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Conservative capital structures: Reclaiming the throne



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1. A time to reassess capital structure

Should senior decision-makers question their approach to capital structure in light of the severe ongoing capital-market disruptions? An ideal capital structure should yield a low cost of capital, offer protection against downside scenarios, and provide sufficient financial flexibility to exploit strategic opportunities. Since the summer of 2007, and at an accelerating pace since September 2008, fewer firms have been able to meet this paradigm, as many of the factors driving capital-structure decisions have changed dramatically. With debt capital markets grinding nearly to a halt, debt spreads and volatility levels at historical highs, and equity valuations suffering considerably, we recommend a thorough re-evaluation of capital-structure objectives.

In a recent report, we explained how record-high volatility has affected many corporate-finance choices, concluding that more conservative capital structures are more attractive when volatility is high.¹ In a high-volatility environment, downside shocks can occur more frequently and with greater severity, and profitable investment opportunities may become less predictable, but more valuable. Thus, capital-structure choices become strategically more important. This report provides a more detailed analysis of the drivers of capital-structure decisions in today's environment.

Lessons learned:

- (1) Generally, firms' *lowest cost of capital is now reached at credit ratings that are about four notches higher than they were 18 months ago* (for example, A instead of BBB-).² This trend is driven by a widening gap between the availability and costs of debt for higher vs. lower-rated firms.
- (2) The *cost of capital has increased more significantly for firms with non-investment-grade ratings*, and a significant portion of their equity devaluation can be attributed to a higher cost of capital.
- (3) *Rating agencies seem to be embracing tougher standards*. Hence, firms may need to adopt more conservative capital structures just to maintain their current ratings.
- (4) At current volatility levels, firms *need to significantly reduce their leverage* to maintain probabilities of distress similar to pre-crisis levels. Hence, more conservative capital structures are required to weather downside scenarios.
- (5) Higher volatility also suggests that firms should significantly *extend their average debt maturities* to preserve flexibility and value.
- (6) The high volatility of interest rates and their low absolute levels need to be weighed against the significance of near-term savings and the high correlation between earnings and interest rates *to arrive at target floating-rate exposure*.

EXECUTIVE TAKEAWAY

The current environment suggests that, on average, less leverage and longer debt maturities enhance shareholder value. Today's environment is a stark reminder that capital structures are strategic and should not be designed to exploit short-term opportunities. Whether and how firms should calibrate their capital structures to this new environment depends on their views of the length and depth of the current economic turmoil.

¹ "Six sigma: CFO insights to create value in a volatile environment" (J.P. Morgan, November 2008)

² Credit ratings are stated according to the S&P methodology. All the results and insights are similar using the Moody's or Fitch methodologies.

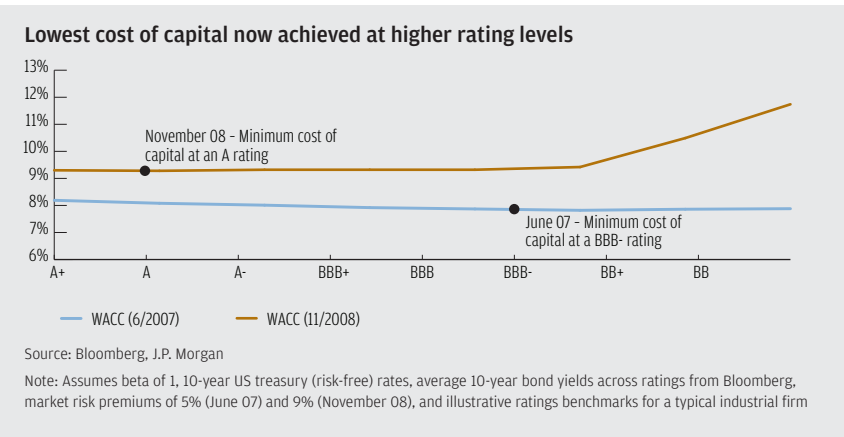
2. WACC analysis suggests a more conservative optimal capital structure

Firms tend to consider a combination of tools and insights to identify their optimal capital structure. Many capital-structure decisions are based on inertia or preference for the status quo (i.e., “is there a reason to change the capital structure we have had for so many years?”) as well as on practical aspects (e.g., small firms may never achieve an investment-grade rating even if they utilize no leverage). To better understand how capital-market conditions may have altered the capital-structure decision, we first look at an analytical tool with which most financial decision-makers are familiar: the weighted-average cost of capital (WACC) curve.

