

A Great Deleveraging: Why It Is Happening and What It Means for Equities

U.S. Equity Strategy

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Companies in the S&P 500 have reduced leverage. Initially a reaction to the credit crisis, deleveraging has persisted, becoming a secular trend. Interestingly, we find leverage has gone down because of lower interest rates. Less leverage has implications for stocks because it constrains return on equity.

A great deleveraging. Leverage, as measured by debt in relation to book equity, has fallen dramatically and now stands at the lowest level since the late 1980s. Leverage has declined seven years in a row, which is unique. Based on our 42 years of data, leverage had never before fallen more than three years in a row.

It is not just financials. While the financials sector is the most significant cause of deleveraging, the non-financial sector has also participated. In both cases the leverage ratio has declined primarily because there is more equity.

The impetus for deleveraging: it is all about taxes. The trend toward lower leverage is perplexing in light of the direction of interest rates over the same period. With corporate yields near historical lows, the question is not why corporates are using slightly less leverage, but why corporates are not re-leveraging heavily to take advantage of cheap financing. The answer lies in taxes. As interest rates fall, the inherent tax advantage associated with debt falls as well. This leads to the seemingly paradoxical conclusion that leverage levels should actually fall as yields decline.

Implications for stocks. Fundamentally, companies in the S&P 500 are using more equity to run their businesses than they used to. The most striking illustration of this can be seen in the sales-to-equity ratio. Twenty years ago S&P 500 companies generated \$2.70 of sales for every dollar of equity. Today, that has fallen to just \$1.60.

\$1 trillion buyback? Companies could lever up again. If this happened, a lot of capital could be unlocked. In fact, we calculate that non-financial companies in the S&P 500 have \$880bn of excess equity that could be used for activities such as share repurchases. But we do not expect this to happen. Rather, we believe the secular trend of lower leverage – and suppressed return on equity – continues.

The market rewards leverage. Our factor analysis shows that non-financial companies with high debt-to-equity have consistently outperformed over the past 15 years. In addition, companies that are increasing their debt-to-equity ratio have outperformed. In other words, the market rewards high and increasing leverage.

A list of companies with high and increasing leverage. Considering the results of our factor analysis, we present a list of companies that have a high debt-to-equity ratio and elevated growth in the debt-to-equity ratio. These include AbbVie, Colgate-Palmolive, IBM, Sherwin-Williams, and Starwood.

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Equity Research: Our Thought Process on Leverage

FIGURE 1
Deleveraging

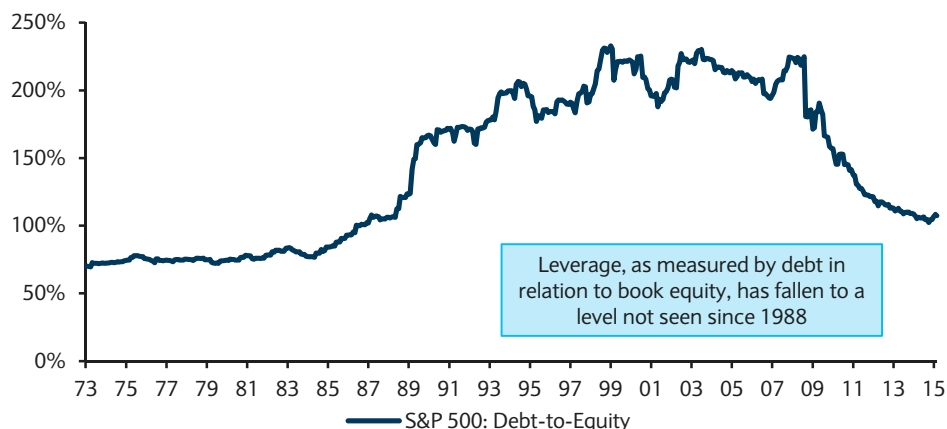


Source: Barclays Research

A Great Deleveraging

Leverage, as measured by debt in relation to book equity, has fallen dramatically and now stands at the lowest level since the late 1980s. After increasing steadily from the mid-1980s until 2007, leverage has now declined seven years in a row. This is a unique occurrence. Based on our 42 years of data, leverage had never before fallen more than three years in a row, let alone seven. What began as a reaction to the credit crisis has turned into a secular trend, with implications for stock prices.

FIGURE 2

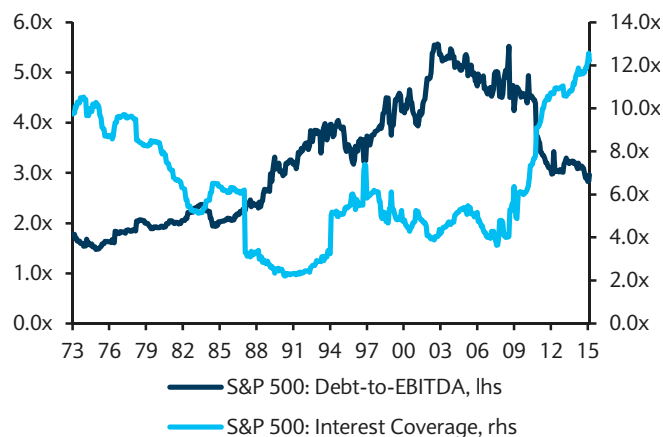
The S&P 500 Did Not Re-lever after the Financial Crisis Subsided

Source: Compustat, Barclays Research

Other popular indicators of leverage, including debt-to-EBITDA, the interest coverage ratio, and debt-to-market capitalization, also indicate a great deleveraging. Debt-to-EBITDA for the S&P 500 was more than 5x from 2002 to 2007, but it is now 3x. Interest coverage, an inverse measure of leverage, has improved even more dramatically, increasing from less than 4x in 2007 to more than 12x. Debt-to-market capitalization has continued to decline since 2008, largely due to the rise in stock prices, and net of cash it is at the lowest point of the last 35 years.

