implies value destruction. This measure typically does not perform well for businesses with significant capital-investment-driven growth opportunities. In this case, it may not track value creation as well when capital is allocated to valuable projects that do not generate any or only limited earnings or cash flows during construction or due to factors such as regulatory recovery lag.

There is typically no dispute about the cash flow metric (the numerator). The capital invested may, however, be measured differently. To measure capital, we employed the definition of debt used by the rating agencies. This includes balance-sheet debt, capitalized leases and unfunded pension liabilities.² We estimated the WACC accordingly. Some analysts also include deferred taxes in their definition of capital and show even more pronounced underperformance by utilities. We discuss the pros and cons of this approach in the Appendix.

Hybrid sector versus regulated sector: The relative outperformance of the hybrid sector compared with the regulated sector is attributable to a number of factors. First, notwithstanding the higher cost of capital that merchant generation companies have relative to primarily regulated utilities, the observed equity betas do not reflect a material difference for hybrids versus pure-play regulated utilities. Indeed, a hybrid WACC calculated based on the weighted average of the pure-play independent power producer (IPP) WACC and a regulated utility WACC would imply a higher WACC than is currently reflected in hybrid sector WACCs. This is likely attributable to a number of cross-subsidizing factors, either explicit or implicit, between the merchant generation and the regulated utility business of hybrid utilities. In addition, as addressed below and illustrated in Figure 10, while the regulated

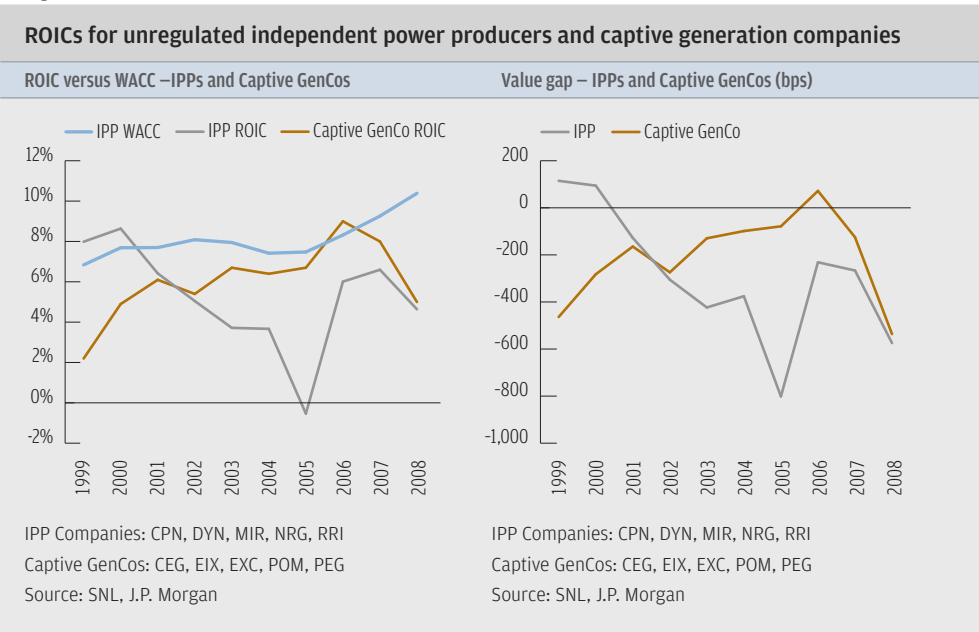
² We have calculated ROIC and WACC with and without underfunded pensions and find that the broad implications of the analysis are similar. The ROIC-WACC spread is, however, a bit larger when pensions are excluded.

utility sector beta has flattened or even declined in recent years, the hybrid sector beta has continued to increase, suggesting that its WACC may increase as investors potentially continue to price in a greater risk premium differentiation for utilities with significant unregulated exposure.

Second, the captive generation companies (Captive GenCos) of hybrid utilities typically own merchant generation assets that are significantly depreciated. This depreciated asset base, coupled with the robust power-price environment over the past several years, helped the ROICs of hybrid utilities since 2004. In today’s more challenging merchant power-price environment, the elevated ROIC ratios enjoyed by Captive GenCos have compressed significantly. Nonetheless, in evaluating just the regulated utility segments of the hybrid sector, we find the returns are in line with those of the regulated sector (these results are not shown in a figure).

Unregulated generation: As we show in Figure 5, the picture is a more stark one for independent power producers (IPPs). The typical IPP firm failed to earn a return on invested capital in excess of its cost of capital over the last decade. IPPs performed worse than Captive GenCos, partially because most of them struggled at least once during the decade with financial distress issues, and hence could not optimize the value of their assets.

Figure 5



EXECUTIVE TAKEAWAY

The regulated and hybrid sectors of the utility industry have struggled to create value in recent years. Allowed returns have declined, while the cost of capital has increased.

