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GDP growth and equity market returns

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Is there a relationship between GDP growth and equity market returns?

Conventional wisdom holds that equity market returns are not linked to GDP growth. This widespread view was supported by a 2005 study by Dimson, Marsh and Staunton, whose cross-sectional analysis of stock returns in 53 countries (going back to 1900 for 17 countries) did not find evidence of a stable positive relationship between GDP growth and equity returns. The experience of 2012 seems to uphold this view, with the UK equity market returning 12.3%[1] whilst GDP remained broadly flat[2].

However, recent research suggests that there may be more to it than that. This paper will explore evidence from two studies which propose that:

1. The relationship between GDP growth and financial markets needs to be seen in the context of the broader economic cycle. In particular, the behaviour of GDP growth needs to be considered alongside changes in inflation and monetary policy. In support of Dimson, Marsh and Staunton, the Schroders Economics team find evidence that markets can perform well during periods of weak economic growth if accompanied by an easing in monetary policy. However, in the years following the global financial crisis of 2007-2008 this relationship has shifted such that there appears to be a stronger relationship between GDP growth and equity returns. Inflation has become less important as a driver of asset returns, a result we attribute to a change in central bank behaviour.

2. While there may be no consistent long term positive correlation between equity returns and actual GDP growth, a significant relationship has been found between equity returns and expected GDP growth. This is unsurprising given the link (via a discounting mechanism) between stock prices and expectations regarding both earnings and interest rates (and thus GDP growth).

If the relationship between GDP growth and equity market returns is stronger than previously suspected, what could this mean for investors? We conclude that the existence of a stronger relationship between GDP growth and equity returns is not necessarily bad for investors, despite the current low growth environment. If expectations are key, a poor economic outlook will already be priced in, and investors' returns will depend instead upon whether market expectations are overly optimistic or pessimistic with regards to future GDP growth.

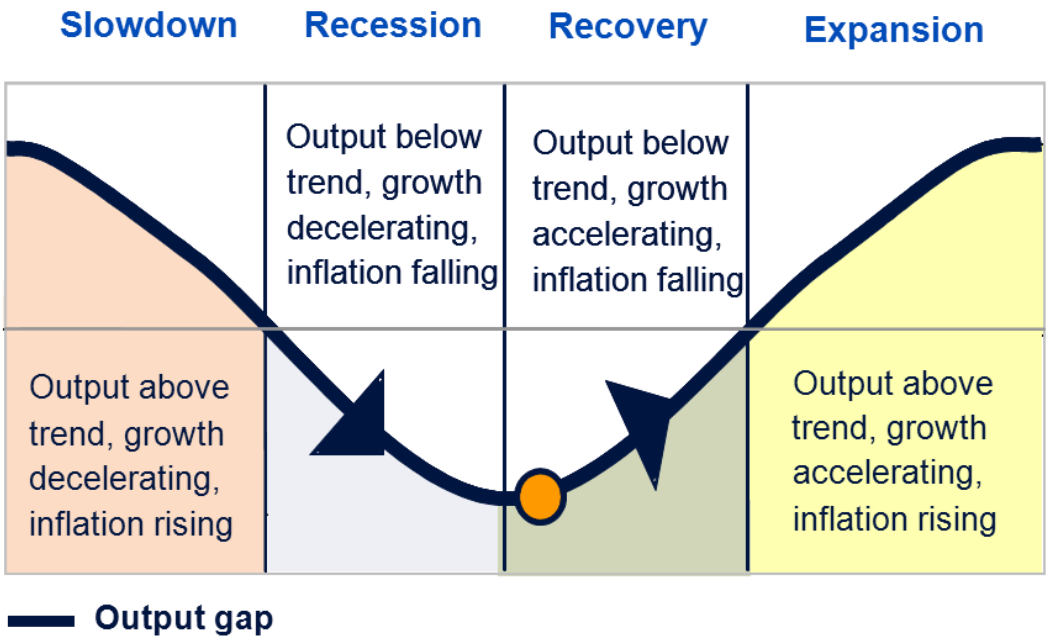
[1] Source: Datastream. Total return of FTSE All Share index, between COB 31 December 2011 and 31 December 2012.
[2] Source: ONS. Estimate of 2012 GDP at 25 January 2013. This figure is subject to revision in the second estimate of GDP when all quarters of 2012 are open for revision.