The WACC curve: The WACC curve, which compares the cost of capital across different capital structures, has been popularized over the last few decades through finance textbooks. The overall cost of capital is the weighted average of the cost of equity and debt based on the proportions of equity and debt (and hybrid securities) in the capital structure. WACC also accounts for the tax-deductibility of coupon payments on debt. Since credit ratings ultimately drive access to debt markets, and because leverage levels corresponding to a particular credit quality may vary across industries as well as the borrower’s size and scale, we prefer to show the WACC curve benchmarked against ratings rather than leverage. In many cases, however, we recommend a more conservative capital structure than that which is suggested by the WACC curve, to account for the benefits of financial flexibility afforded at higher ratings.

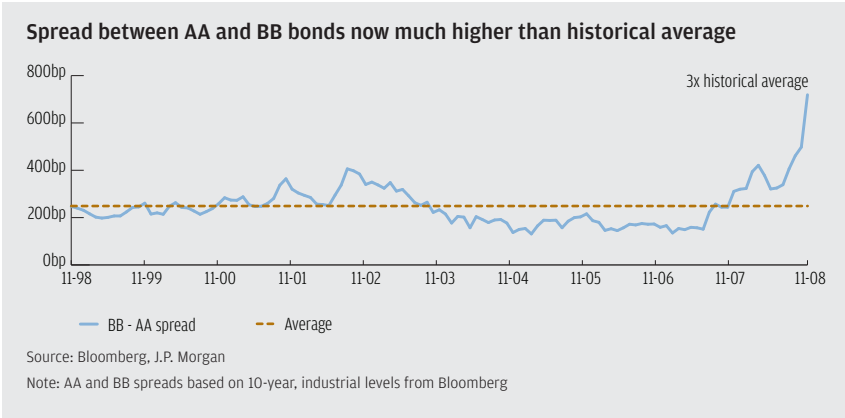
Has the WACC curve changed over the last 18 months? In Figure 1, we show how a typical WACC curve has changed since the summer of 2007. At that time, a typical large-cap, non-financial firm with a beta around 1 would have achieved its lowest cost of capital at a capital structure commensurate with a BBB- rating. Its minimum WACC would have been just under 8% (based on our methodology to estimate the cost of equity), and the flatness of the curve at the time suggested that the cost of capital differed only slightly across the credit spectrum. Now, however, the current WACC curve suggests that the cost of capital is minimized at capital structures analogous to an A rating. Moreover, the curve has steepened markedly in high-yield territory, with BB-rated firms exhibiting WACC levels several percentage points higher than their A- or BBB-rated counterparts.

Figure 1



What is driving this shift in the WACC curve? Given the breadth of recent capital-market disruptions, many of the ingredients of the WACC curve have changed. The risk-free (U.S. treasury) rate, the anchor for cost-of-debt and cost-of-equity calculations, has fallen significantly. Counteracting this effect, the equity market risk premium has increased appreciably. But the most profound impact on the changing shape of the WACC curve has been the significantly larger gap for the cost of debt-financing between highly rated firms and non-investment-grade companies. The graph in Figure 2 highlights this trend. Since 1998, the difference between the cost of debt for AA and BB-rated non-financial firms has typically oscillated between 2% and 3%, and from 2004 through early 2007, this spread fell below 2%. This small differential between AA and BB ratings coincided—and indeed in part motivated—some corporate leverage decisions over that period. Since the summer of 2007, however, this spread has increased significantly to reach a high of more than 7% recently. It is this trend that has caused the WACC curve to steepen so dramatically.