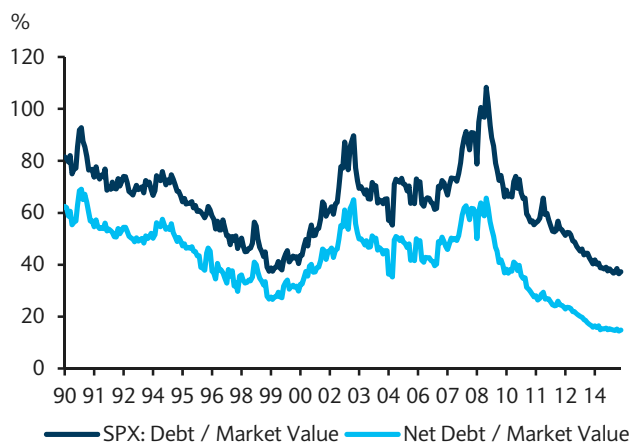
The most significant cause of the deleveraging experienced by the S&P 500 is the reduction in leverage utilized by the financials sector. Banks have been forced to hold substantially more capital in relation to assets to ensure they can withstand financial stress. In reaction, banks have raised capital through equity issuance and retained earnings, while at the same time shrinking balance sheets and wholesale borrowings. In fact, the banks in the S&P 500 have increased shareholders' equity from \$566bn in 2007 to \$1.1trn in 2014. Overall, the debt-to-equity ratio of the financials sector has declined from 571% in August 2008 to 161% in March 2015. Equity in relation to assets, which is a more conventional measure of bank leverage, has increased from 9% to almost 11% over the past five years.

FIGURE 3

Debt-to-EBITDA and Interest Coverage Also Show a Large Deleveraging...

Source: Compustat, Barclays Research

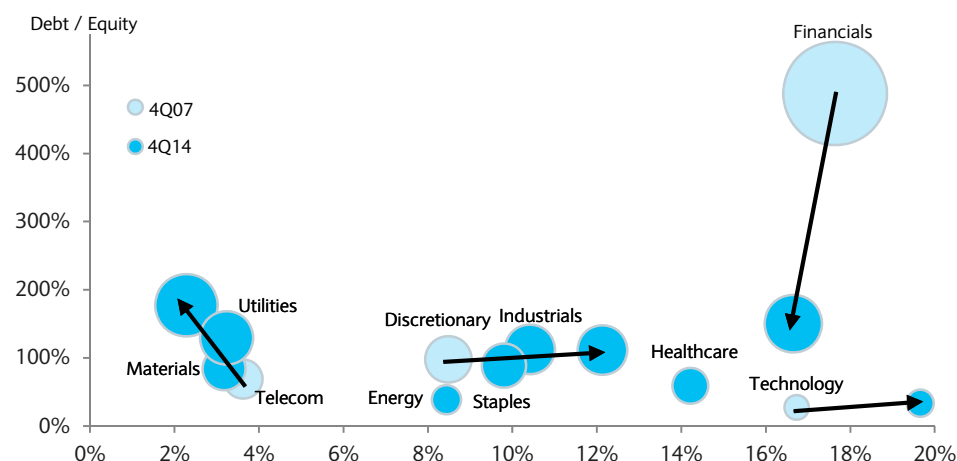
FIGURE 4

...As Does Debt-to-Market Capitalization

Source: Barclays Research

Another cause of the reduction in leverage is the shift in composition of the S&P 500. Specifically, sectors with low leverage now comprise a greater portion of the index. The technology sector, which is the largest sector by market capitalization, has the lowest leverage, at just 32%. Back in 2007, the financials sector was larger than the technology sector. In Figure 5 we plot the debt-to-equity ratio and weighting within the S&P 500 of selected sectors for 4Q14 and 4Q07. Large changes are signaled by arrows. As shown, the financials, technology, consumer discretionary, and telecom sectors have experienced large changes in either their relative size or leverage profile.

FIGURE 5
Share of S&P 500 Market Capitalization Plotted against Debt-to-Equity Ratio



