

How are PE returns correlated with the cycle?

Private equity and venture capital (hereafter PE) is, inherently, a long-term asset class. General Partners (GPs) typically invest in portfolio companies for three to five years while PE funds usually have a lifespan of around 10 years. This long-term perspective means that PE returns are often thought to be less correlated with the economic cycle than some other asset classes. At the same time, we should expect some correlation as when the economy is performing strongly that should feed through to revenues, profits, and valuations. This note examines the historical correlation between UK PE returns and the macroeconomic cycle.

Comparing growth and returns over different time horizons

The BVCA collects data from its members each year on investment activity and fund performance. Overall, the performance database now covers over 470 independent, UK-managed funds from the period 1986 to 2010. Over the same period, the UK economy has experienced substantial growth, with national income – gross domestic product (GDP) – rising by around 70%.

In previous *Research Notes*, we have compared the performance of PE funds with the FTSE All-Share in the context of benchmarking PE against public market returns. One issue when examining the correlation of PE returns with macroeconomic growth is the appropriate form of comparison. Normally, we focus on since-inception measures of PE returns; shorter-term backward-looking measures can sometimes give a misleading picture of the fund’s overall return. However, because we want to compare the relationship between GDP growth and PE returns over different cycles and periods, a since-inception return is not the appropriate measure. Since we are looking at the profile of GDP growth within a fixed window of three or five years – a typical medium-term horizon – it is also appropriate to consider PE returns over the same period. This analysis therefore focuses on backward-looking measures of returns.

Table 1 shows correlations between GDP growth and PE returns for different periods of length. In each case, growth over the period is calculated for each overlapping three- or five- year period. This means that the series will exhibit autocorrelation by construction – as we move from 1995-98 to 1996-99, there will be overlap between the time periods. However, the results in Table 1 were broadly unchanged when only non-overlapping periods were considered, suggesting that the autocorrelation in both series is largely unrelated.

It turns out that the strongest correlation between GDP growth and PE returns is over a relatively short period of three years (Table 1). This is unsurprising, as over such a short timeframe, swings in sentiment or activity are likely to have a strong influence on valuations, which in turn probably dominate estimates of returns over such short time horizons.

Table 1: Correlations of GDP growth and PE returns

	Three-year Returns*	Five-year Returns*
GDP	0.599	0.360
Consumption	0.396	0.106
Investment (incl. stocks)	0.681	0.490
Government Spending	-0.288	-0.253
Exports	0.653	0.557
Imports	0.603	0.351

Sample: 1986-2010. Source: BVCA.

* Returns calculated as point-to-point return for each year up to 2010, GDP growth calculated on annualized basis across same period.

In terms of the expenditure components of GDP, there is a negative correlation between PE returns and government spending at short horizons, although it is not especially pronounced. More striking is the stronger correlation of PE returns with investment and trade (exports and imports) than we observe for consumption – that is consistent with PE funds being invested in relatively trade- and capital intensive- industries. This suggests that PE does have an important role to play in the ongoing rebalancing of the UK economy.

Comparing the volatility of growth and returns

While correlations between first moments – growth rates and returns – are interesting, examining the relationship between the variation in the two series is also useful. It is often said that PE returns are more insulated than other asset classes from the impact of cyclical fluctuations, in which case the volatility of PE returns should only be weakly related to volatility in GDP growth. Table 2 presents correlation coefficients for these volatility measures, again calculated over different window lengths.

The striking result is that, while there is some evidence of correlation between the variance of the two series over a three-year window, correlations are much less pronounced when volatilities are compared over five-year periods. This suggests that, although there is a link between volatility in the macroeconomy and PE returns over short time horizons, that link quickly wanes over longer periods. But given that the correlation between growth and returns over five years (Table 1) is somewhat closer to the three-year results, this suggests that PE does do a good job of smoothing through the volatility in the macroeconomy over longer time periods. However, correlations do not necessarily imply a causal relationship: formal Granger tests on the data behind Table 2 found no evidence of causality from the volatility of the economic cycle to the variance in PE returns, or vice versa.

Table 2: Correlations of variance in growth and returns

	Three-year Period*	Five-year Period*
GDP	0.369	-0.227
Consumption	-0.024	-0.314
Investment (incl. stocks)	0.378	-0.186
Government Spending	-0.215	0.270
Exports	0.781	0.018
Imports	0.593	-0.212

Sample: 1986-2010. Source: BVCA.

* Correlations of rolling overlapping variances for GDP growth and PE returns.

Overall, this analysis supports the premise that private equity and venture capital can offer investors some insulation from the economic cycle. At the same time, macroeconomic developments can have an impact particularly over shorter time horizons; the recession hit PE-backed businesses alongside other firms and asset classes. But over longer time periods, the relationship between growth and PE returns is weaker, particularly when we examine the volatility of returns.

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