Discussant [Commenting on: Credit Ratings, Bond Defaults and Municipal Borrowing Costs: A New England Study]

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Recommended Citation
Chairman Papke: Thank you, Dan. Our last discussant is Dr. Roy W. Bahl, Associate Professor of Economics and Director, Metropolitan Research Center, Syracuse University.

Dr. Bahl:

**DISCUSSANT**

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Mr. Rubinfeld's analysis purports to deal with three aspects of the important issues of municipal bond ratings: the determinants of rating differential, the "independent" effects of rating on borrowing cost, and the ability of the major agencies' rating schemes to predict default. Mr. Rubinfeld has taken a careful approach to this important problem, and his statistical methodology leads to some insights that other writers on this subject have not had. I will comment, in turn, on the first two aspects of the question treated, with primary emphasis on the first — the credit rating process.

**Credit Rating Processes**

The identification and measurement of the factors which determine the inherent safety of an investment in a community, and therefore the bond rating of that community is a difficult task. One reason for this difficulty stems from differences among the agencies in their view of the rating process, and from the large role which is played by the judgement of the individual analyst in determining the rating. This is further complicated by the divergence of emphasis by different analysts even within the same agency. Still, there is a common body of data which is examined by the analysts within an agency, and what Rubinfeld intends to do is uncover a systematic relationship between
these measurable characteristics and the bond rating eventually derived.

With respect to the credit rating process, Rubinfeld's major contribution is methodological. He evaluates the suitability of previous techniques which have been used to relate credit rating differences to variations in measurable community characteristics, i.e., discriminant analysis and regression analysis where the dependent variables take on values of 1, 2, 3, and 4 to represent ratings of AAA, AA, A, and BBB respectively. He argues, correctly, that the latter approach involves an arbitrary assumption that the difference, for example, between AA and A is the same as that between A and BBB. He offers an alternative approach whereby such differences are empirically determined. This approach forms the basis of his model to explain rating differences, and plays a role in measuring the "independent" effects of ratings on borrowing costs.

The statistical model used in this paper is a positive model (i.e., what actually determines bond ratings) rather than a normative model (i.e., what ought to determine bond ratings). Specifically, it is not an objective of the Rubinfeld study to produce a conceptual model. Hence, the independent variables used here are those which are easily measured and therefore readily available to the rating agencies. The findings here are not markedly different from those of earlier studies, i.e., communities which have higher bond ratings have lower levels of debt and higher levels of income and wealth.

Other factors important to evaluating the creditworthiness of local governments do not appear here, and it might be argued that these factors do play a role in the determination of the rating. For instance, there is no consideration in this model of economic base factors, though such a consideration may well be the single most important determinant of the probability of default, and therefore of the credit rating level. If the rating is indeed a probability of default, some evaluation of the strength of the economic base of the community — particularly in periods of severe economic recession — would seem essential. Moreover, these factors do play some role in the actual determination of the rating to the extent they are described in the prospectus submitted by the community. Though it would seem possible to quantify such factors in a comparative fashion, in practice, the judgements about the economic strength of the com-


2 For a more detailed discussion of these factors see: Roy W. Bahl, "Measuring the Creditworthiness of State and Local Governments: Municipal Bond Ratings," Proceedings of the Sixty-Fourth Annual Conference of the National Tax Association (Columbus, Ohio, 1971).
munity are usually made in a less objective fashion. A second set of factors, not included here consists of the fiscal characteristics of the community, e.g., the revenue and expenditure structures of the community and their dependence on external aid. It would seem reasonable to argue that these factors do play some role in the determination of the bond rating. If fiscal and economic base characteristics do play a role in the credit evaluation process, then the large unexplained component in Rubinfeld's estimating equation is not surprising.

**Ratings and Borrowing Costs**

While the inverse relationship between credit ratings and borrowing costs is generally acknowledged, the argument that a lowering of the credit rating raises borrowing costs is less clear. The findings of previous studies provide evidence that such a relationship may exist, but the findings are always clouded by the possibility that rating changes are partially influenced by the market evaluation of a community's credit. To the extent such two-way causation does exist, past empirical studies have not found a truly independent effect of ratings on interest costs.

Rubinfeld offers a statistical model which differs from those used in previous studies in that his estimating equation is an attempt to simulate roughly the process by which the lowest competitive bid for all underwriting bids submitted determines the new offering yields. Accordingly, his dependent variable is net interest cost, and one of his independent variables is a rating dummy variable. The net regression between these variables does indicate an independent effect of ratings on interest, if it can be assumed that the direction of causation runs from credit ratings to market performance. If such an assumption cannot be made, we remain in the position of now knowing the "independent" effect of ratings on market performance.

Still, Rubinfeld's work, in dealing with the problem of empirically estimating the "spread" between different rating classes, and in developing a market-oriented model which attempts to measure the credit rating-interest cost relationship, has markedly extended our knowledge in this important area.

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