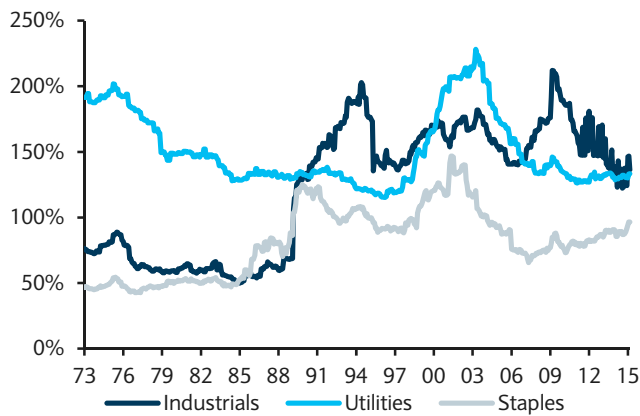
Source: FactSet, Barclays Research

Still, the financials sector and index changes are not the whole story. Some of the largest non-financial sectors in the S&P 500 have also reduced leverage. As shown in Figure 6, the industrials, utilities, and consumer staples sectors all have debt-to-equity ratios that are well below peak values. For utilities, leverage hit a high point in 2003 before credit concerns caused a decline that has continued for more than 10 years. In consumer staples, leverage has been trending upwards, although it remains below the peak reached in 2001. The decline in leverage in the industrials sector is the most noteworthy and the most tightly linked to the financials sector, in our opinion. Leverage for the industrials sector has declined every year since 2009, primarily due to General Electric, which has been shrinking its financing operation. Considering that General Electric has announced its intention to eliminate most of this business, we expect the deleveraging of the industrials sector to accelerate. Specifically, General Electric has announced that total borrowings will decline from \$350bn to \$90bn by the end of 2019. Telecom is one of the few sectors currently using more leverage. At roughly 200%, the debt-to-equity ratio of the telecom sector is the highest it has been since the 1970s.

Overall, excluding financials, debt-to-equity has been climbing, although it remains well below its long-term average. This is illustrated in Figure 7. Non-financial debt-to-EBITDA has also been increasing over the last four years, and it is closer to the peaks achieved in the early 1990s, early 2000s, and 2009.

FIGURE 6

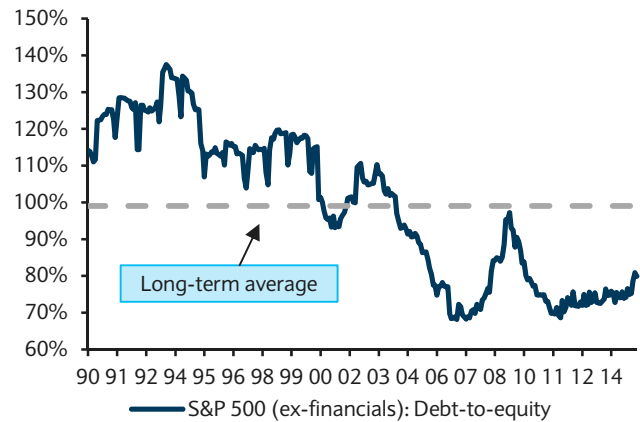
Many Large Sectors Still Have Leverage below Prior Peaks (Debt-to-Equity)...



Source: Compustat, Barclays Research

FIGURE 7

...And Overall, Non-Financial Debt-to-Equity Remains below Average

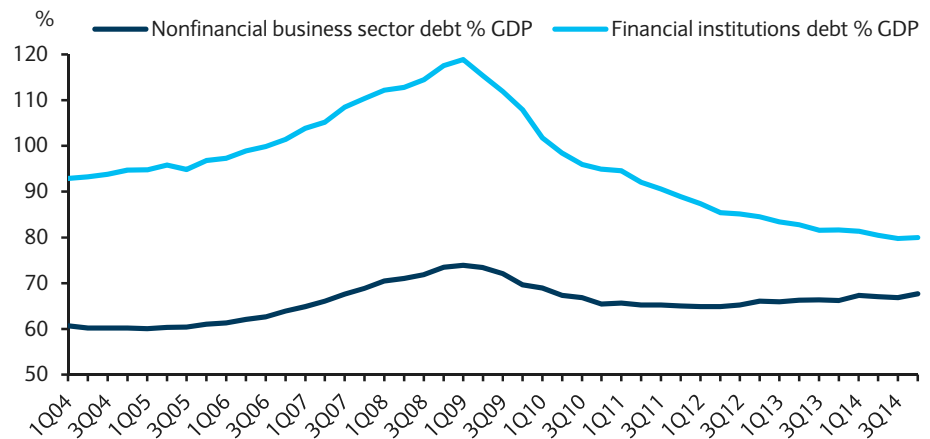


Source: Compustat, Barclays Research

The data presented so far have all been constructed using the S&P 500's constituents. But, it is mirrored by broader economic data. As shown in Figure 8, leverage for the financial and non-financial sectors has declined, although the deleveraging of financials is more severe. The one area where leverage has been increasing, as indicated by debt-to-GDP, is the general government, which intentionally increased deficit spending in reaction to the 2008 economic downturn.

FIGURE 8

Economic Data Tell a Similar Story Of Deleveraging In The Financial And Non-Financial Sectors



Source: Haver, Federal Reserve, Barclays Research

Credit Research: The Impetus for Deleveraging: It Is All About Taxes

Credit Research

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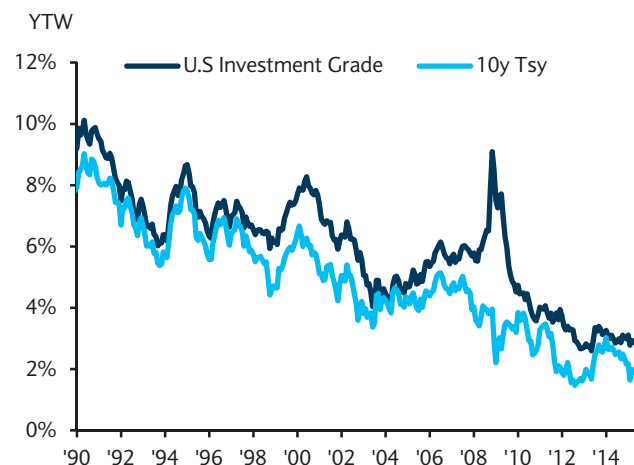
The trend toward lower leverage is perplexing in light of the direction of interest rates over the same period. Treasury yields have been on a steady downwards trend over the past 20 years – the yield on the 10 year note was over 9% at the start of 1990 and is below 2% today. While credit spreads have been volatile, particularly during the financial crisis, corporate yields in both the investment grade and high yield (HY) markets have generically followed the same trend as Treasury yields (Figure 9 and Figure 10). Certainly now, with spreads close to pre-crisis tight and overall corporate yields near historic lows, the question is not why corporates are using slightly less leverage, but why corporates are *not* re-leveraging dramatically to take advantage of cheap financing.