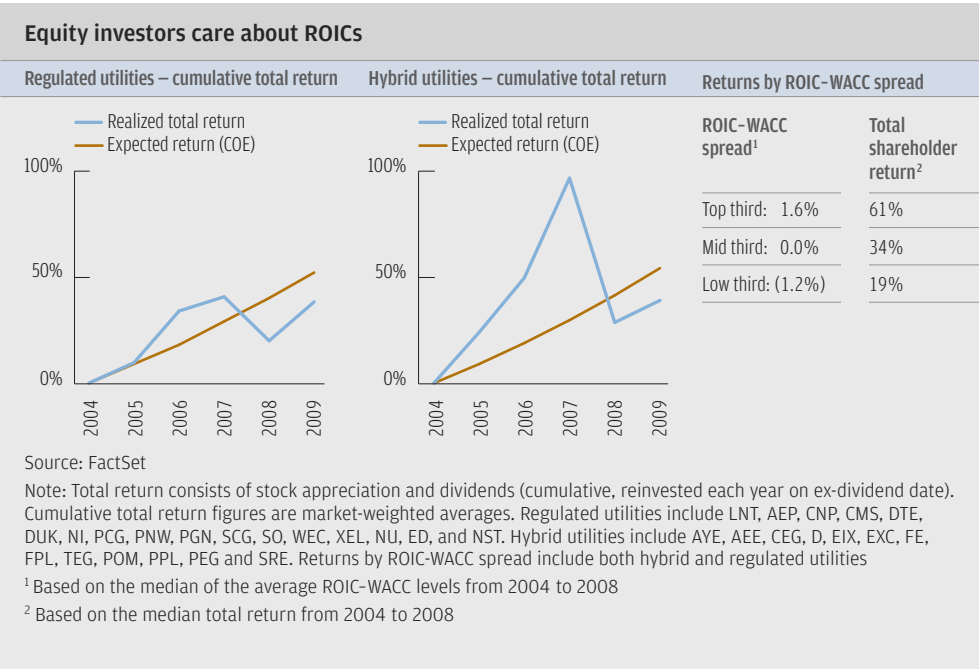
6. Equity investors care about ROICs

The difference between the ROIC and the WACC is a measure of value creation. But do investors care? How do realized stock returns for the industry compare to these balance-sheet-driven metrics? To address this question, we first estimate the return equity investors were expecting for regulated and hybrid utilities at the beginning of the period, e.g. 2004. Then we compare these expected returns to the actual pretax returns over the corresponding period.

In Figure 6 we show that hybrid utilities underperformed investor expectations, with a 39% total cumulative return versus an expected 54%. Regulated utilities fared similarly over the five-year holding period. The primary difference is the performance between 2004 and 2007. Regulated utilities produced returns roughly in line with investor expectations, whereas hybrid utilities outperformed significantly. This outcome is what we would expect based on the ROIC performance of regulated and hybrid utilities relative to WACC over the same time period.

Furthermore, if we bucket firms according to the success they have had in earning returns above their cost of capital, we find that the typical utility firm with a higher spread between ROIC and WACC has realized a greater equity return over the same period. This comparison is only directional, however, because realized stock returns are not just affected by the difference between realized ROIC and WACC, but also by the changing expectations regarding the difference between ROIC and WACC and also the future macro, regulatory and interest-rate environment.

Figure 6



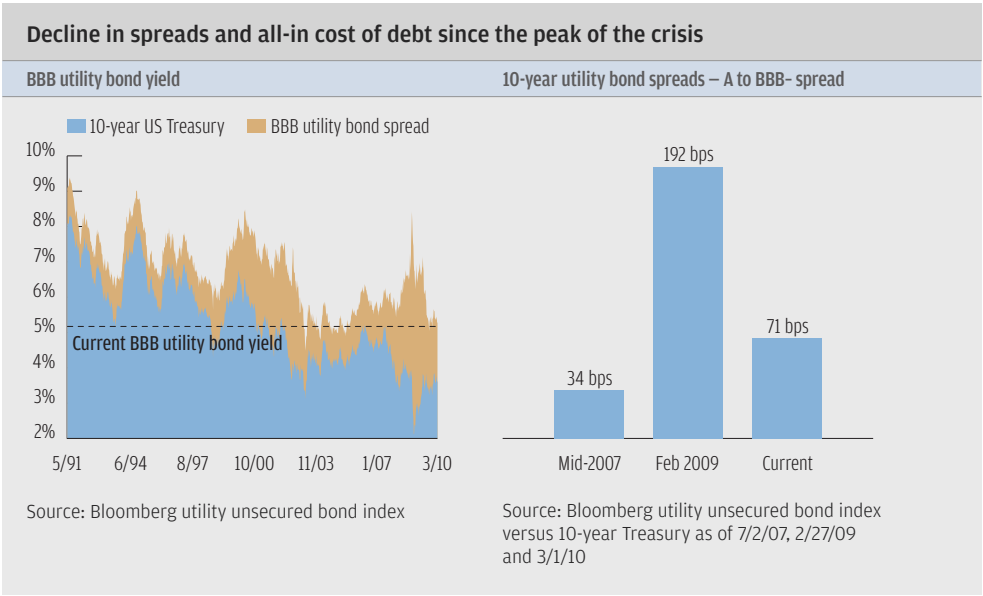
EXECUTIVE TAKEAWAY

Equity investors care about ROIC. Utilities in the top third of ROIC-WACC spread earned a total shareholder return of 61%, versus 19% for utilities in the bottom third.