Figure 2

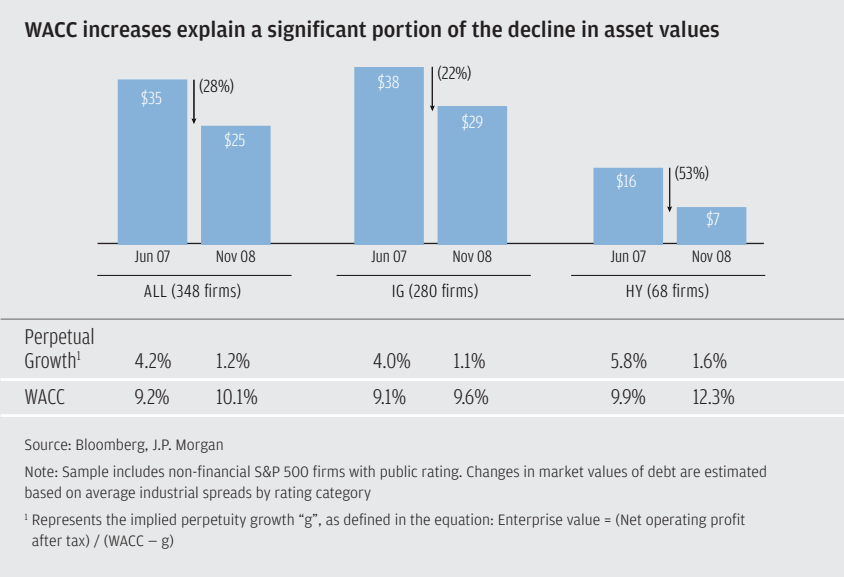


Are increases in cost of capital connected to the depreciation in asset values that we have observed? To value a firm, investors discount the firm's future cash flows at its cost of capital. As expected, when the cost of capital increases, valuations decrease. Figure 3 shows that, for a typical non-financial, investment-grade firm in the S&P 500, the average WACC has increased from 9% to 10% since June 2007. While the increase in the cost of capital may explain some of the 22% decline in firm value, the new valuation level also implies a decline in the annual expected growth rate from 4% to 1%. We apply the same method to high-yield firms and find that their WACC has increased from 10% to 12% in the past 18 months. Coupled with a decline in implied growth from 6% to 2%, this translates to a 53% decrease in firm value (44% in debt value and 58% in equity value). The magnitude of the declines for high-yield firm valuations is greater because their cost of capital has increased more significantly while their growth expectations have decreased more substantially.

EXECUTIVE TAKEAWAY

The cost of capital has increased since the beginning of the credit crisis for most firms. Yet, more striking is the distribution of the cost increases across the ratings scale. Whereas firms appeared to minimize their cost of capital in the BBB- range for most of the last 10 years, lower-rated firms now face a severe cost disadvantage and limited market access relative to their highly rated counterparts. While the WACC curve is just one tool for analyzing the capital structure, it suggests a more conservative leverage which decision-makers should consider when determining their long-term capital-structure objectives.

Figure 3



3. Rating agencies are seemingly becoming tougher

The importance of credit ratings: Our capital-structure discussion thus far has focused on ratings categories instead of pure leverage metrics. Most decision-makers view leverage metrics as guideposts for reaching a desirable rating target and, ultimately, ratings determine capital access more than the specific leverage metrics. While there has been a lively debate over the role of rating agencies since the subprime crisis started, ratings have actually become more important for corporate borrowers over the last few months. The distinctions between A and BBB long-term ratings, and between BBB and high-yield long-term ratings, have rarely been as important from a financing perspective as they are today. Similarly, the difference between Tier-1 and Tier-2 short-term ratings also has critical liquidity implications.

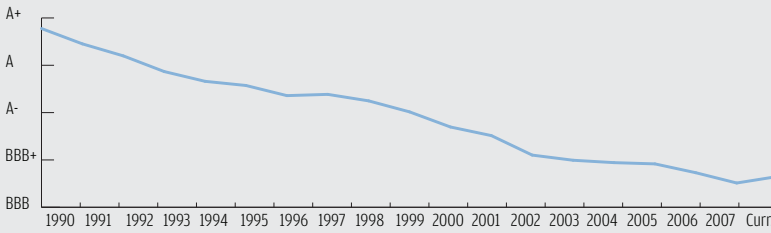
Have rating agencies become more conservative? In Figure 4, we show the average rating of non-financial/non-utility S&P 500 firms, which has dropped from A+ to BBB+/BBB since 1990. Have firms levered up because they deemed a BBB rating to be part of their

ideal capital structure? Or have the rating agencies become more conservative over time? The two credit metrics in Figure 5 argue the latter point. While the average rating has decreased over time, leverage and cash flow-to-debt measures have remained steady or even improved. Measures of liquidity and profitability have also strengthened since 1990. Together, these figures suggest that rating agencies have become more conservative.

