Viewpoint

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Stock Markets vs GDP Growth: A Complicated Mixture

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Executive Summary

WestLB Mellon Asset Management's Chief Economist Holger Sandte takes a fresh look at the relationship between GDP growth and stock markets. The relationship remains complicated, he says, because of the interwoven effects of multiple and time-variant factors, which can differ from one country to the next. While accurate economic forecasts are helpful for stock investing, he argues that investors should relinquish any hopes of finding a single economic indicator that will predict future market developments early and reliably. As counterintuitive as it might seem, data suggest that high growth rates do not necessarily correlate with the highest long-term stock market returns. Nevertheless, major stock market movements, he says, may contain valuable information for economic forecasters.

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"If you spend 13 minutes a year trying to predict the economy, you have wasted 10 minutes."

— Peter Lynch, legendary fund manager and stock guru

"The stock market has called nine out of the last five recessions!"

— Paul A. Samuelson, winner of the Nobel Memorial Prize in Economic Sciences in 1970

Does the Economy Drive the Stock Market, ...

We can certainly argue that the economy impacts corporate earnings in terms of revenue and costs. Stock prices generally reflect investor expectations for future corporate earnings and consequently for future economic growth. As a result, sound economic forecasts should help investors make equity market decisions. If, for example, an economic recovery is predicted — preferably with some degree of reliability — then this could signal an appropriate time for investing in stocks.

... or Do Stock Markets Simply Reflect Expectations About the Economy?

Stock pickers like Peter Lynch, whom we have quoted above, think investors are wasting their time with economic analyses and forecasts, since they believe that the stock market has already priced in expectations for the economy. Those who

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invest based on economic forecasts would therefore always be late to the game. Seen from this perspective, the stock market provides useful information about the future development of the economy, not the other way around.

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There is a broad consensus that stock market performance impacts the economy and that this influence has increased over the years. "Confidence effects" constitute one of these influencing factors. Persistent stock market declines can be interpreted as the harbinger of economic slowdown, lowering consumer confidence and the business outlook which, in turn, typically leads to lower consumption and investment spending. The "financing effect" in the corporate sector is another factor. The more companies rely on the stock market for financing, the more they are held back by bear markets.

The "wealth effect" on private consumption has been the most intensively researched. Rising (falling) stock prices can increase (diminish) the sense of financial wealth among private households. Changes in net worth can have an impact on consumption. A bull market can boost and a bear market can depress private consumption — and with it the economy as a whole. As a rule of thumb, a 100 euro decline in the value of stock holdings decreases the private consumption in Germany by 1 to 2 euros.[1] The elasticity of consumption with respect to wealth is higher in countries like the U.S., where stocks figure more prominently in investor asset allocation and where stock ownership is also spread broadly across income classes.

The equity markets have long played a role in economic forecasting. The Conference Board Leading Economic Index (LEI) looks at ten indicators, one of which is the S&P 500, albeit with a small weighting. The OECD's leading indicators for the U.S., the UK, Sweden, Switzerland and Spain include equity indexes; while those for Germany, Italy and Austria do not, as some national stock markets have proven less valuable for forecasting economic turning points than others.

Let the Numbers Speak for Themselves

So does the economy run ahead of the stock market, or does the stock market anticipate economic developments? Both outcomes are conceivable; the question can only be clarified empirically based on data and facts. Let us therefore start by looking at a number of charts.

