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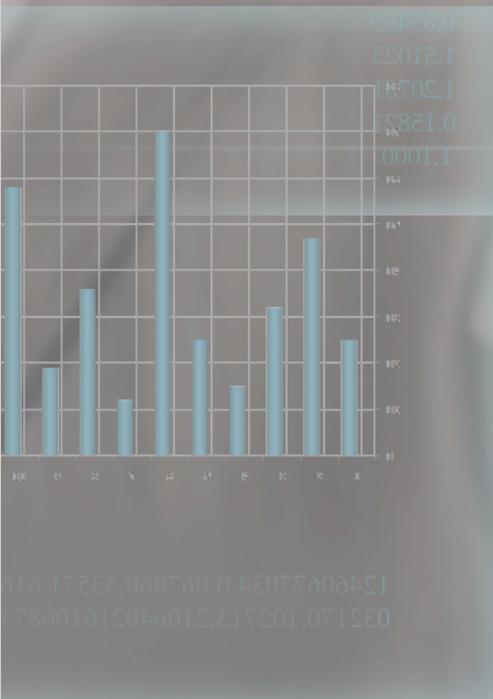
ANALYSIS THAT REVEALS

DECEMBER 2013



ECONOMIC OUTLOOK

Don't Fear the Taper: Alpha Strikes Back in 2014



THE CARLYLE GROUP

GLOBAL ALTERNATIVE ASSET MANAGEMENT

Don't Fear the Taper: Alpha Strikes Back in 2014

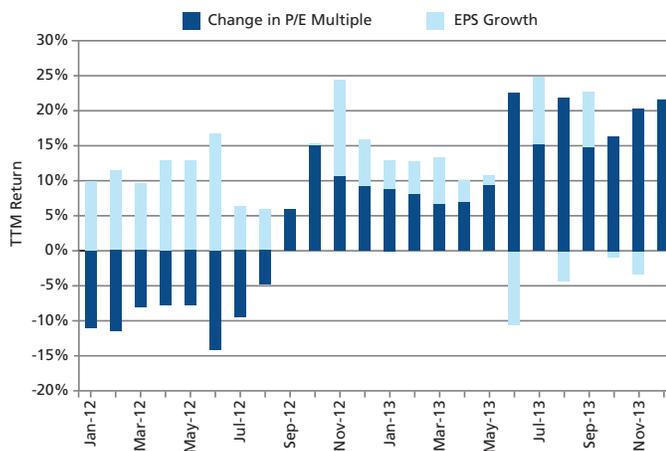
By William E. Conway, Jr. & Jason M. Thomas

Stocks have had quite a run. Since October 2011, U.S. equity indexes have increased by 60%, adding more than \$3 trillion to U.S. household net worth.¹ Stock markets in other developed economies have increased by about 50% over the same period.² The best performing portfolios have been those with the highest “beta,” or exposure to systematic market risk. That’s not likely to prove to be the case going forward. Expected returns have fallen substantially; the rising tide that lifted all boats has run its course. In 2014, alpha – risk-adjusted outperformance from superior investment selection and company management – is likely to return to the fore, as average returns fall and the dispersion across returns increases.

The Run-up in Asset Prices

In the early stages of the rally, stock returns came mainly from earnings growth. Over the past twelve months, returns have come from investors’ willingness to pay a much higher price for the same earnings. As shown in Figure 1, strong earnings-per-share (EPS) growth offset declines in price-to-earnings (P/E) ratios until August 2012. Since then, valuations have increased steadily and increases in P/E ratios now account for virtually all of the year-over-year returns on U.S. stocks. In the twelve months ending in December 2013, increases in P/E ratios have accounted for 21.5% of the 21.7% in value-weighted U.S. stock returns (net of dividends); EPS growth contributed just 0.2% to returns (Figure 1).

Figure 1: Decomposing Returns on the U.S. Stock Market³



The 38% increase in the average P/E ratio since October 2011 can mean one of two things for today: (1) earnings growth is going to be faster than previously expected; or (2) future returns will be lower. When “market efficiency” was regnant, expected returns were thought to be constant (or purely random), which meant every move

in the P/E ratio must predict future earnings.⁴ As analysts became less reverent about the market’s capacity to deliver reliable forecasts – Paul Samuelson’s famously quipped that the “stock market has called nine of the last five recessions” – alternative interpretations have gained favor. Today, it is generally agreed that shifts in market prices tend to largely reflect changes in the rates market participants use to discount future corporate cash flows.⁵ Variation in discount rates can be caused by shifts in monetary policy, risk aversion, time preference, risk perceptions, or other factors.