EXECUTIVE TAKEAWAY

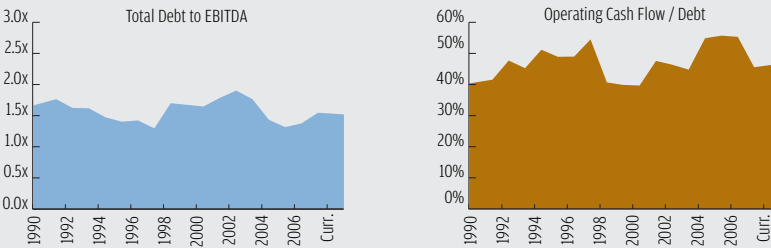
Rating agencies appear to have become more conservative over time, and this bias is likely to persist in light of the economic and capital market uncertainty. As a result, firms may have to improve credit metrics merely to maintain their current ratings. In an environment where access to capital is challenging, rating agencies are also increasingly focused on liquidity.

Figure 4

Average rating of S&P 500 firms declining from A+ to BBB+/BBB

Source: Factset, J.P.Morgan; excludes Financial and Utility companies. Based on an average rating of S&P 500 companies

Figure 5

Credit metrics have either stayed flat or improved, despite the lower ratings

Source: Bloomberg, Factset, J.P. Morgan

Note: Based on median of all S&P 500 companies, excluding Financial and Utility companies

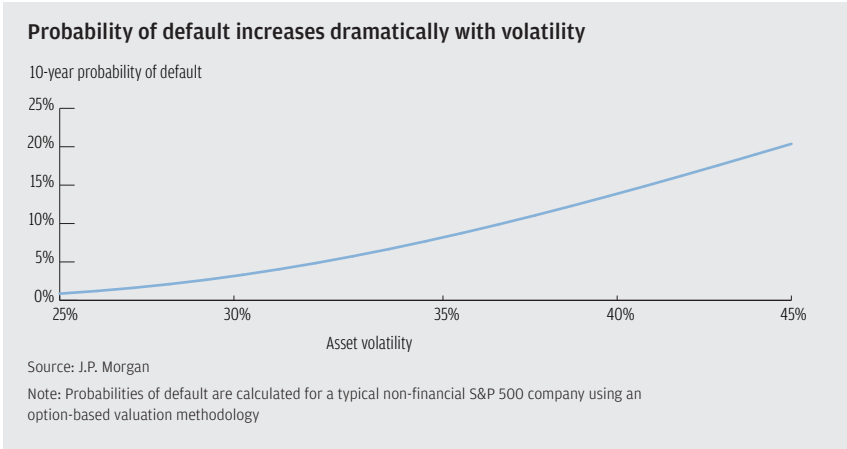
4. Higher cash-flow volatility suggests de-levering to reduce downside risk

Record-high volatility: A unique aspect of the present crisis is that many market volatility metrics (i.e., equity, credit, currency, interest rates, and commodities) have reached peaks *simultaneously*.³ Financial-market volatilities reflect significant uncertainty in the economy, and firms' cash-flow volatilities are unlikely to be immune to this trend. How does volatility affect the capital-structure choice? Intuitively, we know that less levered balance sheets and stronger credit ratings provide greater downside protection and financial flexibility. So while higher volatility may increase the frequency and magnitude of downside shocks, firms can protect against these effects by reducing their financial leverage.

Relation between volatility and default probabilities: Figure 6 shows how a firm's default probability increases with volatility. In this illustrative example, we use the average leverage levels of all non-financial S&P 500 firms and assume an average debt maturity of 10 years. The low-volatility environment (base case) assumes an asset volatility of 30%. At this volatility level, we estimate the typical S&P 500 firm to have a 10-year default probability between 3% and 4%. If asset volatility were to increase to 40%, however, the expected 10-year probability of default would increase to about 14%. Thus, as volatility increases, firms become riskier, and this effect is compounded with higher leverage.