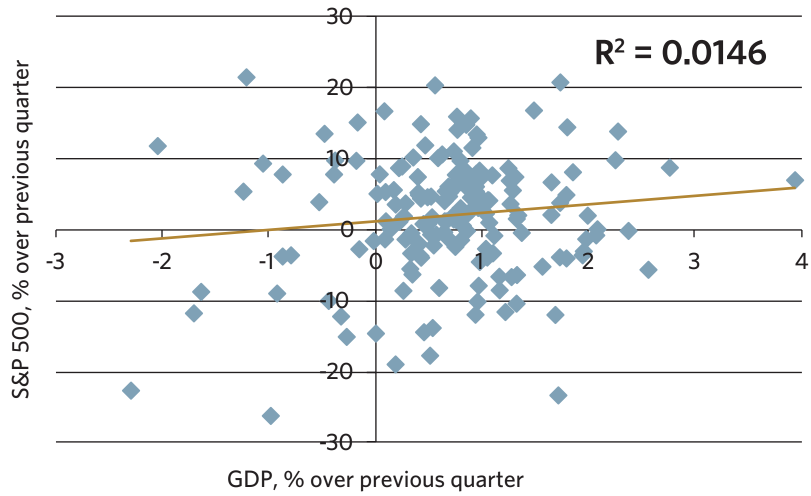
Over longer time periods, the statistical correlation between the quarterly change of real U.S. GDP and the S&P 500 is virtually zero (Exhibit 1). The correlations between the Euro Stoxx 50 and eurozone GDP since 1999, on the one hand, and between the DAX and German GDP since 1991, on the other, are similarly small.[2]

1 Deutsche Bundesbank Monthly Report, March 2003, p. 40.

2 WestLB Mellon Asset Management calculations.

Since stock market performance is driven mainly by expectations, you might suspect that changes in market performance are more closely related to future GDP growth.

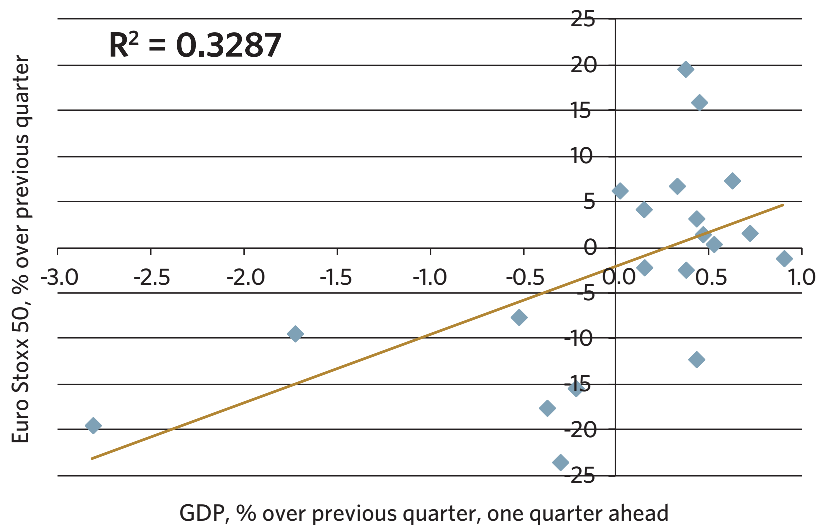
Exhibit 1 – U.S. GDP and S&P 500, 1970 to 2012



Source: EcoWin, as of June 2012.

Since stock market performance is driven mainly by expectations, you might suspect that changes in market performance are more closely related to future GDP growth. In fact, stock market movements in a given quarter are somewhat more correlated with GDP developments in the following quarter, but even this relationship is slight. Still, when looking only at the years 2007 to 2012, we find a correlation of 0.28 for the U.S., 0.33 for the eurozone (Exhibit 2) and 0.34 for Germany.[3]

Exhibit 2 – Eurozone GDP and Euro Stoxx 50, 2007 – 2012



Source: EcoWin, as of June 2012.

Medium- to long-term investors, however, must look beyond quarterly correlations to multiyear trends and cycles.

3 WestLB Mellon Asset Management calculations.

In the U.S., private consumption accounts for about 70% of GDP. The strong relationship between consumer confidence and the stock market is therefore hardly surprising. Since the mid-1990s, there hasn't been a single prolonged period in the U.S. during which consumer confidence and the S&P 500 have moved in opposite directions. In other words, without positive consumer confidence, there can be no rising market in the world's leading stock exchange.[4] There is no evidence that one factor is systematically running ahead of the other (Exhibit 3).