1. No long term relationship between GDP growth and equity market returns

A 2005 study by Dimson, Marsh and Staunton, which performed a cross-sectional analysis of stock returns in 53 counties (going back to 1900 for 17 countries), did not find evidence of a significant long term positive relationship between GDP growth rates and equity returns.

Analysis from Schroders Economics team found that over the past sixty years there has tended to be a positive relationship between GDP growth and equity market returns during the recovery, expansion, and slowdown phases of the traditional business cycle. However this relationship has traditionally broken down during the recession phase (see Figure 2).

Figure 1: The traditional business cycle model



Source: Schroders, February 2013.

Figure 2: The traditional business cycle model

	Slowdown	Recession	Recovery	Expansion
GDP growth	Positive but falling	Negative and falling	Negative but rising	Positive and rising
Inflation	High and rising	Falling	Low and falling	Rising
Policy stance	Tight	Loosening	Loose	Tightening
Interest rates	Stable	Falling	Stable	Rising
Excess return* on equity	*-8.4*	*7.7*	*8.4*	*8.4*
Driver of equity returns	Earnings/ Valuations	Valuations	Earnings	Earnings

Source: Schroders, Datastream. S&P 500 composite (1950 - 2010). Figures are based on a completed phase of the cycle; the last phase ended in March 2010. Data for capacity utilisation and the unemployment rate in the US are used to estimate the output gap and stage of the cycle. *Excess return over the 3-month Treasury bill. Performance shown is past performance. Past performance is not indicitive of future results. The vakue of an investment can go up/down and is not guaranteed.

In the recovery and expansion phases of the business cycle, the stock market tends to perform well as rising GDP and earnings growth drives positive excess returns on equity (Figure 2). In the slowdown phase, inflation is still high and monetary policy remains tight, resulting in a difficult environment for corporations. Reduced earnings and stock valuations tend to result in negative excess returns for equities: declining GDP growth is therefore usually matched with poor equity performance.

During the recession phase, there is often a de-coupling of GDP growth and stock market returns: GDP growth is falling, but the excess return on equity tends to be positive. Historically, falling inflation and an accompanying loosening of monetary policy during this phase has led to a 're-rating' of the equity markets (that is, a rise in P/E ratios).

The discounted cash flow approach to equity valuation equates the fair value of a stock to the present value of expected future cash flows. This is calculated by discounting expected future cash flows by the relevant interest rate. A reduction in interest rates (i.e. a loosening of monetary policy) can therefore cause stock prices to increase, and equity investors may experience good returns on equity during a period in which the rate of GDP growth is falling.

2. A significant positive correlation between GDP growth and equity returns can persist over shorter time periods, and such a relationship can be observed in the current market environment

The previous body of evidence would seem to hold a positive message for investors concerned about the potential impact of a continuing low growth environment on the prospects for stock market returns. However, we have found that in more recent years there has been a stable and significant positive correlation between actual GDP growth and equity market performance.

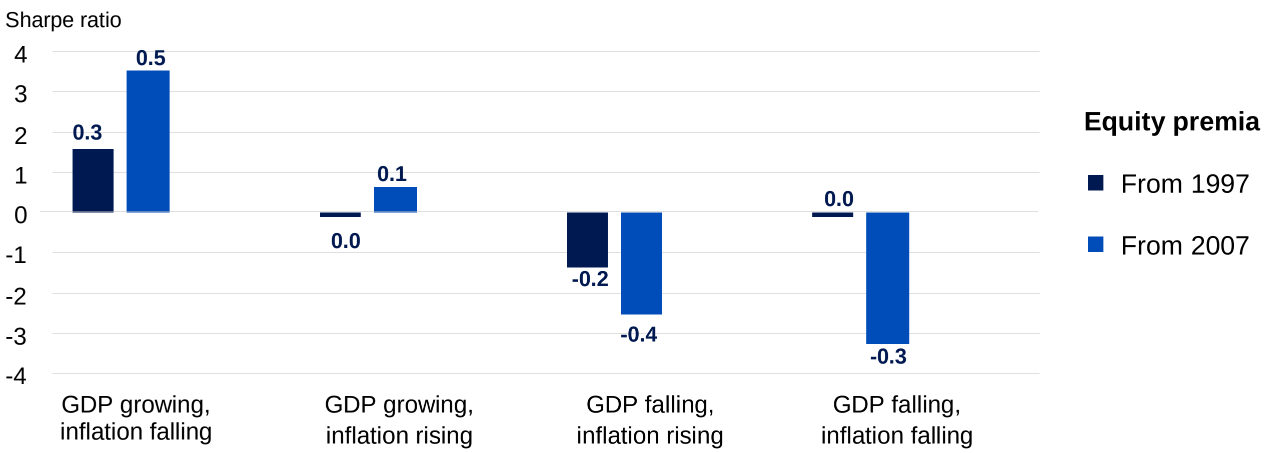
Why has this been the case?