Clearly, the pattern of deleveraging amid ever-lower yields calls into question the idea that corporates will take advantage of lower interest rates to increase their debt loads to enhance shareholder returns. This is too simplistic a take, in our view, because it ignores the offsetting increase in the cost of equity that accompanies an increase in leverage. Instead, we believe the capital structure companies choose is determined by a trade-off between taxes and the direct and indirect costs of debt.

Debt is an attractive source of financing because interest is tax deductible. The more debt companies issue, the lower their total after-tax cost of capital. However, debt also comes with costs, which we categorize broadly as the “costs of financial distress”. As a company becomes more leveraged, managing the balance sheet comes with immediate and potential costs. The immediate costs include time spent by management addressing liquidity and funding, as opposed to running the business. The potential costs are those associated with bankruptcy or restructuring – legal fees, costly DIP financing, and forced asset sales are all ways that having too much debt can lead to value destruction.

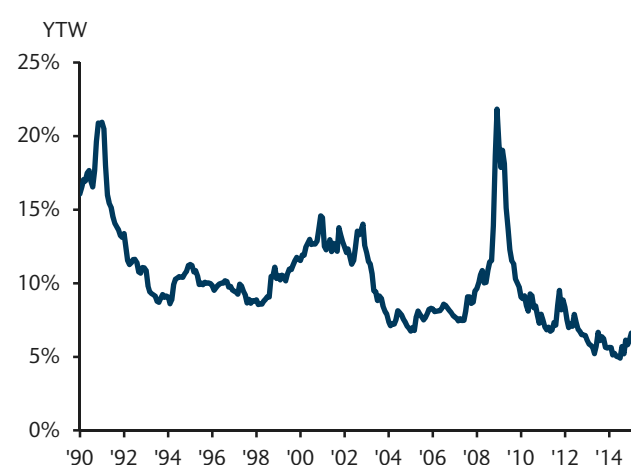
Other costs are more subtle. For example, a more leveraged company has less financial flexibility, and, thus, reduced ability to react and adapt as market and business conditions change. For example, technology companies maintain substantial balance sheet flexibility to make strategic acquisitions and otherwise adjust their businesses in response to the fast-paced changes in the information economy. Similarly, pharmaceutical companies that had issued debt to finance special dividends or otherwise return money to shareholders would have been less able to participate in the recent wave of M&A in the sector. On the other hand,

FIGURE 9
Yields Have Continued to Decline since Early 1990s



Source: Barclays Research

FIGURE 10
HY Yield Has Been More Volatile but Has Also Declined

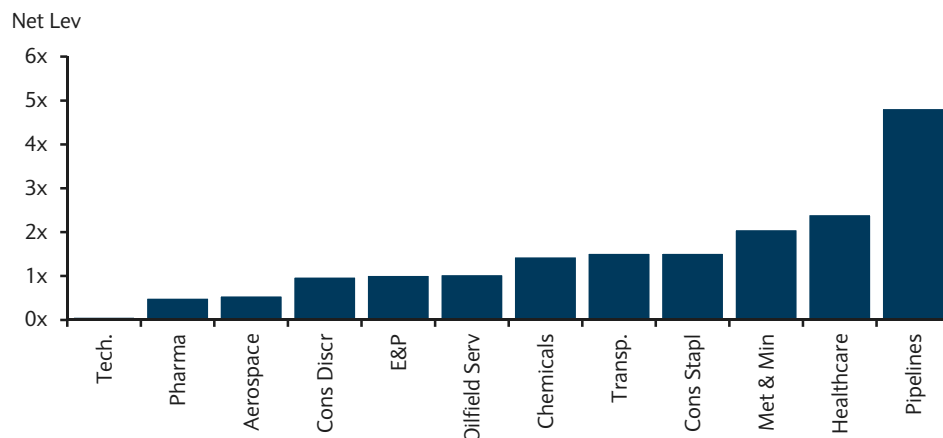


Source: Barclays Research

more mature industries with more predictable cash flows are better positioned to take advantage of the tax shield provided by higher leverage. This is evident in Figure 11, which shows net leverage by sector. Two sectors with the greatest need for balance sheet flexibility – Tech and Pharma – have the lowest leverage, while the more stable and mature sectors typically run with higher debt ratios.