7. Utility cost of capital: The current benefits of low debt costs

The capital markets recovery since spring 2009 has been exceptional. As shown in Figure 7, prior to the crisis the spread difference between A rated and BBB- rated power companies was only 34 bps. At the height of the crisis, in February 2009, the A to BBB- spread differential surged to 192 bps. Today, the spread difference between A and BBB- has compressed to 71 bps. While the spread differential remains wider than pre-crisis, the low level of current Treasury rates (3.6% versus 5.0% at the start of the crisis) results in an all-in cost of debt for most utilities that is lower than pre-crisis levels and near historic lows.

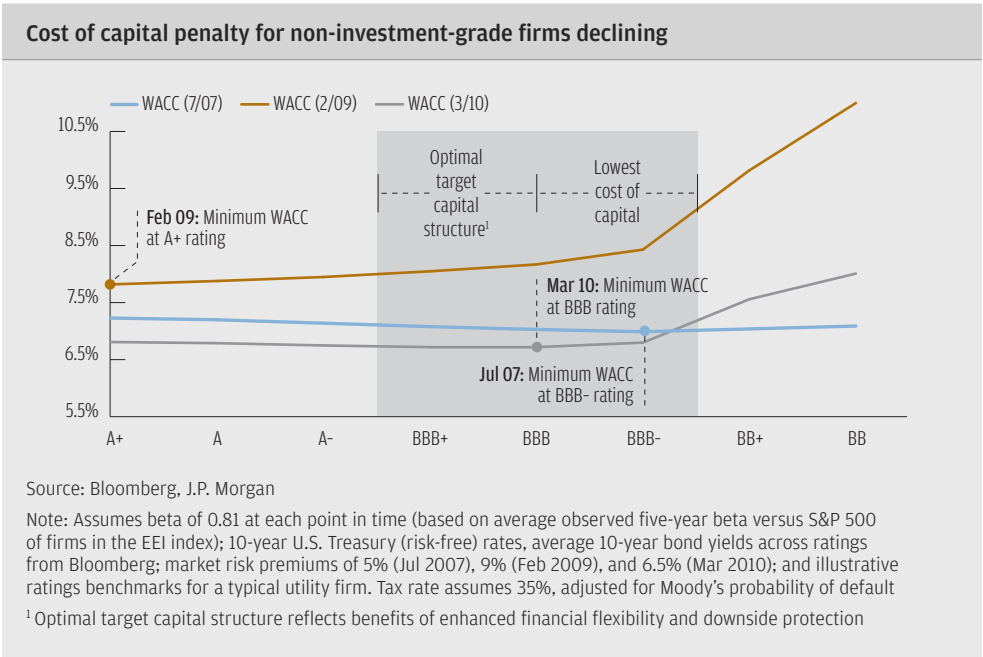
Figure 7



The stabilization in the capital markets and the current low cost of debt have two principal consequences for the power industry. First, as illustrated in Figure 8, the industry’s cost of capital curve has flattened significantly from mid-crisis levels. With a capital market environment now characterized by lower volatility, and risk metrics rebased within historical parameters, the cost of capital curve has reverted to pre-crisis (and arguably more normalized) levels. A mid-BBB rating is now once again consistent with the lowest cost of capital for the

industry. Pre-crisis, a utility’s cost of capital was minimized at leverage metrics consistent with a BBB-/BB+ rating. In contrast, at the peak of the crisis the industry’s lowest notional cost of capital was achieved at an A+ credit rating, with the cost of capital curve beginning to slope upward dramatically at the BBB/BBB- level.