The easiest explanation for the increase in asset prices over the past two years is that required returns have fallen because of a decline in “tail risk” perceptions. As we wrote in December 2011, “current prices only make sense in the event of an economic disaster.”⁶ There was no shortage of perceived potential sources of that disaster – fragmentation of the euro zone, a hard landing in China, fiscal crisis in the U.S., etc. – but each remained a low-probability. As perceived risks declined and memories of 2008 receded, risk premiums naturally declined, which reduced discount rates and increased asset prices. Today, evidence of a “disaster discount” has disappeared, with U.S. corporate assets now selling at valuations 5% to 7% above long-run averages.⁷

Bidding up the Price of the Existing Capital Stock

Investors seem to be a step or two ahead of business managers when it comes to their willingness to assume risk. The large inflows into risk asset classes have not been matched by a corresponding increase in businesses seeking funds to expand or acquire competitors. The result has been a supply-demand imbalance where investors have bid up the price of the existing capital stock instead of funding new productive capacity.

¹ S&P Capital IQ Database; net worth data from Federal Reserve, B.100.

² MSCI World Index, S&P Capital IQ Database

³ S&P Capital IQ Database, value-weighted composite of domestically listed U.S. stocks. Log returns are used for the decomposition.

⁴ C.f. Cochrane, J. (2011), “Discount Rates.” *Journal of Finance*.

⁵ Campbell, J.Y and Shiller, R. (1998), “The Dividend-Price Ratio and Expectations of Future Dividends and Discount Factors.” *Review of Financial Studies*.

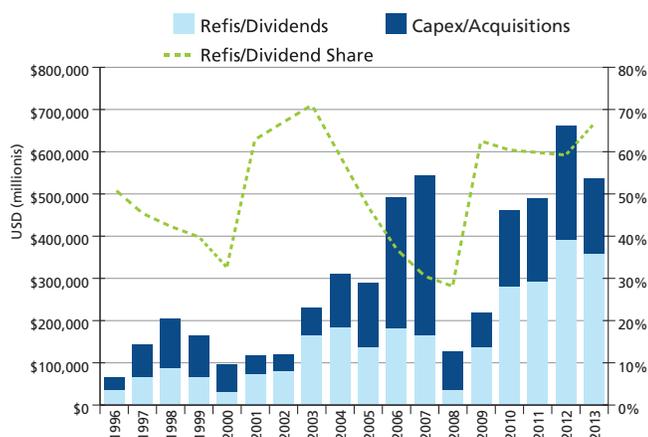
⁶ Thomas, J. (2011), “Corporate Equity Attractive in the Land of No Returns,” *Economic Outlook, The Carlyle Group*, December 2011.

⁷ Measured as enterprise value of domestically listed U.S. stocks relative to trailing twelve month’s Ebitda.

Today’s high valuations are the product of low interest rates, which are anchored by a structural excess of savings over desired investment – not just Fed policy. Low rates can help to sustain valuations near current levels, but not provide any impetus for further returns. These will have to come from superior investment selection and direct ownership to exploit strategies that increase the value of existing businesses.

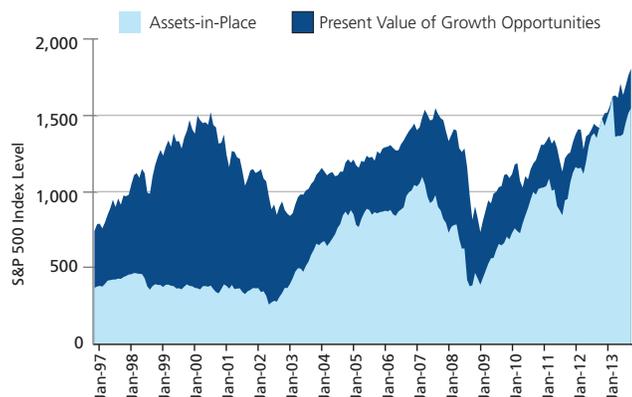
This phenomenon is obvious to close observers of the speculative grade credit market, where gross issuance volumes are high but net credit growth is low. As shown in Figure 2, over the past two years, speculative grade credit originations – both high-yield bond and leveraged loans – have eclipsed the 2006-2007 records. But whereas 60% of the proceeds of 2006-2007 originations were used to fund acquisitions and capital expenditures, more than two-thirds of 2013 issuance has gone towards refinancing and dividends. Liquidity is channeled towards refinancing the existing stock of assets at higher prices instead of funding new property, plant, and equipment.

Figure 2: Speculative Grade Credit: Issuance & Uses⁸



Most of the increase in the stock market is also attributable to liquidity inflows bidding up the value of existing assets. The market value of a business reflects the fair value of assets-in-place plus the present value of future growth opportunities.⁹ When valued as the perpetuity value of current earnings, assets-in-place currently account for 85% of the combined market value of S&P 500 constituents (Figure 3).¹⁰ That is, at current discount rates the S&P 500 would be worth 1547 with zero growth in future earnings among its constituents, or 85% of the current index value of approximately 1800.