FIGURE 11

Net Leverage by Sector for Investment Grade Companies



Source: Factset, Barclays Research

Lower Rates Reduce the Benefits of Using Debt

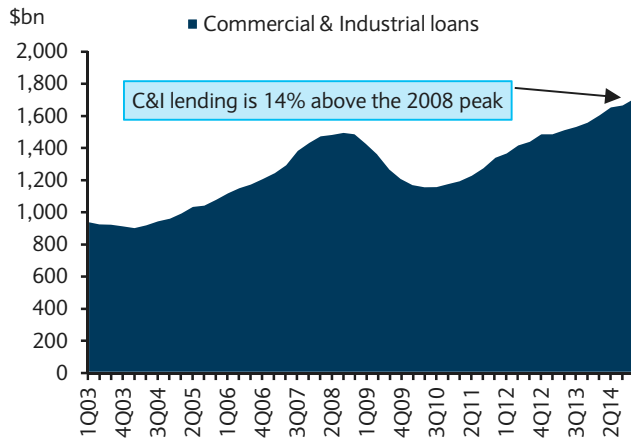
As interest rates fall, the inherent tax advantage associated with debt falls as well. This is because the tax savings are simply the US corporate tax rate of 35% multiplied by the interest on debt. In the extreme case of 0% yields – a level that high-quality issuers in Europe are approaching – there is no tax shield provided by debt.

Some of the costs associated with debt also decline with yields – as noted above, lower yields lead to higher interest coverage ratios. However, most defaults are not driven by an inability to fund interest, and the bulk of the direct and indirect costs of financial distress are relatively insensitive to the level of rates. This is also true for the reduction in financial and strategic flexibility that accompanies high debt loads. If anything, this latter cost is actually higher today, as the sector distribution tilts toward technology and other “new economy” service sectors, where these costs are more relevant.

This leads to the seemingly paradoxical conclusion that leverage levels should actually fall as yields decline. The financing mix should be weighted more heavily towards equity when the tax savings associated with debt are lower. At the same time, lower interest rates should spur investment – it is just the mix between debt and equity that will change. In the Appendix, we develop a stylized model demonstrating that the fraction of debt in a company’s capital structure should decline as yields fall.

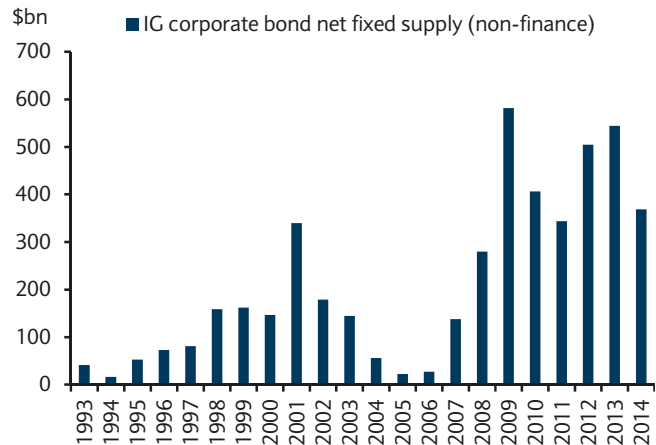
This leads to the seemingly paradoxical conclusion that leverage levels should actually fall as yields decline

FIGURE 12

Commercial and Industrial Loans Outstanding Are at an All-Time High

Source: FDIC, Haver, Barclays Research

FIGURE 13

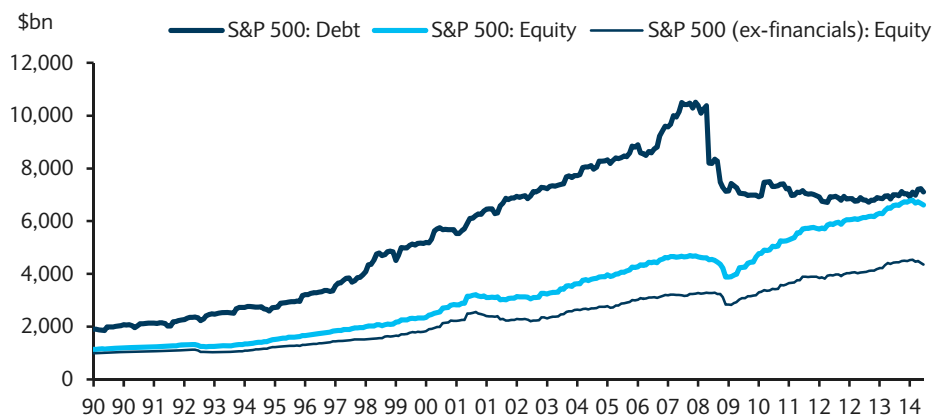
Corporate Bond Supply Remains Elevated

Source: Barclays Research

Now, an astute observer of trends in the banking system and capital markets would note that growth in commercial loans and corporate debt has been robust. Figure 12 shows that commercial loans from U.S. banks are at an all-time high and growing rapidly. In the credit market, non-financial debt issuance is elevated and well above pre-crisis levels (Figure 13).

To demonstrate how this is consistent with deleveraging, we deconstruct the debt-to-equity ratio in Figure 14. As shown, leverage has been going down because there is more equity, not because of debt reduction. In response to the credit crisis, debt at S&P 500 companies declined from \$10trn to \$7trn. This occurred less than six months after August 2008 and was attributable to the removal of Fannie Mae, Freddie Mac, and Lehman Brothers from the S&P 500. Since then, however, debt has been stable, with the increase in long-term debt (as evident in the pickup in corporate bond supply) offset by the decline in short-term paper. Meanwhile, equity has grown – a lot. Equity is now almost equal to debt, a relationship not seen before in our 25 years of data. In other words, companies are adjusting the financing mix toward equity. As mentioned previously, the equity base of the banks has almost doubled since 2007. Outside of financials, though, equity has also increased. Non-financial companies have boosted equity by more than 70% since 2008, even as they grew share repurchases and paid dividends.