Figure 8

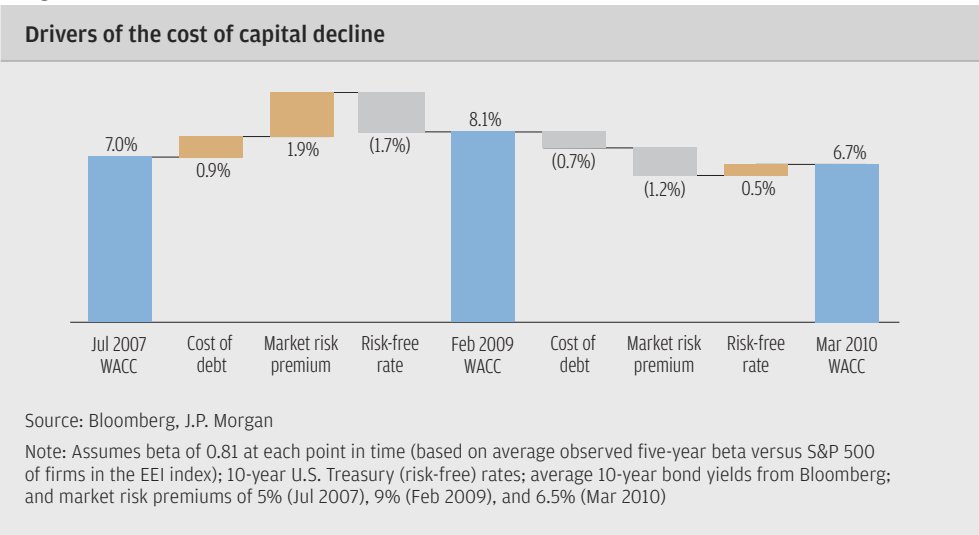


The current WACC curve’s implied lowest cost of capital point does not mean, however, that we recommend BBB as the optimal capital structure for the utility industry, just as we did not recommend utilities trying to achieve an A+ capital structure at the peak of the crisis. As we discussed in our April 2009 report, many other factors determine each firm’s optimal capital structure. As a general proposition, we recommend targeting a capital structure that enhances capital markets access and preserves some flexibility and downside protection relative to the lowest cost of capital. In the current environment, and as has historically been the case, this suggests that utilities should at a minimum target a strong BBB to BBB+ capital structure. The experience of the last two years supports this recommendation, with utilities caught at the lower end of the investment-grade credit curve facing the greatest challenges and most expensive balance sheet remediation.

Further, notwithstanding the flattening of the cost of capital curve relative to mid-crisis levels, the curve still bends significantly upward at low BBB/BBB- rating levels, indicating that investors continue to price in more risk for capital invested in utilities at the lower end of the investment-grade ratings spectrum than they did pre-crisis. Thus, though the curve has generally flattened since the crisis peak, the capital markets have not forgotten the central lesson: Utilities that leverage their capital structure in pursuit of the lowest absolute cost of capital are taking on significantly greater risk and could suffer consequences should they confront market dislocation or a deteriorating economic environment.

The second, and perhaps most important, consequence of the historically low cost-of-debt environment is that the utility industry’s WACC is now below even pre-crisis levels. In July 2007, the implied WACC for the power industry was about 7.0%. At the peak of the crisis, the industry’s implied WACC increased to 8.1%, driven principally by an increased **equity market risk premium**.³ Today the WACC is approximately 6.7%. Thus, while the equity risk premium for the industry has increased 70 bps since 2007, it has been offset by the even greater decline (-120 bps) in the risk-free rate (for which we use the 10-year Treasury rate as a proxy).

Figure 9



EXECUTIVE TAKEAWAY

The historically low interest-rate environment is masking a significant and critical shift in the industry’s capital structure, a significantly increased equity risk premium and, ultimately, exposure to a rising cost of equity.

³ The equity market risk premium is the return investors expect over the risk-free rate (10-year Treasury rate) to invest in equity. The utility equity market risk premium is the risk premium equity investors expect to earn from investing in utility equities.

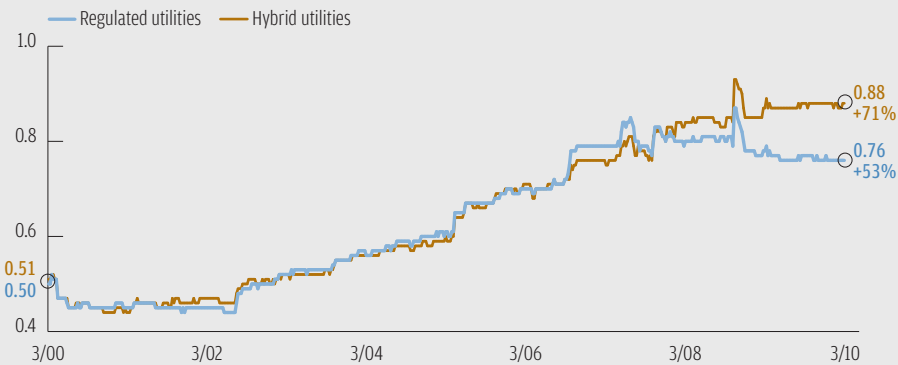
8. Pricing the industry's cost of capital: The hidden cost-of-equity risk

In our April 2009 report we noted the rising beta for the power industry over the past decade. For a levered firm, the beta measures both operational and financial risk and provides an estimate of a firm's or industry's risk relative to the broader market. It is used to estimate the firm's cost of equity capital by adding the equity beta multiplied by the market risk premium to the Treasury rate.⁴