Figure 3: Decomposing the Value of the S&P 500¹¹



⁸ Carlyle Analysis of data from Bank of America Merrill Lynch, High Yield Chartbook, November 2013.

⁹ Miller, M.H., and Modigliani, F. (1961), "Dividend Policy, Growth and the Valuation of Shares," Journal of Business.

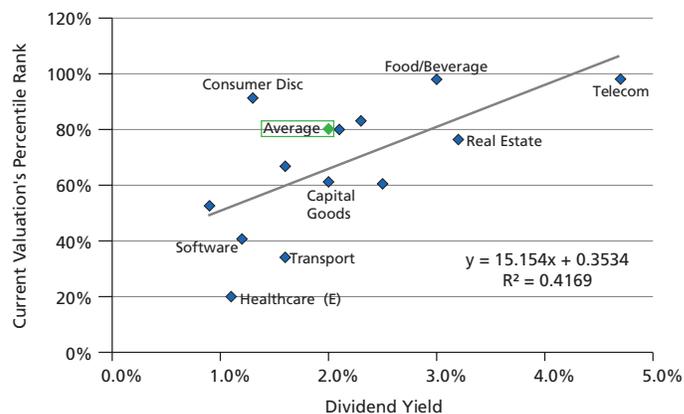
¹⁰ The perpetuity value is calculated as the current period earnings for S&P 500 constituents discounted to present value using the effective yield on B-rated corporate credit, which reflects the risk-free interest rate and time-varying premiums to account for duration and market risk.

¹¹ Carlyle analysis of S&P Capital IQ data. See also: Ang, A. and Xioyan, Z. (2011), "Price-to-Earnings Ratios: Growth and Discount Rates," CFA Institute. Danbolt, J., et al. (2002), "Measuring Growth Opportunities," Applied Financial Economics.

As is clear from Figure 3, high asset prices in the late-1990s depended on unrealistic growth expectations, which accounted for more than 70% of the stock market's value. Today, valuations depend on record low interest rates. A 100 basis point increase in the discount rate applied to current earnings would reduce the value of assets-in-place by 14%; a 200 basis point increase would reduce the value of the perpetuity by 26%. Whereas the high market value of growth opportunities translated to record business fixed investment growth in the late-1990s, today's low valuation of growth opportunities is reflected in subdued business fixed investment, which is currently about \$500 billion below its 2000-2008 trend in real terms.¹²

The relationship between low interest rates and valuations is also clearly visible on a cross-sectional basis. Low interest rates have pushed investors into dividend-paying stocks, increasing their valuations relative to historic averages. Figure 4 plots the relationship between the dividend yield and valuation by industry. The higher the dividend yield, the larger the industry's current valuation relative to its historic average. For example, the telecom industry's dividend yield is 4.7% and its members currently trade at the 97th percentile of the historic distribution. The transportation industry, by contrast, yields 1.6%, on average, and is in the 34th percentile of the historic distribution.

Figure 4: Dividend Yield & Valuations by Industry¹³



Why Are Interest Rates So Low?

The easiest explanation for today's low discount rates is Fed policy. But we believe this explanation is too simple. The main driver of low rates is a surplus of savings over desired investment. Nonfinancial businesses would rather increase cash positions, buyback stock, pay dividends, and lend to other businesses than invest in new productive capacity. Even with cash holdings at record levels, nonfinancial businesses ran a cash flow surplus with the rest of the economy equal to 2.3% of GDP through the first nine months of 2013.¹⁴ While the data only go back to 1960, at no time prior to 2009 has the surplus been so large. By saving more than it invests, the business sector effectively creates a scarcity of physical assets that places downward pressure on equilibrium interest rates.

It may be interesting for those who blame low rates on the Fed to consider the dominant academic paradigm suggests the current

¹² Bureau of Economic Analysis.

¹³ S&P Capital IQ. The valuation ratio is the aggregate enterprise value of the industry relative to its aggregate trailing twelve month Ebitda. The distribution is calculated using daily data over the prior 10 years.

¹⁴ Federal Reserve, S.2.

problem is that policy rates are actually too high. When businesses wish to save rather than invest, it suggests that the “natural rate” of interest must be lower than the real interest rate (the nominal policy rate net of inflation).¹⁵ The zero lower bound on nominal rates inhibits the Fed from lowering the real rate to this new “natural rate,” so investment remains depressed.¹⁶ If cash is a call option on future investment opportunities, “high” real interest rates cause investors to defer investment decisions and prefer the call option (cash) to the underlying asset.