FIGURE 14

Recent Deleveraging Has Been Accomplished by Raising Equity Not Lowering Debt

Source: Compustat, Barclays Research

Rates and Corporate Taxes: Two Possible Paths Forward

If our reasoning is correct, then the two main drivers of corporate leverage are rates and the level of corporate taxes. On the rates front, our strategists expect some moderate increases in rates in 2015, with a year-end 10y forecast of 2.25%. In our view, increases of that magnitude would not be sufficient to reverse the multi-year trend toward lower leverage.

At the same time, we see potential for the corporate tax rate to change. Corporate taxes have been discussed as part of either standalone or comprehensive tax reform, with the Obama administration proposing reducing the rate to 28% and Republicans generally advocating an even steeper cut. Based on our model, that would further reduce incentives to issue debt.

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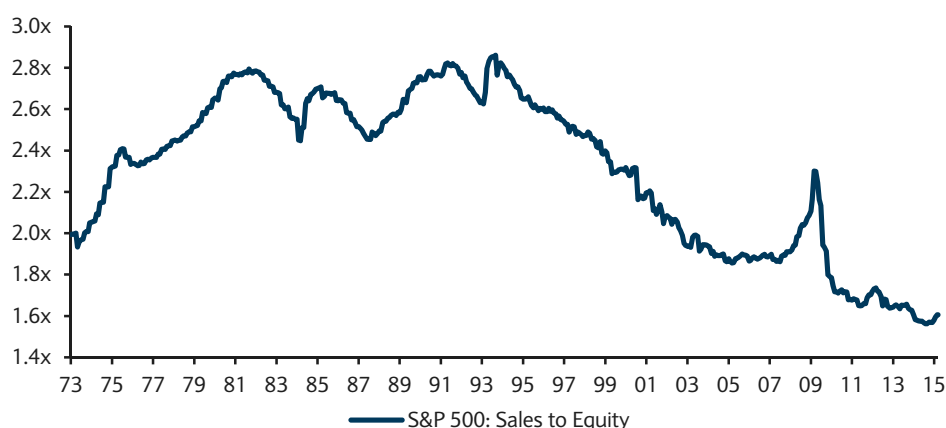
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Equity Research: Implications for Stocks

Fundamentally, companies in the S&P 500 are using more equity to run their businesses than they used to. This is particularly true in the financials sector, although it also applies to the non-financial sectors. The most striking illustration of this secular trend can be seen in the sales-to-equity ratio. Twenty years ago S&P 500 companies generated \$2.70 of sales for every dollar of equity. Today, that has fallen to just \$1.60 (Figure 15). The effect on return on equity has not been as dramatic (because profit margins are high), but there has been a reduction (Figure 16). Return on equity for the S&P 500 is low considering how advanced the economic cycle is, and we believe the reduction in leverage is a primary reason for this. To understand the implications for stocks, it is necessary to forecast the path of leverage from here.

FIGURE 15

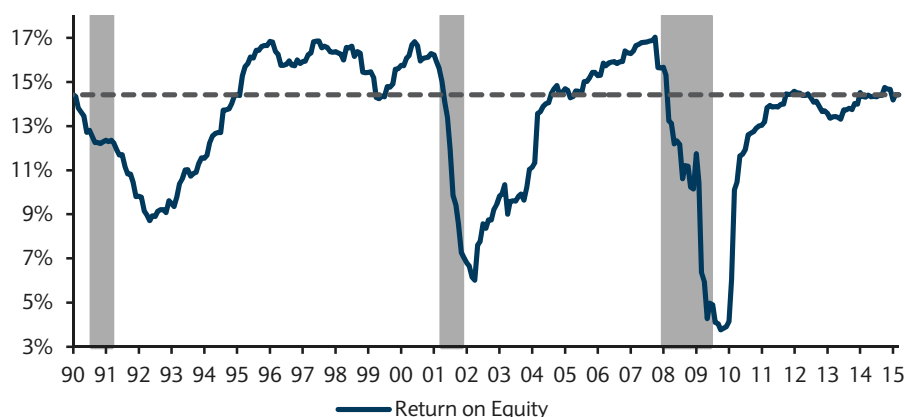
\$1 of Equity Generates Roughly Half the Sales That It Used To



Source: Compustat, Barclays Research

FIGURE 16

Return on Equity Is Structurally Lower Than It Was in Prior Cycles



Source: Compustat, Barclays Research

\$1 Trillion Buyback?

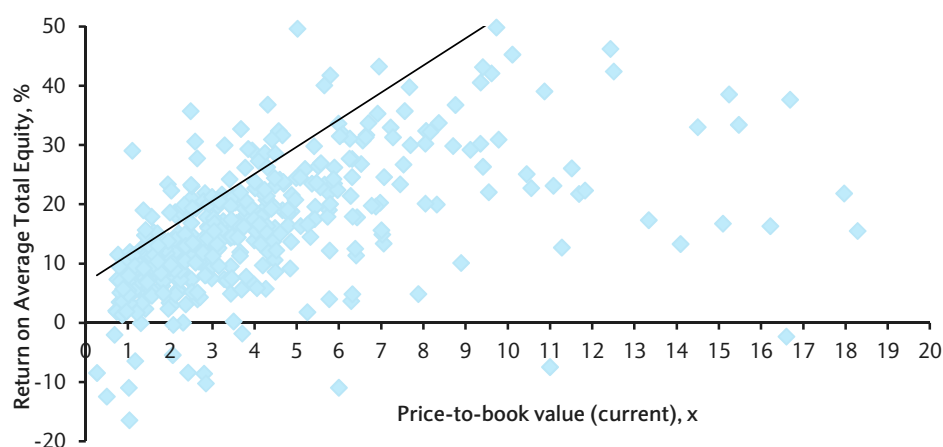
One potential path is that companies decide to lever up again. Fear caused by the credit crisis could continue to fade, replaced by a desire to use balance sheet leverage to maximize returns to shareholders. If this happened, a lot of capital could be unlocked. In fact, we