³ "Six sigma: CFO insights to create value in a volatile environment" (J.P. Morgan, November 2008)

Figure 6



EXECUTIVE TAKEAWAY

Financial-market volatilities have reached record highs over the last few months. Firms can offset the impact of higher volatilities on their risk profile by de-levering. Overall, higher volatilities call for more conservative capital structures.

Neutralizing the impact of higher volatility:

Firms can mitigate the impact of higher volatility by reducing leverage. In our illustrative example, the firm in a higher-volatility environment can reduce its probability of default back to 3%-4% by cutting its face value of debt by about 60%. Firms can also try to neutralize the impact of higher volatility through various hedging strategies. The choice between hedging and/or de-levering would be partly determined

by the transactions costs associated with each alternative, as well as the effectiveness of any hedging strategies.

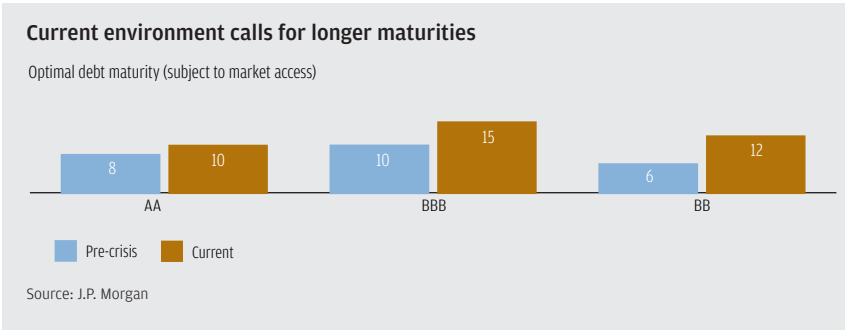
5. Longer maturities mitigate exposure to unforeseen shocks

Debt maturities are critical factors in assessing liquidity and refinancing risk:

Handling the debt-maturity ladder is an important element of liquidity and capital-structure management. The poor performance of many financial institutions over the past year can be directly attributed to an inherent mismatch between assets (long-dated) and liabilities (typically short-dated). For non-financial firms, assets are often not only long-dated, but also illiquid. The optimal financing of these assets is a function of the risk embedded in the cash flows generated by the assets. The optimal maturity of a debt portfolio is directly related to the volatility of the cash flows—riskier cash flows should be financed with longer-dated debt. Typically, longer-dated debt is more expensive but improves the overall risk profile of a firm by reducing refinancing risk and its risky capital. We separate between firms with a strong capital structure and highly levered firms.

Firms with fortress balance sheets: Figure 7 below shows an illustrative analysis to highlight the impact of increasing cash-flow volatility on the optimal debt maturity for firms across different ratings categories. If a typical AA-rated firm targeted an average maturity of eight years to withstand a 95% downside cash-flow scenario prior to the current crisis, it may now need to target an average maturity of 10 years to achieve the same degree of conservatism in the current, more volatile environment. The impact of higher volatility on optimal debt maturity for lower-rated firms is even stronger, suggesting that most firms could benefit from lengthening the average maturity of its debt portfolio, subject to market access constraints.

Figure 7



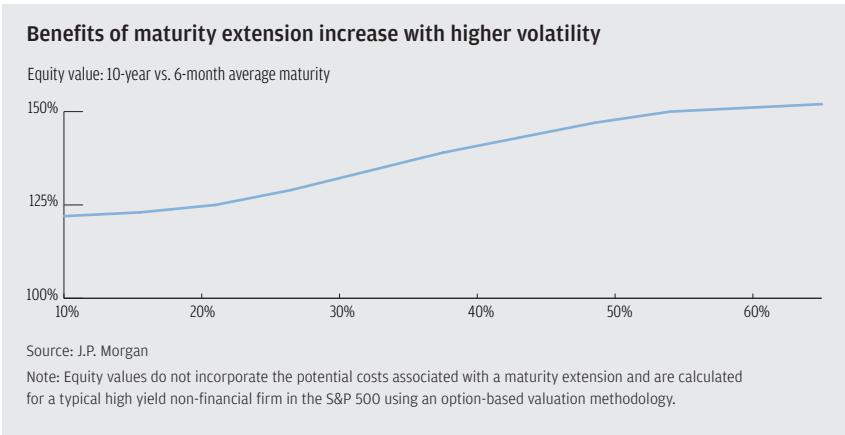
Highly levered firms: Firms with significant upcoming maturities can alleviate some of the liquidity pressure and enhance their enterprise value by extending debt maturities.