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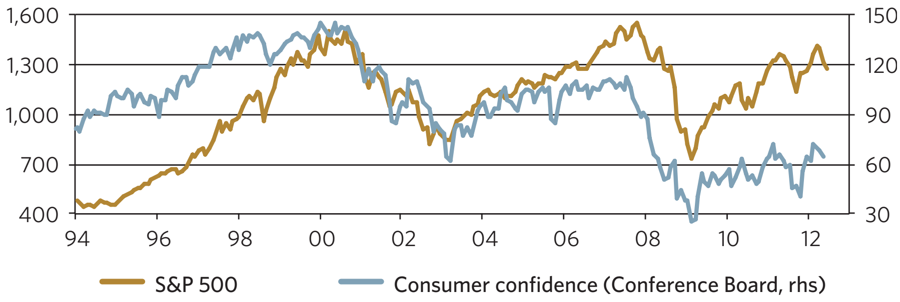
Exhibit 3 – U.S. Equity Market and Consumer Confidence in Tandem



Source: EcoWin, June 2012.

For Germany, the most important leading economic indicator is the Ifo Business Climate Index, which tracks current conditions as well as expectations. At economic inflection points, expectations typically lead current conditions by approximately three months.

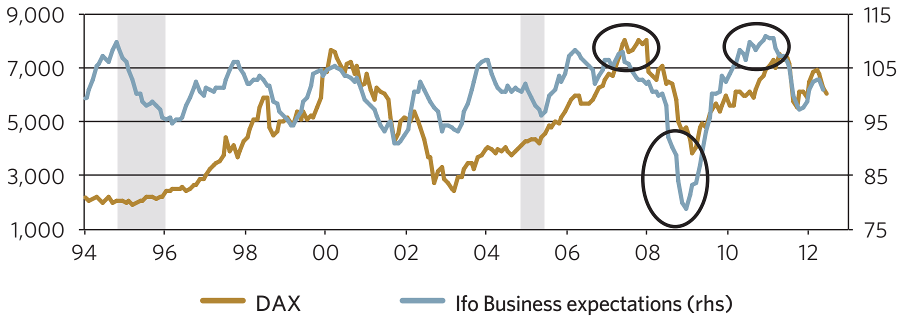
Exhibit 4 shows that the DAX does not normally climb when Ifo expectations are falling.[5] There have been two exceptions to this rule since the mid-1990s, during which expectations fell over 15 and 7 months, respectively, while the DAX continued to climb. These periods are highlighted in grey in Exhibit 4.

While Ifo expectations have not consistently led the DAX (or vice versa) over the entire period covered in Exhibit 4, they have been doing so since 2007. The stock market plunge that began in early 2008 was preceded by a decline in Ifo expectations, which had fallen by six points since May 2007. When the stock market trended higher in March 2009, this movement had already been anticipated in the Ifo expectations numbers from January 2009 (even though it wasn't clear at the time that the small increase in Ifo expectations after a 30-point setback was really the turning point). At the same time, the decline in Ifo expectations starting in March 2011 heralded the decline of the DAX during the following summer.

4 The relationship between the widely followed ISM Manufacturing Index and the S&P 500 is less close. Our research shows there have been five longer spells since the mid-1990s during which the indexes moved in opposite directions.

5 The picture does not change in any meaningful way when we look at the Ifo Business Climate Index itself, which includes both expectations and current conditions.

Exhibit 4 – German Stock Market and Ifo Expectations



Source: EcoWin, June 2012.

According to an IMF study[6] from 2002, two thirds of all recessions remain undetected by consensus forecasts until April of the year in which they actually occur.

Wanted: A Reliable and Early Indicator of Recessions

Economic forecasters have always lacked good leading indicators for a recession. On average, forecasters identify recessions too late and inaccurately estimate their dimensions, as was the case during the Great Recession of 2008/09. According to an IMF study[6] from 2002, two-thirds of all recessions remain undetected by consensus forecasts until April of the year in which they actually occur. Economic pundits would therefore clearly benefit if they were able to extract useful information from stock market movements.

The severe market decline in 2008 has rekindled research on this topic. When Paul Samuelson jeered about the forecasting "qualifications" of stock markets as an indicator for recessions in 1966 (see our quote above), he referred to the fact that the financial markets tend to overstate rather than accurately reflect (expectations about) the economic cycle. Not every severe sell-off forecasts a recession, not every bull market a recovery. Still, the relationship is probably closer today than it was back in the 1960s. A broad-based study[7] by U.S. economist Robert Barro produced interesting results: the likelihood of a depression (defined as a decline of real GDP by at least 10%) increases by 20% in a stock market crash (defined as an index decline of at least 25%). A depression is highly unlikely in the absence of a stock market crash. The sample consisted of 209 stock market crashes and 59 depressions during peace times. The good news: 80% of all stock market crashes are not followed by a depression. We witnessed the most recent example of this in 2008/09 when the economy fell only into a recession, albeit a deep one in most industrialized countries. The massive monetary and fiscal policy easing in numerous industrial countries, which dragged the world economy back from the brink of depression, was likely the most important factor.

