

the renaissance read

September 2010 | Didier Darcet & Michael du Jeu

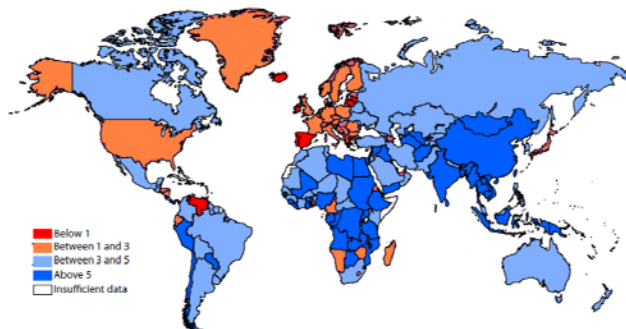
Dedicated Capital Management

GDP growth and equity returns

One of the key questions for global portfolio managers relates to the optimum allocation to risky assets across the economic cycle. "Supply side" economic models assume that, in the long run, asset returns cannot exceed or fall short of the underlying real economy growth rate. GDP growth is therefore scrutinised by investment managers as an essential source of financial value creation.

In a time of great disparity in expected growth between economic regions, as shown below in figure 1, the theoretical question of the correlation between economic growth and asset returns becomes all the more important.

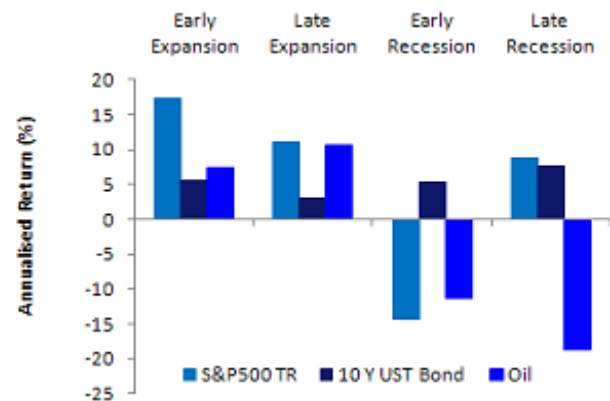
Figure 1. Average Real GDP Growth 2010-2011 (percent)



Source: IMF

But what does asset return mean? The financial market offers a variety of investment vehicles that behave very differently across the economic cycle. Figure 2 shows, for instance, that oil returns follow the economic cycle and that equity returns tend to anticipate economic recovery during late recession phases.

Figure 2. Returns to Asset Classes over the Economic Cycle, 1900- July 2010



Sources: Global Financial Data, 2009 (www.globalfinancialdata.com); Shiller, 2009 (<http://www.econ.yale.edu/~shiller/data.htm>)

Global portfolio managers will therefore analyse GDP growth, not only on a relative basis, comparing one region and country to another, but on an absolute basis as well, to avoid shortfalls in recessionary times. An investment portfolio over-weighted in risky assets such as equities in early recession phases or commodities in late recession phases is likely to suffer significant and prolonged drawdown.

This last point is particularly sensitive today with regards to the US economy. Consensus may not forecast a recession in the year to come but financial markets are pricing-in severe uncertainty about the likelihood of a recession. From 2002 to 2007, US economic recovery was entirely funded by the explosion of the credit market (asset-backed consumer and mortgage loans doubled during the period). This market is now back to its 2000 level with a US\$5tn collapse over the last 2 years in an economy which has grown by 50%. Facing

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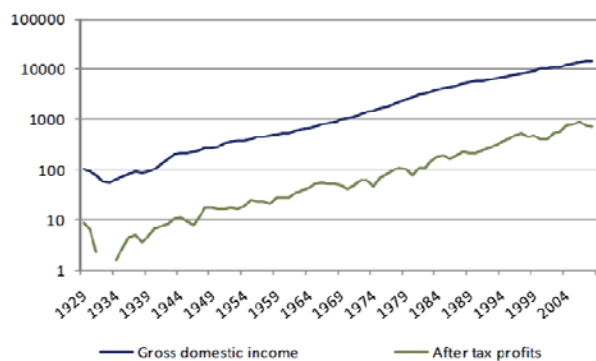
such a high demand for cash, together with a very low cost of capital, gives a clear indication of market expectation of invested capital returns.

The Relationship between GDP Growth and Equity Returns in Supply-Side Models

In theory, GDP growth translates into equity returns in three steps.

The first step sees aggregate corporate earnings grow at the same pace as GDP.

Figure 3. GDP and after-tax corporate profits in the US, 1929-2008



Source: MSCI Barra Research, May 2010, U.S. Department of Commerce, annual data as of 2008.

Note: negative values cannot be represented on a log-scale graph

In the second stage, aggregate earnings should drive EPS (Earnings per Share) growth. However, as economic growth requires more capital injection, corporate earnings benefit to a wider range of shareholders. As Siegel stated in 1998: “if increases in capital and labour inputs go into new corporations, these do not boost the present value of dividends on existing corporations”. Based on Bernstein and Arnott research on very long term US data, this dilution effect on EPS to current investors is estimated to subtract 2% from real GDP growth.