Not surprisingly, the utility sector historically was marked by a low beta, reflecting the sector's stable cash flows, strong credit profile and predictable regulatory environments. To a significant degree, the utility sector continues to be perceived as a low-beta investment proposition. However, as illustrated in Figure 10, since 1999 equity betas for regulated utilities increased from 0.50 to 0.76 (53%) and the hybrid sector's beta increased from 0.51 to 0.88 (71%). Although a number of factors could contribute to an industry's or firm's increasing risk quotient relative to the broader market, much of this increase over the past decade in both the regulated and hybrid utility betas is likely a consequence of the industry's more levered capital structure. This increase has been more pronounced because of the effects of the technology bubble, which drove utility betas to historic lows in the late 1990s. The significantly increased exposure to more volatile unregulated and commodity cash flows through merchant generation as well as marketing and trading platforms also drove the industry's rising betas, particularly in the hybrid sector.

Figure 10

Equity betas remain at elevated levels



Source: FactSet, J.P. Morgan

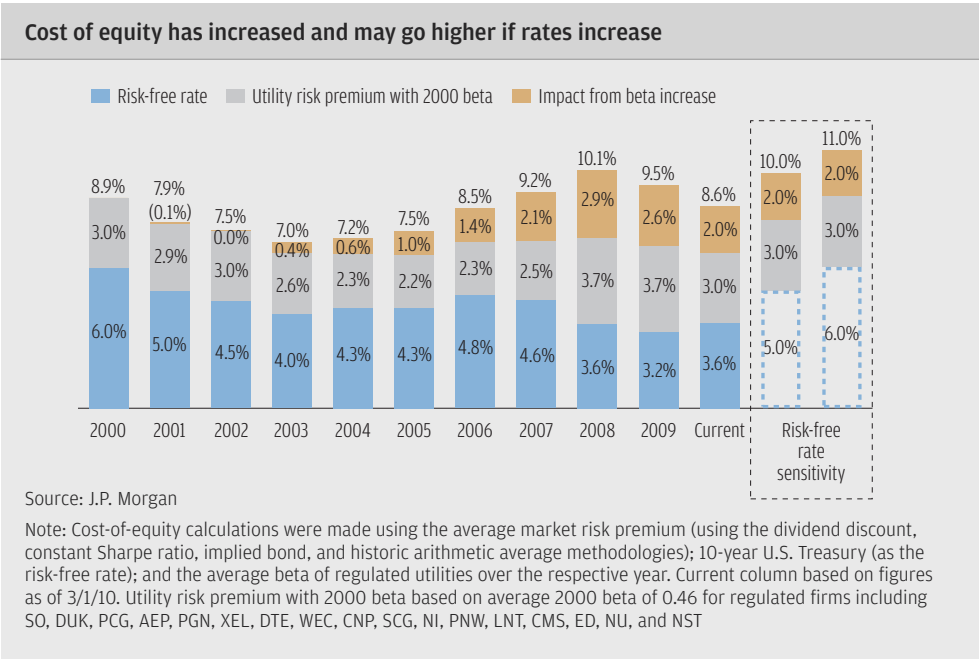
Betas calculated as average five-year historic regression versus the S&P 500 based on weekly observations. Regulated utilities include SO, DUK, PCG, AEP, PGN, XEL, DTE, WEC, CNP, SCG, NI, PNW, LNT, CMS, ED, NU, NST. Hybrid utility firms include EXC, FPL, D, PEG, FE, SRE, PPL, EIX, CEG, AEE, AYE, POM, TEG

⁴ Our market risk premium estimate is the average of the market risk premium calculated from the four methodologies identified in our May 2008 report *"The most important number in finance"*: the dividend discount; constant Sharpe ratio; implied bond; and historic arithmetic average methods.

Primarily as a consequence of this increased risk profile, the industry equity risk premium has increased from 3.0% in 2000 to 5.0% currently, or a 200 bps increase in the industry’s cost of equity (see Figure 11). The effect of this material increase in the industry’s equity risk premium has, however, been masked by the contemporaneous decline in the 10-year Treasury rate from 6.0% to 3.6% currently, or 240 bps. Overall, this implies a current “all-in” utility cost of equity of 8.6% – higher than historical levels, but not materially so. Thus the implications for the industry of this increasing equity risk (beta) over the past decade have not yet manifested.

The true potential cost of equity consequences of an increased equity risk are revealed if we assume that the Treasury rate increases to 5.0% to 6.0% over the short to medium term. Such an assumption seems reasonable given the current level of Treasury futures and the expectations of investors and corporate decision-makers. Under such a scenario, and assuming that the market risk premium remains constant at its current (and near historical arithmetic average) level of approximately 6.5%, the utility industry’s cost of equity would increase to 10% to 11%.