6 Grace Juhn and Prakash Loungani, "Further Cross-country Evidence on the Accuracy of the Private Sector's Output Forecasts," IMF staff paper, vol. 49, no. 1, 2002.
7 Robert J. Barro and José F. Ursúa, "Stock Market Crashes and Depressions," NBER Working Paper No. 14760, February 2009.

We believe investors should not invest in stocks purely based on economic cycles, not least because economic forecasts can be wrong. If valuations are attractive, it makes sense to invest in the equity markets of slowly growing economies.

"Growth vs. Value" on the Macroeconomic Level

Economic growth is important for corporate earnings and earnings expectations drive stock prices. A "follow the growth" approach, i.e., investing in stock markets where economic growth is strong, seems the obvious choice for investors. A study[8] of 83 countries that looked at stock market performance and GDP growth between 1900 and 2009 as well as during shorter stretches showed that investments in "high-growth economies" can disappoint. Researchers found that investments in the stock markets of strongly growing countries yield the same or even lower returns than exposures in countries with medium or slow growth. Moreover, the volatility of returns is highest in those countries showing the strongest and weakest growth.

"Buying growth markets fails to outperform because markets anticipate economic growth," the authors of the study concluded. Investors have achieved higher long-term returns by investing in countries that recently exhibited slow growth. One could argue this is because they avoid investing into bubbles and the drawdowns that can result when the bubbles burst.

Conclusion

Equity investors are helped by sound macroeconomic forecasts because fundamental stock market trends are influenced by growth trends and related cycles. However, most so-called "leading" indicators do not run ahead of stock markets; rather, they move in tandem with or lag stock markets. Macroeconomic news flow can still be negative when stock markets have already reversed and are trending higher. Economic researchers should include massive moves of major equity indexes in their economic forecasts; they can be especially useful in forecasting recessions.

Past economic growth is not a reliable indicator of future stock gains. Accurately forecasting future economic growth might help but those forecasts are difficult to get right. We believe investors should not invest in stocks purely based on economic cycles, not least because economic forecasts can be wrong. If valuations are attractive, it makes sense to invest in the equity markets of slowly growing economies.

8 Elroy Dimson, Paul Marsh, and Mike Staunton, "Economic Growth," Credit Suisse Global Investment Returns Yearbook, 2010.

Index Definitions

S&P 500 Index is a free-float capitalization-weighted index based on the common stock prices of 500 American companies. It is one of the most commonly followed equity indices and many consider it the best representation of the market and a bellwether for the U.S. economy.

The **ISM Manufacturing Index** is based on surveys of more than 300 manufacturing firms by the Institute of Supply Management. The ISM Manufacturing Index monitors employment, production inventories, new orders and supplier deliveries. A composite diffusion index is created that monitors conditions in national manufacturing based on the data from these surveys.

The **Conference Board Leading Economic Index (LEI)** is an American economic leading indicator intended to forecast future economic activity. It is calculated by The Conference Board, a non-governmental organization, which determines the value of the index from the values of ten key variables. These variables have historically turned downward before a recession and upward before an expansion. The single index value composed from these ten variables has generally proved capable of predicting recessions over the past 50 years, but in most cases it has been known to falsely predict recessions which did not occur.

EuroStoxx 50 is Europe's leading blue-chip index for the eurozone, providing a blue-chip representation of supersector leaders in the eurozone. The index covers 50 stocks from 12 eurozone countries: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain.

DAX is a stock index that represents 30 of the largest and most liquid German companies that trade on the Frankfurt Exchange.

Ifo Business Climate Index is a closely followed leading indicator for economic activity in Germany prepared by the Ifo Institute for Economic Research in Munich.

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