calculate that non-financial companies in the S&P 500 have almost \$1tn of excess equity that could be used for activities such as share repurchases. To demonstrate, the 25 year average debt-to-equity ratio of the S&P 500 excluding financials is approximately 100%. Currently, that ratio is closer to 80%. If equity was reduced by \$880bn the ratio would return to 100%. Alternatively, \$880bn of new debt could be borrowed. Either way, all of that money could theoretically be spent on share repurchases. While this is an interesting exercise that would surely be positive for stock prices, we do not expect it to happen.

Leverage Stays Low

Rather, we believe the secular trend of less leverage caused by low interest rates and suppressed tax savings continues, and return on equity remains below average. This could have implications for valuation. As Figure 17 shows, there is a strong link between return on equity and the price-to-book value ratio. Companies with high returns on equity usually are valued at an elevated price in relation to book value. If return on equity has in fact become structurally lower, then it could constrain any further advance in price-to-book value. At 2.8x, price-to-book value is not yet expensive, but it could become a constraint to further upside for the S&P 500.

FIGURE 17
S&P 500 Companies – ROE Plotted against Price-to-Book Value



Source: Company reports, FactSet, Barclays Research

The Market Rewards Leverage

As discussed, leverage has been falling in the S&P 500. We attribute this to an increase in equity, which could have implications for stocks, as companies either re-lever or continue on the current path. But what does the market think about leverage? To find out, we built two leverage factors. The first one ranks companies based on the debt-to-equity ratio and the second one ranks companies based on the change in the debt-to-equity ratio (Figure 18). We find that non-financial companies with high debt-to-equity have consistently outperformed over the past 15 years (Figure 19). In addition, we find that companies that are increasing their debt-to-equity ratio have outperformed (Figure 20). In other words, the market seems to reward high and increasing leverage. This is particularly true in the consumer discretionary sector and less so in the utilities sector.

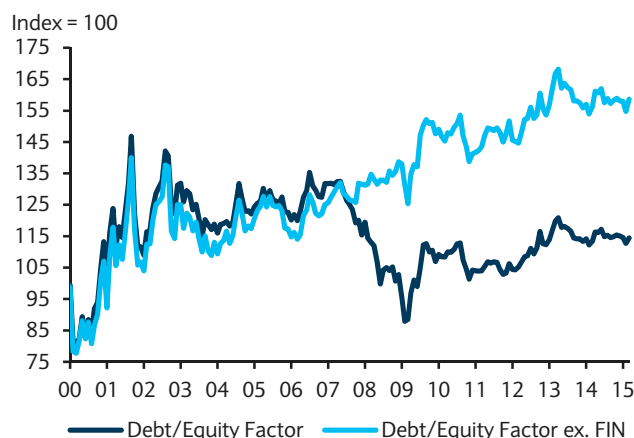
FIGURE 18

Leverage Factors

Factor	Calculation	Return
Debt/Equity	Debt/Equity	High quintile minus low quintile
Debt/Equity Growth	$(\text{Debt/Equity})/(\text{Prior Year Debt/Equity})-1$	High quintile minus low quintile

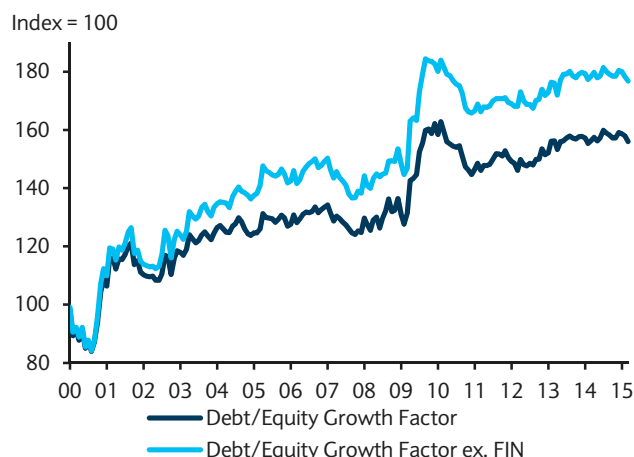
Source: Barclays Research

FIGURE 19

In Non-Financials, High Leverage Has Coincided with Better Stock Performance (Cumulative Spread Return)...

Source: Barclays Research

FIGURE 20

...The Market Has Also Rewarded Increasing Leverage (Cumulative Spread Return)

Source: Barclays Research

A List of Companies with High and Increasing Debt-to-Equity

Considering the results of our factor analysis, which shows that stocks with high leverage and increasing leverage outperform, we present a list of stocks that fit both criteria. This list is quantitatively derived from the screen used to build our factors. Each company has a high debt-to-equity ratio and has elevated growth in the debt-to-equity ratio. We believe this list is aligned with what the market rewards in terms of leverage profile.

