

THEORY AHEAD OF BUSINESS CYCLE MEASUREMENT A COMMENT ON PRESCOTT

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Ed Prescott surveys a line of business-cycle research which is both positive and important. Even if one has reservations about the predominance of real disturbances, it is still possible to appreciate the general methodological approach.

The basic premise of this paper, and of Kydland and Prescott (1982), is that it is a mistake to analyze separately business cycles and trend economic growth. This separation has been conventional since Keynes and was thought to be a useful simplifying device. Kydland and Prescott argue that the simplification is not only wrong in principle, but that in ignoring trend growth patterns, macroeconomists have also been throwing out information which would be very useful in identifying and estimating key business-cycle parameters. Throwing out this information can lead to the kind of identification problems illustrated by Sargent's (1976) result on the observational equivalence of Keynesian and classical models of the monetary transmission mechanism. By re-emphasizing the relationship between factors which govern growth patterns and factors which determine the transmission of productivity disturbances, Kydland and Prescott are able to draw on a large body of microeconomic evidence pertaining to the parameters of growth models. In some loose sense, Kydland and Prescott's framework involves a correspondence principle. The parameter values used to explain business cycle fluctuations must also be consistent with the growth observations.

Prescott's approach to quantification involves bringing to bear information from many difference sources, more than would be possible with any standard estimation technique. In this sense, his approach involves using "full information" quantification. The drawback to Prescott's methods is that they are not completely algorithmic and therefore not useful for formal hypothesis testing. It is possible, in principal, to apply standard estimation techniques to his model [see Altug (1983)], though it would be extremely difficult to formally incorporate all the information sources

Prescott uses. Prescott's method of estimating the parameters is clearly sufficient for producing a counterexample. He shows that it is possible to explain certain characteristics of business cycles with a growth model driven solely by productivity disturbances. But whether such an approach is suitable for policy analysis is not as clear.

The fact that Prescott (and Kydland and Prescott) succeeds in fitting his model to United States data is not likely to convince skeptics. It would seem natural to try to apply the model to other countries, especially ones with different growth experiences. (If one is willing to believe that the United States economy can be approximated well by an Arrow-Debreu economy, then one should also be willing to believe that the same is possible for most other countries.) Suppose one finds that the elasticities of substitution and the share parameters differ across countries. Also, countries may have different average discount rates because of differing age structures or life expectancies. If there are such structural differences in the growth-model parameters, then Prescott's model can be used to generate explicit predictions about how business cycles will differ across countries. These predictions can be checked against the data. There are many complications, but if productivity shocks are indeed the dominant source of disturbances in most countries, then this exercise may yield interesting results. (This again involves the "correspondence principle" I spoke of earlier.) A similar exercise would involve looking at different tax regimes within a given country.

The basic methodological approach expositied by Prescott should be relevant to models in which monetary disturbances play a greater role. My own view is that monetary disturbances have been quite important during some periods, notably the shift to the Volcker regime and the shift to the Thatcher regime. The early empirical results of the real business cycle research Prescott discusses are certainly provocative. It has been said that a brilliant theory is one which at first seems ridiculous, and later seems obvious. There may be many who feel that this research has already passed the first test. But they should recognize the definite possibility that it may someday pass the second test as well.

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