ECONOMIES OF SIZE STUDIES

A collection of papers

presented August 3-4, 1983,

at a workshop at Purdue University

in West Lafayette, Ind.

February 1984

Sponsored by
NCR-113 (Farm Financial Management Committee)
The Farm Foundation
U.S. Department of Agriculture
Center for Agricultural and Rural Development

Published by
Center for Agricultural and Rural Development
578 Heady Hall
Iowa State University
Ames, IA 50011

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ECONOMIES OF SIZE - SOME BRIEF OBSERVATIONS

Michael Boehlje*

The issues raised at this workshop have been numerous and the viewpoints diverse and stimulating. My observations will be brief; they will not be as well formed and explicitly expressed as those included in the formal papers that precede these comments. I would like to make five points.

1) In many cases the key concern from a public policy as well as an individual operator's perspective in the existence of diseconomies of size, not economies of size. We have had a tendency to concentrate in our research efforts on such questions as at what size level does the cost curve decline, how fast does it decline, and when does it become relatively flat. In fact, many of the important issues require information about the right-hand end rather than the left-hand end of

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of the curve. Does the cost curve go up or does it continue to be relatively flat with increases in size? If diseconomies exist, at what size does the cost curve rise? And how fast does it go up?

Furthermore, the problems of data availability are much more severe when considering size diseconomies compared to size economies. We have plenty of observations on smaller scale farms that enable us to study whether or not costs go down as size increases. The number of farms at the other end of the scale is small indeed, and it appears that data is more difficult to obtain from such operations. Empirical evidence of size economies is difficult to document in other than an antidotal form.

2) The financial dimensions of the size economies dialogue merit further recognition. In a concise book that integrates the theory of production and the theory of finance, Vickers suggests that given a specified equity capital base, firm size is determinant even if economies of diseconomies of size do not exist because of the increased risk and higher financing charges that will occur as one combines increasing amount of debt with that fixed equity capital base. This argument is not unlike that of the finance literature on the "optimal capital structure" which implies that there is an optimal quantity of debt to use in combination with a specified amount of equity capital. This optimal quantity of debt occurs at the point of the minimum cost of capital for the firm. Since debt or equity financing is needed to acquire resources and increase size, an optimal quantity of debt and equity implies an optimal firm size. Clearly, over time, the debt

and equity mix may change, and with an increased equity base additional debt can possibly be efficiently utilized. But Vicker's work and that of finance economies suggests that there is an optimal firm size as reflected by the optimal capital structure.

Another financial dimension that must be recognized in economies of size studies is that of acquisitions which result in vertical or horizontal integration. Increasingly we see on a small scale (at least compared to the agri-business sector) the phenomena of farm firms expanding into nonproduction activities in the marketing and input supply arenas. Such ventures change the concept and definition of the "farm firm." Many of these new "firms" are a response to the financial and tax attributes of various legal structures; some are explicit attempts to diversify out of production agriculture and/or obtain some control over the marketing processes (both product and input). Such arrangements are no longer the perview of California agriculture; traditional Midwest farm firms are becoming more sophisticated in structuring business and financial arrangements that include more than just production agriculture. With such a development, the traditional definition of the farm firm and the measurement of size become quite confused; perhaps emphasis on entrepreneurship in agriculture and the broad implications of that phenomenom including the total spectrum of legal and financial structures is more appropriate than the narrower emphasis of economies of size.

3) A third issue is that of the measurement of size. Much of our data base focuses on size as measured by the land base or the

dollar value of gross sales. In measuring size for the purpose of economies of size studies, part of the issue at least in the short run, is the specification of a fixed resource base and the opportunity to spread the fixed costs of this resource base across more units of output. In the longer run, it is not clear what resource fixities really exist; land can be rented or purchased, labor and management can be hired, and capital can be borrowed up to a limit. As suggested earlier, possibly in the longrun the key fixity is the ability to acquire financial capital. If this is the case, maybe size should be measured in terms of the value of the capital assets of the firm rather than being denominated by a major input (land) or sales volume (gross sales).

4) A broader issue that specifically focuses on the policy implications of economies of size studies is that of drawing policy implications from micro-data. I fully agree and have personally been an advocate of having a better understanding of the micro issues in policy analysis; it is very important to know how firms with different characteristics are operating and will respond to various policy initiatives. This is particularly true as we look at some of the structural issues that underlie many of the questions we would like to answer with economies of size studies. Yet, I still am not convinced we know how to make the transformation form the micro level to the aggregate, industry level. As suggested in much of the earlier discussion, economies of size studies require massive micro-data sets. Such data sets may help us better understand the micro issues related

to size economies and firm dynamics, but without the methodological structure to explicitly link micro responses to aggregate impacts, such important policy issues as the implications of size economies and firm dynamics on the structure of the industry will still go unanswered. I think this linkage is essential to a better understanding of the implications of public policy decisions.

5) Finally, one of the key issues raised by this workshop is whether or not economies of size studies are an appropriate focus for researchers in agricultural economics. The dialogue and discussion has suggested to me that economies of size as traditionally viewed is not sufficiently broad in scope or rich in theoretical or empirical content to explain the dynamics of firm adjustments that will occur in the future. A broader focus that views the determinants of size from from a technical, precuniary, enterpreneural, financial, and institutional perspective seems more appropriate to understand and predict micro behavior as well as policy responses.

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