a) Increased importance of GDP growth relative to inflation in driving monetary policy

Figure 3 shows the average equity premium (calculated as the total return of the S&P 500 in excess of that of US 10-year Treasuries) under different market conditions before and after the 2007-2008 global financial crisis.

In the decade preceding the financial crisis, GDP growth and inflation both appear to have had a sizeable impact on equity performance. However, after 2007, equities performed positively when GDP was growing, and negatively when GDP was falling regardless of the level of inflation.

Figure 3: Average monthly equity premia



Source: Schroders, Datastream. Equity premia: S&P 500 minus US 10-year Treasuries total return. All figures based on completed phase of the cycle. Schroders proprietary growth and inflation indicators used to define stage of cycle. Data from September 1997 to December 2011. Performance shown is past performance. Past performance is not indicitive of future results. The vakue of an investment can go up/down and is not guaranteed.

Then

Prior to the 2007-2008 global financial crisis, inflation was a major driver of monetary policy decisions. When inflation was low, monetary policy tended to loosen (i.e. interest rates were lowered), whereas high inflation would usually be met with tightening monetary policy (that is, a rise in interest rates). The adjustment of interest rates associated with changing monetary policy would stimulate a 're-rating' of the equity markets, with raised interest rates producing lower stock prices (due to future cash flows being discounted at higher interest rates) and vice versa.

Figure 3 shows that in the decade before 2007, equity performance tended to be strong when GDP was growing and inflation was low (when strong profits were combined with a looser monetary policy stance), and weak when GDP was falling and inflation was high (when poor profits were combined with a tightening of monetary policy). However, in periods when strong GDP growth was matched with high inflation or vice versa, the opposing effect of the two factors tended to result in neutral equity market performance.

Now

In the low growth environment following the global financial crisis, inflation is no longer the primary consideration for central banks, so changing inflation expectations are less likely to result in a significant change in monetary policy. With inflation no longer exerting a significant effect on equity performance, GDP growth has come to the forefront as a driver of stock market returns.

The reduced importance of inflation in driving monetary policy (and thus equity market returns) seems set to persist, with talk that the UK government will alter the Bank of England's inflation target in favour of a nominal growth target. In the US, the Federal Reserve still takes account of inflation, but has tied monetary policy directly to the level of unemployment.

b) The impact of monetary policy decisions on the markets is now less clear

The closer relationship between GDP growth and equity market returns in the years following the financial crisis could also be due to the (seemingly) reduced impact of monetary policy decisions on the equity markets. Interest rates in the US, UK and Eurozone are at – or close to – the 'zero bound' (i.e. cannot be cut further) and the impact of quantitative easing (QE) programmes on the economy has been less easy to quantify.

If there were to be another recession, there would be little room for interest rates to be cut further. Without the return from the 're-rating' of the stock market (resulting from the fall in interest rates) there would be less reason for equity performance to become disconnected from economic growth. With this source of de-coupling removed, one would expect to see a closer relationship between GDP growth and stock market performance while the current low interest rate environment persists.

When combined with the impact of debt de-leveraging – which has made economic cycles shorter and less certain – we believe that investors are placing greater value on near term earnings visibility and growth. Meanwhile, monetary policy measures such as QE are primarily affecting markets through portfolio re-balancing, with investors being forced into riskier assets as central banks drive down bond yields[3]. However, this effect tends not to persist, and markets tend to fall back as the programme draws to a close.

