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DISCUSSION

SUSAN M. WACHTER*: Myron J. Gordon's paper has an ambitious purpose. It attempts to explain the effects of inflation and real factors on the performance of the U.S. stock market, over the years 1960 to 1980. In doing this, it addresses the empirical finding of the absence of a positive short-run correlation between inflation and a share's holding period rate of return in the U.S.[1]

There is no widely accepted explanation for the negative correlation observed between stock market values and inflation (anticipated and unanticipated). However, plausible explanations, some of them competing and some complementary, have been offered. Gordon's paper attempts to evaluate several of the more important of these. That he does not successfully resolve the controversies raised does not mean that he has not furthered the debate.

Indeed, he has, with two contributions. First, he has set out a valuation equation for Tobin's q, the ratio of the market value of equity to its replacement cost, which is sufficiently general and inclusive that it can be used to evaluate a number of theories. Second, he has amassed the data on the many terms that go into the valuation equation for 3 bench mark years of 1960, 1967 and 1980. The valuation equation and 3 data points serve as an organizing schema to evaluate hypotheses that may account for the relationship between inflation and stock values over this period.

With these, he is able to show the following: First, Feldstein's [3] explanation for the negative relationship, which relies on the use of historical cost accounting for tax purposes and the taxation of nominal capital gains, can only account for a very small portion of the decline in the ratio of the market value of equity to its replacement cost. Indeed, expanding Feldstein's equation to include retention

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[1] In a comprehensive study, Gultekin [6] finds a lack of positive relationship between inflation and stock returns in the majority of twenty-six countries investigated.

and leverage, which Feldstein does not do, yields an increase of q.[2] Second, the Modigliani and Cohn [7] explanation, which relies on investor irrationality, explains too much of a decline in stock values. Having rejected these two sets of arguments, Gordon looks elsewhere.

What explanations do the data support? Gordon's data indicate that real profits have declined from 1960 to 1980. Thus, Gordon agrees with others, including Fama [2] and Friend and Hasbrouck [4], that stock values decreased in this period, in part, because of the fall of real earnings. In this case, it is wrong to ascribe the cause of the stock market decline to inflation. Inflation, real output, and earning declines arose due to exogenous increases in oil and food prices which were then ratified by an endogenous increase in the rate of monetary expansion.

In addition, Gordon finds that there was an increase in k, the required yield. There are a plethora of explanations for such an increase. First, Gordon shows that the personal income tax consequences of inflation may be a sufficient explanation for the rise in k. As Gordon indicates, if it is assumed that inflation has not changed the required after-tax yield on stocks, then the pre-tax yield must increase. Others have argued that this possibility should be ruled out, because, if it were so, it would presumably also affect the risk free rate of return; and the evidence of other studies shows that an increase in the expected rate of inflation either leaves the before-tax risk free rate of return unchanged or reduced. Nonetheless, there may have been an opposing negative impact on short-term yields. This hypothetical counterbalancing effect could have resulted from an increased demand for short-term securities, due to their advantageous inflation-hedging characteristics.

If personal income tax consequences cannot explain the rise in k, there are numerous other alternatives. A second explanation is that there has been an increase in the required yield due to an increase in uncertainty. This argument, which has been made by Friend and Hasbrouck, can be interpreted as relying on policy generated output and earnings variations and/or relative price changes that have been correlated with inflation in the U.S., over this period. Again, it should be noted that higher rates of inflation are not necessarily accompanied by greater output fluctuations or relative price changes. There is no theoretical foundation for such arguments to be generally valid as explanations for an increase in k. Third, it is always possible to appeal to Modigliani-Cohn irrationality which may explain some, if not all, of the rise in k. Finally, there may be numerous other factors, some of which are listed by Gordon, that have caused an increase in k over this historical period, and that are not causally related to inflation.

In sum, the kind of analysis offered here does not answer why k has increased, nor, if there is a resurgence of inflation, whether stock values will react negatively. The paper does succeed in giving us a schema that shows a plethora of viable hypotheses that may explain the positive correlation between k and inflation in this period.

[2] Other studies have found that the net effects on profits of historical cost accounting, the deductibility of nominal interest payments, and more liberal depreciation have been negligible. See Fama [2] and Gonedes [5].

The factors involved in determining the longer run relationship between inflation and stock prices still need to be elucidated, especially the impact of anticipated and unanticipated inflation on required rates of return, within a portfolio theory framework.[3] However, Gordon's work has helped to eliminate those hypotheses that cannot successfully explain the relationship between inflation and the value of corporate equity. Unfortunately, U.S. monetary policy may yet produce sufficient data for testing still viable hypotheses.

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[3] See Bodie [1], which examines the equilibrium structure of capital market rates when risky assets are imperfect inflation hedges. Questions remain on the relationship between the cause of inflation and the required return on equity. The negative impact on k of an increase in inflation risk (due to any inflation hedging characteristics) may be outweighed by the positive impact of greater uncertainty over economic profits.