Unexpected Inflation, Firm Characteristics and Equity Returns in a New-Keynesian Model

Chao Wei

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Abstract

We construct a general equilibrium New-Keynesian model in which firms differ in characteristics such as size, book value, sensitivity to market demand and degree of price stickiness. This establishes an explicit economic relation between firm level characteristics and the relationship between unexpected inflation and equity returns. The model provides an internally consistent framework for asset valuation in a standard New-Keynesian model involving a monetary policy rule. A key assumption is that the central bank adjusts the short-term nominal interest rates so that the targeted ex post real interest rate rises when inflation exceeds its target value. In our model unexpected inflation is driven by demand-pull and cost-push factors represented by the aggregate demand and supply shocks. Under a given monetary policy rule, the effect of these two fundamental shocks on the dividends, discount rates, and equity returns varies across different firms based on their size, relative importance of growth option, sensitivity to market demand and price-setting mechanism.

Our findings can be summarized as follows. First, we find that if the public believes that inflation will induce strong deflationary countermeasures by the central bank, inflation news is bad for the stock market, consistent with the post-war U.S. data. Second, we show that with strong interest rate effects, equity returns of firms whose assets are dominated by growth option—in our model, firms of smaller size—are more negatively correlated with unexpected inflation. Third, we find that equity returns of growth firms, firms with smaller earnings-to-price and book-to-market ratios, respond more negatively to unexpected inflation. Fourth, our model is capable of explaining the phenomenon that bad news on the aggregate demand is sometimes
good for the stock markets by dissecting the information on the interest rate and dividend bundled in the aggregate demand news. Our results appear consistent with the limited existing empirical evidence.