FIGURE 21

Twenty-two Companies with High Debt/Equity and High Debt/Equity Growth

Symbol	Company Name	Sector	Debt/Equity	Debt/Equity Growth
ABBV	AbbVie, Inc.	Health Care	6.3	0.9
BDX	Becton, Dickinson and Company	Health Care	2.0	1.6
CCE	Coca-Cola Enterprises, Inc.	Consumer Staples	2.3	0.4
CL	Colgate-Palmolive Company	Consumer Staples	4.9	1.4
EMN	Eastman Chemical Company	Materials	2.1	0.8
HD	Home Depot, Inc.	Consumer Discretionary	1.8	0.6
HOT	Starwood Hotels & Resorts Worldwide, Inc.	Consumer Discretionary	1.7	2.7
IBM	International Business Machines Corporation	Information Technology	3.1	0.9
IP	International Paper Company	Materials	1.7	0.5
KLAC	KLA-Tencor Corporation	Information Technology	5.3	24.3
KMB	Kimberly-Clark Corporation	Consumer Staples	8.9	6.8
LMT	Lockheed Martin Corporation	Industrials	1.8	0.5
NWL	Newell Rubbermaid Inc.	Consumer Discretionary	1.3	0.5
OKE	ONEOK, Inc.	Energy	13.9	2.9
OMC	Omnicom Group Inc	Consumer Discretionary	1.6	0.4
PBI	Pitney Bowes Inc.	Industrials	37.9	1.1

Symbol	Company Name	Sector	Debt/Equity	Debt/Equity Growth
SHW	Sherwin-Williams Company	Materials	1.8	1.6
SYT	Sysco Corporation	Consumer Staples	1.4	1.4
UPS	United Parcel Service, Inc. Class B	Industrials	4.6	1.8
VIAB	Viacom Inc. Class B	Consumer Discretionary	3.9	0.6
VZ	Verizon Communications Inc.	Telecommunication Services	9.0	2.9
YUM	YUM! Brands, Inc.	Consumer Discretionary	2.0	0.5

Source: Barclays Research

Conclusion

Companies in the S&P 500 have reduced leverage. Initially a reaction to the credit crisis, deleveraging has persisted for seven years, becoming a secular trend. While the financials sector is the most significant cause of deleveraging, the non-financial sector has also participated. Based on our credit counterpart's analysis, we have reached the seemingly paradoxical conclusion that leverage levels should actually fall as yields decline because the inherent tax advantage associated with debt falls as well. This has implications for stocks. Unless companies begin to re-lever, which we do not expect, return on equity will likely remain suppressed. From the perspective of historical returns, the market likes leverage. Companies with high debt-to-equity and increasing debt-to-equity have outperformed. We provide a list of companies that have these leverage traits. Overall, there is no change to our S&P 500 price target, which is 2100.

Appendix: Optimal Capital Structure

Consider a stylized one-period scenario in which a company has only one project to invest in. The project has two potential outcomes – it is a success, in which case it returns $\$U$, or it fails, in which case the recovery is $\$R$ ($< \$U$). We assume that the probability of failure is p . We assume a risk-neutral framework in order to simplify the calculations below, although the conclusions also hold when risk premia are incorporated.

Suppose the company incurs Debt D . Assuming the risk-free rate is r_f , the debt should yield y , such that:

$$D(1 + r_f) = (1 - p)D(1 + y) + pR \quad (1)$$

where the first term on the right-hand side is the return if the project is a success (and debt receives principal and coupon) while the second is if it defaults (and the debt recovers R). Equity E should be worth the remaining excess value in case the project is a success after subtracting the coupon/principal payment on debt (in case of default, we assume the entire recovery value goes toward paying down debt and that the equity is worth nothing):

$$E(1 + r_f) = (1 - p)(U - D - Dy(1 - \tau) - \alpha D^2) \quad (2)$$

where τ is the tax rate and $Dy(1 - \tau)$ is the coupon paid out on the debt adjusting for the fact that interest is tax deductible. Furthermore, we assume that the term “ αD^2 ” captures the cost of financial distress, which increases as indebtedness increases. The total firm value is then

$$D + E = D + \frac{(1 - p)(U - D - Dy(1 - \tau) - \alpha D^2)}{1 + r_f} \quad (3)$$

where we substitute for E from Equation (2). Further simplifying Equation (3) and substituting for y from Equation (1), we get

$$D + E = \frac{(1 - p)U + pR}{1 + r_f} + \frac{(D(r_f + p) - pR)\tau}{1 + r_f} - \frac{\alpha D^2(1 - p)}{1 + r_f} \quad (4)$$

The first term on the right-hand side is the expected value of the cash flows from the project, the second term captures the benefit from the tax shield and the third accounts for the cost of financial distress incurred because of the indebtedness. From Equation (4), the optimal amount of debt D_{opt} such that the firm value is maximized is

$$D_{opt} = \frac{(r_f + p)\tau}{2\alpha(1 - p)} \quad (5)$$

The optimal debt amount increases with risk-free rate r_f and default probability p as both result in a higher debt yield and thereby benefit from the tax shield. A higher tax rate has the same effect. On the other hand, the higher the cost of financial distress α , the lower the optimal debt.

The key conclusion from Equation (5) is that as risk-free rates fall, the optimal capital structure involves less debt financing and more equity capital. Essentially the benefit of issuing debt (in particular, the tax saving on the interest) decreases as risk-free rates and debt yields fall even though the cost of issuing debt remains the same. It leads to a counterintuitive result – as debt yields decline, corporates should issue less debt.

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