[3] In the face of rising bond prices, investors are obliged to sell bonds and buy risk assets in order to maintain their strategic asset allocation

3. Equity market performance is positively correlated with expectations of future GDP growth

In a recent study, O'Neill, Stupnytska & Wrisdale (2011)[4] argued that the failure of researchers to find a significant relationship between GDP growth and equity returns over the long term could be due to conceptual issues with their analysis. Equity markets are forward-looking, and it would therefore seem reasonable that expected rather than actual GDP growth would play a greater role in driving equity performance.

In keeping with this, O'Neill and his colleagues found changes to consensus expectations for future GDP growth to have a significant impact on equity returns, with equity returns functioning as a leading indicator of GDP growth in many countries.

A regression of real equity returns against revisions in consensus forecasts for GDP growth in both the current year and the year ahead showed that while changes in current year growth forecasts had no significant impact on equity returns, adjustments to next year forecasts were positively correlated with equity market performance.

However they admit that it is hard to determine the direction of causality for this relationship. It could be that strong equity performance influences economic growth through wealth effects. That is, the increase in wealth resulting from good equity returns could drive strong GDP growth in future periods through improved consumer confidence and spending.

On the other hand, the observed relationship could signify that investors take future GDP growth into account in valuing equities, meaning that expectations of strong economic growth in the future drive good equity performance in preceding time periods.

O'Neill et al conclude that while it is likely that both factors contribute to the observed relationship between current period equity market returns and expected future GDP growth, the latter is particularly important in emerging markets, where equity returns were found to be particularly sensitive to growth surprises (less wealth is invested in the equity markets in these countries, which means that the impact of the wealth effect is somewhat limited relative to developed economies). This finding has important implications for investors seeking returns through investment in emerging market equities.

What does this mean for investors?

If we are in a new era wherein – due to the changes wrought on the world economy and monetary policy by the 2007-2008 global financial crisis – GDP growth has a greater impact on asset returns, this would seem to bode ill for equity investors. Most economists expect GDP growth to remain sluggish as economies work off the excess debt accumulated in the run up to the crisis.

However, if low growth expectations are already priced in to the markets, as suggested by the substantial risk premium on equities, a continuing period of sluggish economic growth does not necessarily doom investors to poor returns on their equity investments.

Changes to consensus expectations for GDP growth do however appear to exert a significant influence on current period equity market performance. By attending closely to factors which could cause economic growth to deviate from expectations, investors can still achieve strong performance in their equity portfolios in today's low growth environment.

[4] O'Neill, Stupnytska & Wrisdale (2011). Linking GDP Growth and Equity Returns. *GSAM.*

Conclusion

In this paper we explored the widely held view that equity returns are unrelated to GDP growth and concluded that:

— The correlation between current period GDP growth and equity market returns does appear to be unstable over long time horizons. However, this does not mean that there is no relationship between the two variables over shorter time frames within the economic cycle.

— Since the global financial crisis of 2007-2008 there has been a positive correlation between equity performance and current period economic growth, and this seems likely to persist while we remain in the existing low interest rate environment.

— Additionally, while there may be no significant long term relationship between equity returns and current period economic growth, a stable relationship does appear to exist between equity returns and expectations of future GDP growth.

— While this relationship appears to be partly linked to wealth effects (with strong equity returns driving consumption, and thus GDP growth, in future periods), equity markets also appear to be significantly impacted by changes to consensus expectations for future GDP growth.

— Given that consensus GDP growth expectations are already priced in to the equity markets, a sustained period of weak economic growth will not necessarily lead to poor performance in the equity markets (as long as this weak growth is not unexpected).

— Because changes to growth expectations do seem to have a significant impact on equity returns, investors should pay close attention to surprises (on the upside or downside) which are likely to drive market returns.

If you would like to discuss the issues covered in this article further, please contact your Client Director or a member of the UK Strategic Solutions team.

www.schroders.com/ukpensions

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Important Information:

The views and opinions contained herein are those of Keith Wade, Chief Economist and Strategist, Schroders and Anja May, UK Strategic Solutions, and do not necessarily represent Schroder Investment Management North America Inc.'s house views. These views are subject to change.

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