CAPITAL ASSET VALUATION UNDER RISK AVERSION: DISCUSSION

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Professor Vasavada has made a nice contribution to the literature in this paper. He has borrowed some insights from the finance literature and applied them to one of our most interesting puzzles today - that of what factors are important in determining agricultural land prices. Since this issue is not only an intriguing one from an academic point of view but also one of great importance to the many farmers who are facing financial stress today, it is encouraging to see so many agricultural economists working to solve this puzzle. Professor Vasavada is an able econometrician and has obviously studied the finance literature on this topic thoroughly. I see my task in discussing this paper, therefore, as basically one of making a few observations as to the appropriateness of the data used and the intuitive interpretation of the results.

I have two questions about the data used for this study. First, Professor Vasavada uses aggregate net farm income as a proxy for the residual return to equity capital, or the expected dividend accruing to farmland and buildings in any year. Since equity capital is not the only residual claimant to net farm income (the others, of course, being management, unpaid labor and risk), the use of net farm income is probably an overestimate of the expected dividend variable in equations 9 and 10 in the paper. Alston (1986) addresses this difficulty by proposing reported cash rents as a more accurate proxy for the dividend to farmland in any year. The advantage of using cash rents is twofold: 1) the residual claimant problem is eliminated by the use of cash rents, and 2) the cash rents reported by USDA are actually farmers' expectations of what cash rents will be in their area for the coming season. Thus, the cash rents capture the expectation of dividends more fully than would an ex post measure. The problem of bias in the proxy for expected dividends is particularly important in this model because the parameter estimate, θ, is meaningful in and of itself as a measure of relative risk aversion. If the model were to be used only for prediction, then the bias would probably not be so troublesome. It would be interesting to see how θ would change in the estimation if cash rents were used in place of net farm income.

The second question regarding the data is the choice of time periods used for estimation. The data were divided into two equal time periods, from 1953 to 1967 and from 1968 to 1983 in a second estimation of the model. This division seems to me to be a bit arbitrary. It would seem more appropriate to choose time periods corresponding to significant changes in the land price series. For example, Figure 1 shows that farm real estate values began to increase significantly in the early 1970's. This might suggest choice of the later time period beginning in 1972. It would also be interesting if the model were estimated for additional years beyond 1983 to capture the recent downturn in agricultural land prices.

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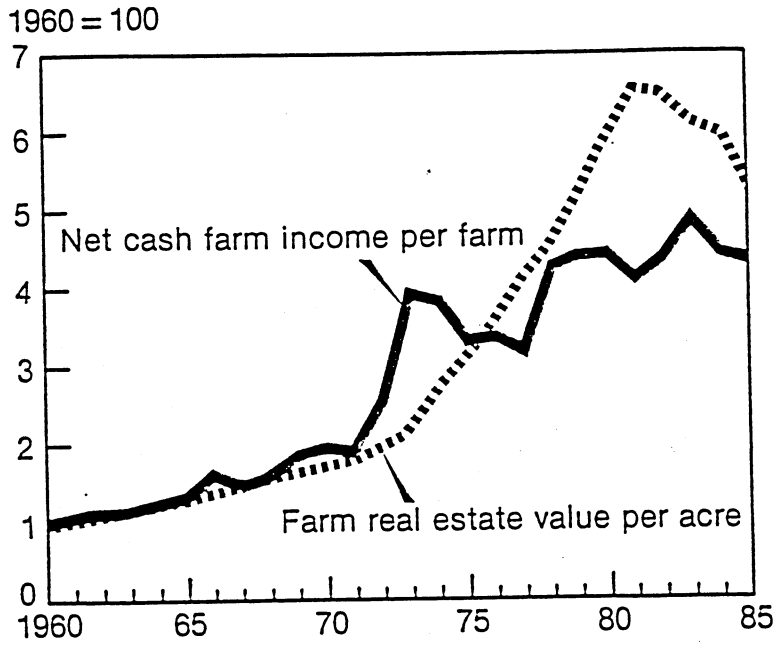
Figure 1. Real Cash Farm Income and Farm Real Estate Values 1960 to 1985



Source: USDA

The paper reports two very interesting results which deserve further discussion. The first result follows from the division of the data into two time periods for reestimation of the model parameters. The measure of average, aggregate relative risk aversion, model parameter θ, turns out to be quite different in the two time periods. A value of $\theta = 7.519$ is reported for the 1953 to 1967 time period and $\theta = 4.437$ is reported for the 1968 to 1983 time period. This seems to me to be a striking result. Since θ is a measure composed of perceived wealth at the time of the real estate transaction which determines price and the Pratt-Arrow measure of absolute risk aversion, either factor or both of them could be changing. Does it seem reasonable that those who buy or sell farmland are becoming less risk averse? Or, would we expect the transactors to feel less wealthy over time? It might be helpful (although, admittedly, fraught with peril) to attempt to measure the average wealth component in each time period to obtain an implied measure of absolute risk aversion which could then be compared to measures found in other types of studies reporting estimated values for absolute risk aversion.

Professor Vasavada has done a very complete job of comparing the model accounting for risk aversion with the model assuming risk neutrality. There is, however, another interesting result reported in the model comparison section which I think bears further discussion. It is reported that, not only is the linear (risk neutral) utility function rejected, but also the logarithmic (decreasing absolute risk aversion) utility function is rejected.

Since it has been so convincingly argued that one would expect decreasing absolute risk aversion to be the rule rather than the exception, this result gives some pause. It may be a result of using aggregate data to estimate the parameters of an individual decision model. The reasons for rejection of the logarithmic utility model should be explored.

In sum, I found both the model and the paper interesting and I am sure it will be used as the basis for future work in attempting to solve one more piece of the puzzle of agricultural land prices - that of the effects of risk aversion on this market. I encourage Professor Vasavada to pursue further work in this area.

References

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