Figure 11
Cost of equity has increased and may go higher if rates increase



The implications of a 10% to 11% utility industry cost of equity are significant. At 11%, the regulated utility sector’s cost of equity would outstrip the current industry median allowed ROE of 10.7%. Even at 10%, the cost of equity would be outside the historical margin of error of what utilities have been able to realize relative to allowed ROEs. As illustrated in Figure 12, over the past decade the utility industry has typically under-earned its allowed ROE by approximately 75 bps. Even more concerning, not only have realized industry ROEs compressed since 2004 to a median of 9.6% as allowed ROEs have ratcheted down, but the under-earning

Ultimately, such an equivalency or narrow margin between the industry’s cost of equity and its allowed/achievable ROEs would have significant and potentially negative implications for the power industry’s ability to create shareholder value. It is one thing for a utility to under-earn its allowed ROE, but another to under-earn its cost of equity. In the former circumstance, a utility is just failing to maximize return and shareholder value potential; in the latter, capital investment destroys shareholder value.

Finally, the value risk incumbent in the industry’s exposure to potentially higher costs of equity with a reduced margin of error relative to allowed ROE is compounded by its projected robust capital investment. First, greater amounts of capital would likely be put at risk during a period of potential under-earning. Second, evidence suggests that utilities under-earn their allowed ROEs by a greater margin during periods of significant capital investment, as reflected in return metrics post-2004. A principal reason for increased

under-earning during capital-intensive periods may be that as a utility increases and sustains the scale of its capital investment above a certain level relative to its rate base and capitalization, it becomes more challenging to efficiently invest and earn a full and timely return on that capital.

EXECUTIVE TAKEAWAY

Should the risk-free rate increase to 5%–6%, the industry’s cost of equity would likely outstrip the historical **margin of error** of its allowed ROEs, making it challenging if not impossible for utilities to earn an adequate return on invested capital once regulatory lag is considered. This under-earning risk is compounded by the industry’s significant projected capital investment in the coming years.

9. A path to shareholder value creation

It has been challenging to create shareholder value in the utility industry. How do the findings of this report help senior management make decisions that are most likely to create value? We summarize the key challenges for the industry in Figure 14 and pair them with an action plan based on the insights of this report.

Capital allocation and rates of return: Utilities plan to invest hundreds of billions of dollars in utility infrastructure over the next few years. These are long-term decisions the Board and management should consider carefully. They should be particularly concerned about the associated financing risks, the potential impact on balance-sheet integrity and the effect of long-term anemic growth on the projects' potential returns. Most importantly, they should use a disciplined approach to capital allocation. The industry's current cost of capital may be artificially low. An increase in Treasury rates of only 100 bps could potentially undermine the economic proposition of many investment opportunities. Do not accept marginal projects that would not clear required return "hurdle rates" should Treasury rates increase 50 or 100 bps.

Capital structure: Bridging an ROIC deficit through greater leverage is not advisable. As capital markets continue to recover and the all-in cost of debt reaches historical lows, firms may be tempted to neglect balance sheet strength to pursue the lowest cost of capital. With the spot cost of capital at its lowest around a BBB rating, some regulators aspiring to a low short-term cost of capital may also favor BBB balance sheets. In practice, given the importance of capital markets access, the lesser predictability of the non-investment-grade market and the need for downside protection, we continue to believe that a stronger balance sheet creates more value and hence lowers the long-term cost of capital.

Figure 14

Senior decision-maker roadmap to creating value in the utility sector	
Key challenge	Action plan
<ul style="list-style-type: none"> • Equity valuation • Industry risk factors threaten future equity valuations 	<ul style="list-style-type: none"> • Keep equity downside potential in mind when considering M&A and equity financing decisions
<ul style="list-style-type: none"> • Capital allocation • A reputation for poor capex decisions will hurt equity values, leading to a higher cost of equity over time 	<ul style="list-style-type: none"> • Carefully evaluate capex plans – be prepared to cut capex • Use a disciplined approach to divest/terminate low/under-earning investment opportunities
<ul style="list-style-type: none"> • Rates of return • Low current Treasury rate level keeps cost of capital low 	<ul style="list-style-type: none"> • Do not accept marginal long-term projects based on today's snapshot cost of capital • Shareholders cannot subsidize ratepayers
<ul style="list-style-type: none"> • Regulatory proceedings • Weak economic environment leading to less supportive environment 	<ul style="list-style-type: none"> • Education of regulatory bodies regarding challenges of the new environment is even more critical
<ul style="list-style-type: none"> • Capital structure • Reopened debt markets take pressure off desire to achieve a fortress balance sheet 	<ul style="list-style-type: none"> • Do not lever capital structure to "bridge" below-hurdle-rate investment to better return environment • Cost of capital minimization is not consonant with optimal capital structure considerations – remember 2008–2009
<ul style="list-style-type: none"> • Business mix • Equity investors do not ascribe full value to the hybrid model 	<ul style="list-style-type: none"> • Spend as much time evaluating the portfolio of existing businesses as evaluating new investments • Use a disciplined approach to evaluating separation alternatives
<ul style="list-style-type: none"> • Importance of government influence • Government decisions increasingly influential – corporate and dividend taxes, cap-and-trade 	<ul style="list-style-type: none"> • Tax and regulatory uncertainty add another unknown to investment plans • Evaluate all new decisions with meaningful "what if" scenarios
Source: J.P. Morgan	

