MEASURING AN IDEAS BASED ECONOMY: AN ANALYSIS OF TOTAL FACTOR PRODUCTIVITY
Charles Foote (Jeffery Coles, Jason Sandvik)
Department of Finance

This study presents a new empirical assessment of the ability of Total Factor Productivity (TFP) to measure the effects of innovation in aggregate and across different industries. Typically, TFP is estimated as a scale parameter of a production function fit to output and input data from industries or firms. TFP is understood to measure changes in productivity, such as those arising from technical change and innovation. Accordingly, the standard hypothesis is that economic growth should be related to changes in TFP. The prior evidence on whether TFP is associated with economic growth is mixed and inconclusive.

The contribution of this study is to examine the relation between TFP and both stock and accounting performance. If technological progress is reflected in TFP, and if change in TFP is associated with current or future improvements in firm profitability, then changes in TFP should be captured at some point in accounting performance and immediately, to the extent markets are reasonably efficient, in stock performance.

My empirical analysis detects no reliable positive relation between changes in estimated TFP and firm performance. Either technical change has had minimal effects on productivity or standard measures of TFP fail to capture such changes in productivity.