How low would real rates have to be to turn businesses into net borrowers? Based on the historic relationship between nonfinancial businesses’ current account balance and the real interest rate, current surpluses imply that a real interest rate of -10% would be required to immediately close the investment gap (Figure 5). By contrast, the implied real interest rate required to slow the late-1990s investment boom to sustainable levels would have been over 10%!

Figure 5: Implied Real Interest Rate Required to Achieve Desired Investment Rate¹⁷



Obviously, interest rates swings of this magnitude are not advisable or practicably implemented. The point is that during periods of extreme optimism, when growth opportunities are assigned high market values, it is practically impossible to raise rates sufficiently high to slow investment. Conversely, in times like today, risk aversion, concerns of overcapacity, and a general sense of pessimism may all suppress the value of growth opportunities to the point where interest rates are incapable of spurring necessary business spending. Aside from policies like an incremental investment tax credit, it is not clear what short-term policies are available to combat excessive business savings.

Implications for Current Investment Decisions

While a sharp sell-off in 2014 is surely possible, we think today’s high prices are likely to be sustained for some time. Today’s high valuations are the product of low discount rates, which are anchored by a structural excess of savings over investment. The most likely scenario in which discount rates would rise would be one in which business investment increases to shrink the pool of excess savings.

¹⁵ For a discussion of the Wicksellian natural rate, see Chapters 2-4 of Woodford, M. (2003), *Interest and Prices*.

¹⁶ Hall, R. (2013), “Routes in and Out of the Zero Lower Bound,” FRBKC Symposium.

¹⁷ Carlyle Analysis based on Federal Reserve, S.2.q and H.15.

In this context, the decline in asset prices from higher discount rates would most likely be offset by an increase in the value assigned to growth opportunities (which tends to spur new investment).

This is not to say Fed tapering will have no impact on markets. “Tapering” is best interpreted as the long-awaited roll-back of Fed “tampering” with asset prices. Large-scale asset purchases have dampened stock market volatility, incentivized risk taking, and suppressed term premia, leading to lower long-term yields than would prevail otherwise. However, Fed officials have gone to great lengths to disassociate “tightening” and tapering. The Fed has the desire, will, and capacity to keep policy rates near zero for some time. The relative strength of the U.S. also virtually guarantees that the U.S. economy would be the recipient of safe-haven fund flows if an unwelcome development in Europe, China, or another emerging market spurred capital flight. Taken together, low rates can help to sustain valuations near current levels, but not provide any impetus for further returns. These will have to come from superior investment selection and direct ownership to exploit strategies that increase the value of existing businesses.

When corporate asset prices are high, it is generally the best time to invest in the highest-priced companies in a given industry or geography. That’s because the premium the highest quality businesses command relative to peers tends to be countercyclical.¹⁸ In bad times, the best businesses often trade at steep premiums due to their more reliable cash flows and lower probability of insolvency. Conversely, when the general price level of assets is high, like today, valuation gaps tend to be small, as lower quality businesses benefit more than proportionately from a rising market.¹⁹ Fed asset purchases may have also strengthened investors’ tendency to “buy what is cheap” in a rising market. When apparent excesses in peers’ multiples serve as the primary rationale for an investment, it should not be made.

Businesses capable of transforming today’s low interest rates into productive capital make for especially attractive targets for control transactions. By lowering operating costs, cheap natural gas has dramatically increased energy-intensive manufacturers’ marginal return on fixed capital. The chemicals, aluminum, concrete, and paper industries are likely to offer many profitable investments in new productive capacity or cogeneration projects to burn natural gas onsite. Similarly, there is likely to prove no better time than the present to fund long-lived infrastructure projects to transport and burn natural gas and the electricity it produces, both in the U.S. and internationally. Should currency movements substantially reduce the relative price of capital in emerging markets, there will be a number of opportunities to acquire productive capacity at a fraction of its replacement cost in developed economies.

Conclusion

Expected returns on corporate assets have fallen substantially. While a sell-off in 2014 is surely possible given high prices, interest rates are likely to remain low and support current valuations for some time. Low rates are supported by a structural surplus of savings over desired investment, captured most saliently by nonfinancial

¹⁸ Asness, et al. (2013) “Quality Minus Junk,” Available at SSRN: <http://ssrn.com/abstract=2312432> or <http://dx.doi.org/10.2139/ssrn.2312432>

¹⁹ The market sensitivity of discounted (value) stocks tends to covary positively with expected returns. Petkova, R. and Zhang, L. (2005), “Is Value Riskier than Growth,” *Journal of Financial Economics*.

businesses' record cash flow surplus with the rest of the economy. Any sustained increase in interest rates would likely come in the context of increasing business investment, where increased growth would limit downside price risk.

After enjoying a spectacular ride from "beta" over the past two years, investors should focus on "alpha." Incremental outperformance is most valuable when expected returns are low. Incremental returns from today's high prices will require superior investment selection and company management.

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