Equity valuation: Industry risk factors have abated since the peak of the crisis but still remain. While some of these risk factors may be priced into equity values, any adverse news relating to these factors may further negatively affect valuation. Decision-makers should consider this equity downside risk when planning for equity financings or in evaluating M&A transactions.

Regulatory proceedings: The economy is still fragile: Unemployment levels are still close to historical highs, and the housing market is still heavily subsidized in part through the low rate environment. As a result, the regulatory environment is likely to remain uncertain and challenging, especially in states where the impact of the crisis has been most severe. Nonetheless, utilities need to continue to try to educate regulators about the true cost of capital risks the industry is confronting, particularly in a rising-interest-rate environment. The industry should also discuss the consequences for its investment in infrastructure if it is not able to garner returns that ensure it can earn its cost of capital. While cost of capital trackers may be challenging to implement, solutions of this type should be raised with regulators. In the absence of getting approval for proper regulatory relief, utilities must continue to rigorously evaluate their capital investment projects and aggressively pare them back should the industry's cost of capital begin to outstrip their ability to earn an adequate regulated return. Shareholders cannot be expected to subsidize ratepayers (in the long run).

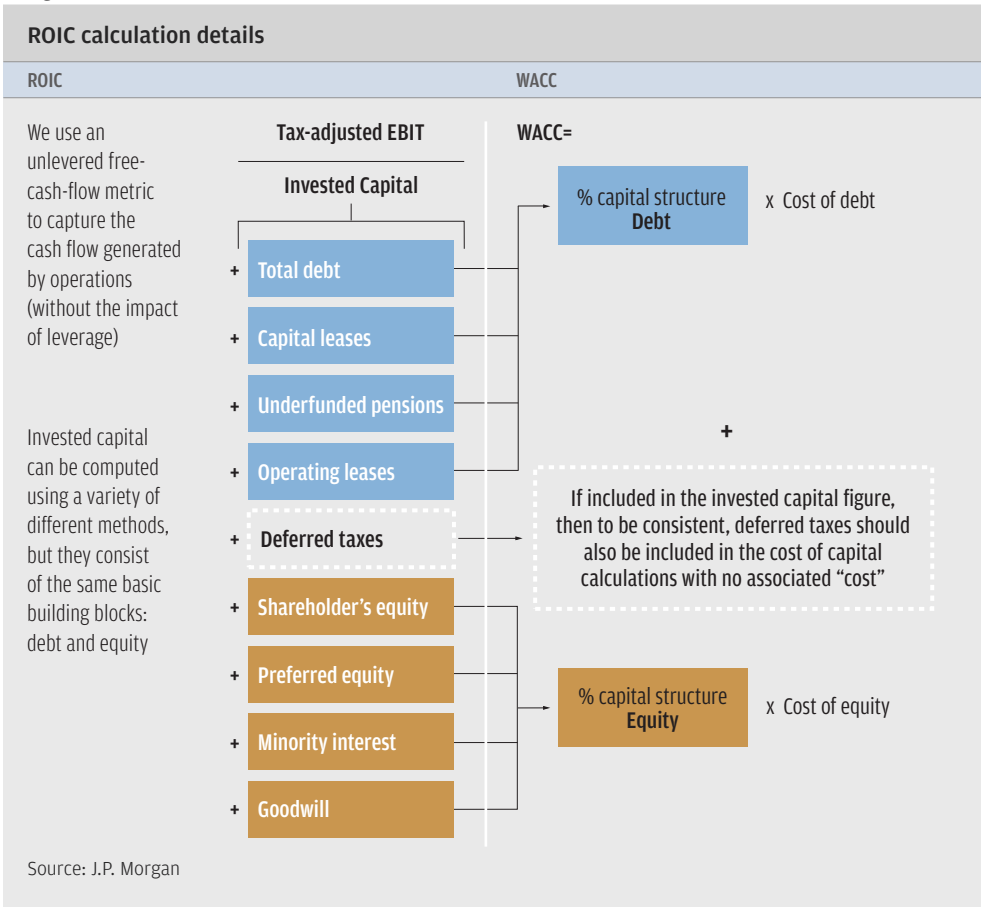
Business mix: Our results show how difficult it has been to create value in both the regulated and unregulated sides of the utilities business. The hybrid sector achieved higher ROICs during the peak of the recent commodity cycle. Over the past five years, however, it has generated shareholder returns that are equivalent to the regulated sector. Further, the equity markets appear to discount the value of merchant generation businesses, while the betas and equity risk premiums attributed to hybrid utilities are higher and increasingly differentiated relative to the regulated sector. It is of paramount importance to use a disciplined approach to evaluate the entire portfolio. In some cases divesting may create more shareholder value than keeping or adding merchant assets.