Figure 8 shows the increase in equity value for a typical high-yield firm from extending the average debt maturity from six months to 10 years. In this example, a maturity extension increases the equity value by 34% when the asset volatility is 30%, but it increases the equity value by 43% when asset volatility is 40%. Hence, in a more volatile environment, equity holders could offer a higher premium to debt holders (in the form of higher coupons, cash, warrants, stocks, etc.) to attain their consent for a maturity extension.

EXECUTIVE TAKEAWAY

Matching the duration of assets and liabilities as closely as possible should be a key objective. In the current environment, where liquidity has dried up and cash flows can be expected to be more volatile, companies should consider targeting a longer average debt maturity.

Figure 8



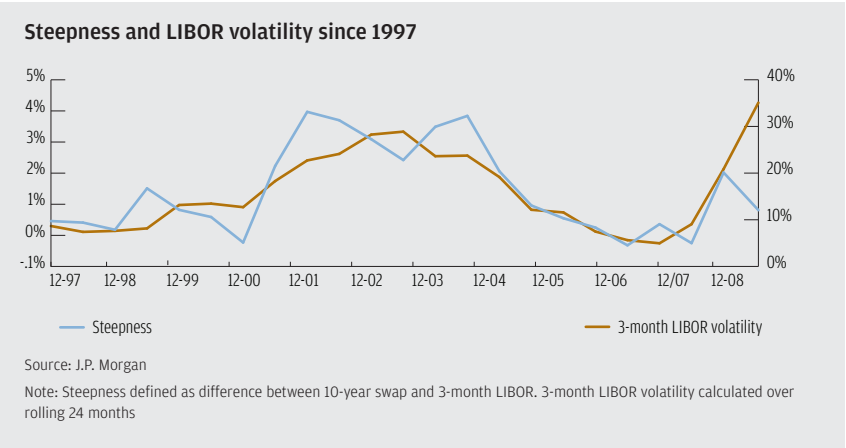
6. Optimal fix-float mix remains function of economic and firm-specific factors

Basic approach: Recent market events have put a spotlight on risk management as a strategic corporate-finance function. An important element of corporate risk management is the choice between fixed versus floating-rate debt in the capital structure. Over long periods, floating-rate debt has been cheaper but also more volatile than fixed-rate debt. Identifying the right mix is likely to positively impact earnings and potentially reduce the risk to earnings. To identify the optimal floating debt range, firms focus on their financial

metrics (e.g., cash balances, volatility and earnings correlation with rates) and prevailing market conditions (steepness of yield curve and volatility of rates). In today’s environment, many firms are revisiting their target mix and positioning themselves for what could be a long recovery process.

Factors reducing the attractiveness of floating-rate financing: In Figure 9 we show two of the key variables that influence a firm’s target mix—the steepness of the yield curve (e.g., the spread between 10-year swap rate and 3-month LIBOR) and the volatility of the short rate (e.g., 3-month LIBOR). Historically, a steep yield curve has been accompanied by high short-rate volatility. In recent months, however, the short-rate has been very volatile, while the yield curve has been relatively flat. In addition, absolute levels of nominal long-term rates are at or close to historic lows.

Figure 9



Factors increasing the attractiveness of floating-rate financing: Along with the market variables described above, decision-makers should also consider a variety of other factors before setting their target mix. For example, the near-term value of swapping debt to floating, to offset pressure on cash flows, is high for most firms given today’s premium on liquidity.

In addition, increased earnings volatility attenuates the impact of volatile rates and also increases the bias toward floating-rate debt. Further increasing the strategic bias towards floating-rate debt is the fact that nearly all firms exhibit some measure of cyclical in the current economic environment. Finally, firms with a sizable defined-benefit pension exposure may also elect to increase their floating exposure, as it could provide an effective hedge to long-dated pension liabilities. We summarize the key factors that influence a company’s floating-rate decision in Figure 10 below.