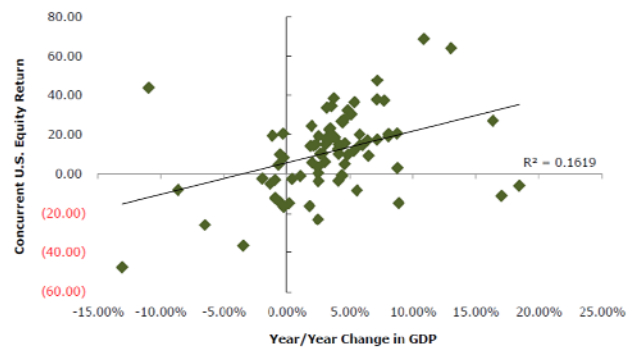
The third stage is the translation of EPS into equity price, which depends on market multiples. Price Earnings Ratios oscillate around a long-term average, which creates uncertainty on equity return outcomes, at least on a short timescale.

History shows however that short timescales can last and that financial markets exhibit prolonged periods of high or low multiples depending on fundamental macro factors such as government spending, demography, new sources of productivity as well as rational or “irrational” exuberance.

Because of cascading uncertainties from corporate earnings to EPS and from EPS to investment returns, empirical correlation between GDP growth and equity returns looks unstable and may even turn negative, as shown by The Brandes Institute research. The coefficient of determination,

or the portion of stockmarket performance explained by GDP changes, is only 0.1619 and the regression line is a poor fit.

Figure 4. Relationship between Real Changes US YoY GDP and Concurrent Equity Returns, 1929-2008



Source: The Brandes Institutes, Factset, as of 31 December 2008

At the end of the day, the lack of observable and stable correlation between GDP growth and equity returns gives little help to asset allocators. We advocate that allocators turn to Siegel’s argument, which stressed that future expected economic growth is de facto already embedded in current equity prices. The correlation can then be analysed dynamically, focusing on structural GDP trends and the relationship with equity trends rather than absolute levels.

A dynamic view of GDP Growth and Equity Returns

In 1898, the Swedish economist Knut Wicksell described in “Interest and Prices” the relationship between market interest rates and a “natural rate” which ensures the equilibrium between supply and demand for goods and services. Market rates oscillate around the economic rate, boosting economic growth when they are set below the equilibrium level and fuelling economic cycles. This “natural rate” is today referenced in the text books as the “structural growth rate” of an economy.

If we assume that equity prices reflect current and anticipated corporate profits and therefore GDP growth, as stated by Siegel, any change on the structural growth rate should modify market anticipation of financial interest rates and consequently equity returns versus government bonds returns.

A proxy for the structural growth rate is often calculated by economists as the 10-year moving average of the annualised growth rate. We believe a shorter time scale such as 4 to 6 years is a better trade-off between economic approximation and instability.

A dynamic approach to the correlation between GDP growth and equity returns would focus on the structural growth rate of the economy, with a view to avoiding equity investments

when the growth rate is trending down but not to try to anticipate the absolute level of asset returns. It is a general scientific rule that reducing a model's expectation is likely to increase its success rate. If the "natural rate" increases, investment managers should increase their allocations to risky assets, i.e. equities and if the "natural rate" decreases, investment managers should turn to government bonds. This strategy assumes that central bankers and bonds holders react to macro fundamentals more than they drive them - an academic view which is still debated.

An allocation strategy, based on natural growth trend, provides attractive risk/return ratios, as shown in figure 5. In particular, the "flight-to-quality" investment discipline, i.e. allocation to bonds when the structural growth rate of the economy is declining, has historically protected investors from large drawdowns experienced by long only equity investors.

The total return of the strategy, over the long run, is higher than equity investments.

The allocation model advocated for bond investments in Q4 2009 and Q1 2010, turned to equities in Q2 2010. If the US economy does not grow in real terms during the present quarter, the structural growth rate which is today close to flat will turn negative and the investment model will switch back to government bonds.

Figure 6. Risk / Returns, 03/1957 – 08/2010

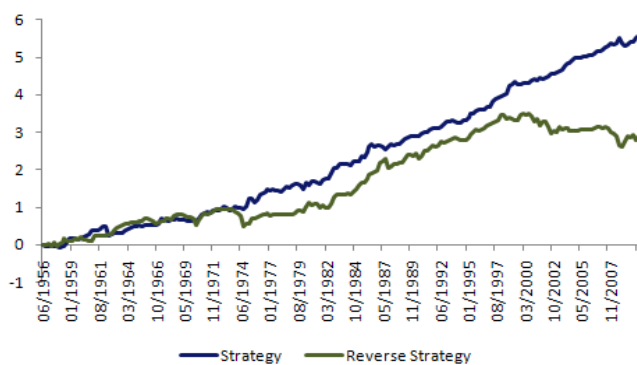
	Annualised Return	Annualised Volatility	Information Ratio	Maximum Drawdown
S&P500 Total Return	9.4	16.2	0.58	-45.8
10Y US Gov Bond	6.7	9.3	0.72	-17.7
Allocation Strategy	10.9	11.8	0.92	-22.2
Reverse Strategy	5.3	14.4	0.37	-59..5

Source: Bloomberg, Authors' calculations

Note:

Return is the continuously compounded return, annualised
Volatility is the quarterly return volatility, annualised
Information ratio is the annualised return divided by the annualised volatility

Figure 5. Returns comparison between the allocation strategy



Source: Bloomberg, Author's calculations

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