Government influence: Apart from utility-specific regulations, the influence of government decisions on the economy has grown. How will today's government deficit influence future Treasury rates, environmental regulation, corporate taxes and credits, and taxes on dividends? Understanding the interaction between changes in these variables and the desirability of new capex plans will be key to creating value in the utility industry.

10. Appendix

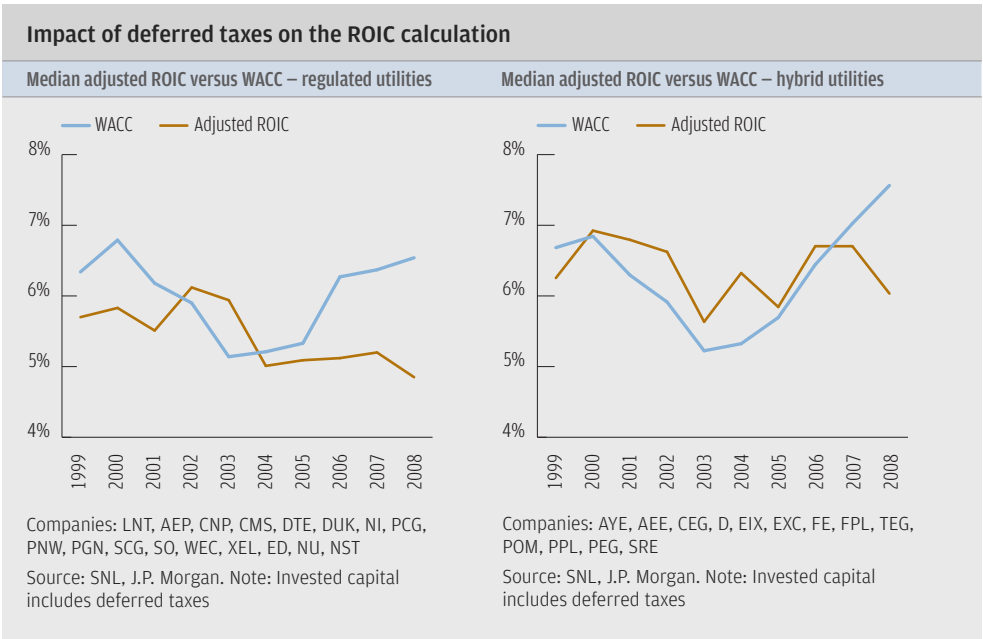
While return on invested capital and cost of capital present a simple approach to quantifying the generation of economic value, the straightforward nature of the computation belies subtleties. Assumptions in both the ROIC and WACC calculations can easily drive widely varying results. In Figure 15 we outline the details of the ROIC and WACC calculations used in our analysis. Specifically, we use tax-adjusted EBIT as a proxy for unlevered free cash flow, and a comprehensive definition of invested capital that includes total debt, capital and operating leases, underfunded pensions, shareholders' and preferred equity, minority interest and goodwill. The cost of capital calculation mirrors the definition of invested capital, with each component assigned a respective cost based on its weight in the capital structure (with the exception that the cost of capital calculation uses a market value of equity in lieu of book shareholders' equity).

Figure 15



While adjustments to the ROIC or WACC calculations are often justifiable, care should be taken to ensure the calculations are being made on a comparable basis. A common pitfall is to include deferred taxes in the invested capital figure. However, without appropriately adjusting the cost of capital figure, the results of the analysis may be skewed. Figure 16 highlights the perils of such an approach: By including deferred taxes (a significant amount for many utility firms) in the invested capital figure and thereby lowering the ROIC figure, the analysis indicates that many utility firms have not generated any shareholder value over the last 10 years – an unwelcome proposition for any utility investor or executive. To properly account for the addition of deferred taxes in the ROIC figure, the WACC figure must also be adjusted with the portion of deferred taxes in the capital structure being included at the appropriate cost. Given that deferred taxes could be viewed as an interest-free loan from the government (and therefore zero-cost), incorporating the zero-cost deferred taxes into the cost of capital calculation would lower the overall WACC, thereby ensuring a consistent approach and an improved history of value creation.

Figure 16



Because most firms do not include deferred taxes in their WACC calculations, and because the rating agencies do not include deferred taxes in their definition of total adjusted debt, we have elected to show results excluding deferred taxes in this report.

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