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Inflation, Uncertainty and Investment: Discussion
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DISCUSSION

ALAN J. AUERBACH*: This paper considers the impact of inflation and uncertainty on the relative desirability of short-lived and long-lived assets. It is natural to consider these effects together, since there is some evidence, if not a good explanation for it, that the inflation rate becomes more variable as it becomes higher. Thus, we must consider both of the effects studied in this paper to be associated with the general process of inflation.

The authors consider a firm choosing between mutually exclusive technologies to produce a given output stream. The problem is one of dynamic stochastic programming, as the decision at each date is made to maximize value assuming the same is done at each date in the future. Under certainty, each future decision may be ascertained immediately. If stationarity is assumed as well, then each of these decisions will be the same as the current one, collapsing the problem into a once-and-for-all choice of asset durability. As shown in Auerbach, the increase in the required before-tax rate of return induced by an increase in the rate of inflation *declines* monotonically with asset life under a tax system such as exists in the U.S. Yet, Baldwin and Ruback find a nonmonotonicity in the effect on the demand price for assets of different durabilities.

Despite the apparent contradiction, none exists, since the questions are different. Although I find nothing wrong with the present analysis, one must be careful not to conclude that the standard of equal impact on demand prices is a desirable one for the tax system. Indeed, as inflation rises and demand prices go down (with the implicit rise in the required before-tax rates of return on both assets) one can make an efficiency argument for a greater decline in the price of the longer-lived asset, since this would result if all assets were required to yield the same before-tax return (Auerbach).

The second part of the paper shows that, with increased uncertainty, short-lived assets become relatively more valuable, *ceteris paribus*. A simple way of seeing why this is so is to imagine that short-lived assets last for S years and long-lived assets for $2S$ years. Then, initially, one may choose either to use one long-lived or two short-lived assets for the first $2S$ years; these two programs provide equal flexibility in terms of changing technology in the future. But, in addition, one has the option of switching from the short-lived technology after S years. This option has value as long as valuable information is revealed between dates 0 and S. The more uncertain the economic climate, the more valuable the information and the opportunity to act on it sooner.

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This is an intuitively appealing result. Unfortunately (not for the authors), the government is capable of introducing economic uncertainty in many ways. One of particular current interest is prospective changes in the tax regime. It would be interesting to know how firms react to changes in the degree of such uncertainty.

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