EXECUTIVE TAKEAWAY

The high volatility and low absolute levels of rates in the current market environment would typically provide a strong incentive to lock in fixed financing rates. But additional factors, such as the significance of near-term savings and any potential asset-liability mismatch in pension plans, are critical considerations in favor of maintaining some floating-rate exposure in a firm’s capital structure.

Figure 10

Factors impacting the bias for floating-rate exposure	
Market conditions	<ul style="list-style-type: none"> ■ Recessionary environment, with potentially long recovery process ■ High interest rate volatilities, flat yield curve, low absolute levels of nominal rates
Earnings volatility & cyclicality	<ul style="list-style-type: none"> ■ Increased earnings volatility decreases impact of additional floating rate debt ■ All companies behaving like cyclicals – value of any interest savings in current environment can be significant
Pensions	<ul style="list-style-type: none"> ■ Under-funding likely to go up, increasing portion of fixed rate debt ■ Long-dated liabilities offset only partially by some shorter dated fixed income assets
Source: J.P. Morgan	

7. It is not too late to adjust your capital structure

How should firms respond? Several factors drive how firms should respond to this new capital-structure environment: (1) their current capitalization, (2) the strategic value of financial flexibility, (3) their view on the duration and depth of current capital-market conditions, (4) the costs associated with adjusting their capital structures, and (5) changes in their exposure to shocks (e.g., credit, currency, pensions, etc.).

Firms with the strongest capital structures: Large, best-in-class, global leaders have typically maintained fortress balance sheets and very strong credit ratings. Though they are feeling the impact of the current crisis in terms of lower equity values, higher cost of debt, and challenged access to capital, these types of firms face no imminent pressure to make major capital-structure changes. Issues they should consider include: (1) the impact of a one-notch downgrade, (2) potential changes in rating-agency parameters, (3) reducing the reliance on the commercial-paper market and extending maturities, and (4) reassessing excess liquidity in light of trapped offshore cash, changes in potential liquidity shocks, shareholder-distribution commitments, reduced and more expensive bank-provided liquidity, and expanded M&A opportunities.

Firms with weak investment-grade capital structures: Firms in this rating category should be more aggressive about reassessing their capital-structure targets and objectives. This assessment includes the issues highlighted for firms with the strongest capital structures, but these firms should focus on how costly a downgrade to non-investment-grade would be and whether they believe strategic opportunities may arise that require investment-grade market access. If they believe the current strained market conditions are likely to persist or even deteriorate over the next 18-24 months, then they should consider major capital-structure surgery to de-risk the balance sheet. This includes raising precautionary liquidity (potentially through equity to reduce pressure on ratings), extending maturities, and hedging to avoid potential downside shocks.

Firms under imminent capital-structure pressure: Most firms in this category are non-investment-grade with near-term maturities and/or covenants that are under pressure. Because access to capital is limited in these ratings categories, firms should explore all possible sources of capital. For some of these firms, the downside of not resolving balance-sheet issues is large enough that it has become the primary concern of key decision-makers and investors. The main tools to strengthen their balance sheets include:

- (1) **Asset sales:** Selling assets to de-lever is a well-established path toward strengthening the balance sheet. In this market environment, this approach is challenging as there are fewer bidders entering auctions. With low asset valuations today, credit quality may actually decline following asset sales (higher EBITDA leverage and smaller scale).
- (2) **Debt restructuring:** This category includes a variety of alternatives from the maturity extension to debt-for-debt and debt-for-equity exchanges.
- (3) **Equity issuance:** Most decision-makers are disinclined to sell equity at levels that are much lower than they were a few months ago. Yet, in many situations, issuing equity to de-lever (with focus on liquidity and near-term maturities) is the most efficient approach. Fortunately, today's markets still offer a variety of equity-issuance mechanisms including straight common stock offering, rights issues, debt-for-equity exchanges, and PIPE (private investment in public equity) transactions.
- (4) **Scaling back capital expenditures:** Tends to have lower transaction costs in the near term but may be associated with reduced value creation in the long term.

EXECUTIVE TAKEAWAY

We recommend that all firms reassess their capital-structure objectives in the context of the new environment. The action plan should, however, depend on the firm's current capital structure and on its outlook on the future. We suggest a more conservative capital structure for all firms except those few that are already best-positioned in this environment, and we urge companies to engage in finding cost-efficient ways to de-risk their balance sheet.