The Economics of New Firms: Policy Implications for Minnesota

by Paul Reynolds and Brenda Miller

The total number of non-farm, non-government jobs in Minnesota increased by about 280,000 between 1978 and 1986. New firms created between 1979 and 1984 that were still in business in 1986 provided at least 42 percent of this net job growth, and may have provided as much as 99 percent (Figure 1).* Job losses as businesses shrink, disappear, or move out of state mean that the total number of new jobs is substantially greater than the net growth of jobs. While expansion of existing firms and location of new branches or subsidiaries contribute to the job pool, there is little question that new firms are one significant source of new jobs.

The importance of new firms as a source of existing jobs varies across industries. Figure 2 shows the proportion of 1986 jobs provided by new firms for each major industry sector. New firms are most significant in providing jobs for agricultural services, construction, and consumer services, and least significant for jobs in manufacturing and in

Figure 1. NET GROWTH OF JOBS IN MINNESOTA AND NEW FIRMS CONTRIBUTIONS: 1978-86

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* The range in estimates reflects uncertainty over the actual number of new firms founded each year.
Figure 2. MINNESOTA JOBS CREATED THROUGH NEW FIRMS BY INDUSTRY SECTOR, 1986 (in percents)

<table>
<thead>
<tr>
<th>Industry Sector</th>
<th>New Firms Jobs/Total Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Services</td>
<td>Low estimate</td>
</tr>
<tr>
<td>Mining</td>
<td>Low estimate</td>
</tr>
<tr>
<td>Construction</td>
<td>High estimate</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>High estimate</td>
</tr>
<tr>
<td>Distributive Services</td>
<td>Low estimate</td>
</tr>
<tr>
<td>Business Services</td>
<td>Low estimate</td>
</tr>
<tr>
<td>Health, Education, Social Services</td>
<td>Low estimate</td>
</tr>
<tr>
<td>Retail</td>
<td>Low estimate</td>
</tr>
<tr>
<td>Consumer Services</td>
<td>Low estimate</td>
</tr>
</tbody>
</table>

Low estimate
High estimate

questionnaire were used in a 1986 survey of Pennsylvania new firms; basic patterns in this sample of 1,534 (a response rate of 67 percent) were almost identical. Each of these three samples can be considered representative of all industry sectors and all regions of their respective states.

New Firms and Economic Development Policies

All governments—federal, state, regional, county, and city—adopt policies with a concern for economic development. A major issue is the extent to which there should be a specific focus on the founding of new firms. Such policies are the product of normal political processes and beyond the scope of this analysis. However, strategies are likely to be more effective if the mechanisms that lead to the founding of new firms, and the contributions that new firms make are more fully understood. These mechanisms are a central focus of this research.

New firm births reflect a combination of diverse processes. These include the normal processes of firm replacement, where "natural" births and deaths occur; structural

health, education, and social services. This reflects both differences in industrial growth rates and in volatility (the turnover when firms have higher birth and death rates).

The regional importance of jobs provided by new firms also varies (Figure 3). Between 6 and 13 percent of all 1986 jobs in the Twin Cities metropolitan area were provided by new firms. The new firm contributions are equivalent or larger in every region in greater Minnesota. This reflects a larger proportion of the more volatile industries—construction, retail, and consumer services—in the greater Minnesota regions.

The significance of new firms as a source of jobs led to a CURA-based program of research on Minnesota new firms, including a pilot study in 1984 and a more thorough study in 1986 with analysis completed in 1987. The basic procedure was similar in both studies. A sample of firms that had started in 1979 through 1984 was randomly selected from the files of a proprietary credit rating service. Phone calls were made to verify the status of each establishment, only those that were new, autonomous, and currently active were included in the sample. Sixteen-page questionnaires were sent to each eligible firm. Those not responding after three mailings were given the opportunity for a phone interview. Both Minnesota surveys had response rates of 75 percent. The 1986 sample represents 1,119 new firms. The same sampling procedure and a similar

* The Dun's Market Identifier file maintained by the Dun and Bradstreet Corporation for marketing purposes. This is the most complete and up to date public listing of business establishments currently available. Establishments are stand alone economic entities. They may be owned or controlled by a headquarters establishment.
changes such as fundamental shifts in the economic order that lead to higher birth rates for firms in new, emerging industries; the presence of places of high density economic activity where a diverse, multifaceted economic milieu or incubator fosters new business opportunities; and the actions of individuals starting new firms to create new career opportunities for themselves or in reaction to finding themselves unemployed. Many expect that new firm births will be enhanced if there are improvements in the "business climate," such as lowered taxes, access to capital, and subsidized costs.

These different perspectives, outlined in Figure 4, have quite different implications for public policy. Perhaps the most important difference is the emphasis on reducing costs or subsidizing the factors of production, as compared to enhancing a capacity for successful entrepreneurship as well as identifying and responding to new market opportunities. The relative emphases of the different policies reflect the different types of mechanisms believed to cause new firm startups.

A number of patterns found in our research help to determine the relative significance of these processes. Perhaps most dramatic was the reaction to a simple question related to the business climate hypothesis. If production costs are a major factor affecting the location of new firms, one would expect that some people starting new firms would move to locations with an optimal mix of high quality and low cost. One of the first questions we asked was, "Why did you start your new business here?" The results in all three surveys were unequivocal—not one in 3,100 said they had moved (to Minnesota or Pennsylvania) in order to start a new firm. The most common response to our question was "I live here!" Instances of people moving to start a new firm are quite rare.

Further, there is little evidence that features of the immediate economic context—the business climate—are of significance. All informants were asked to evaluate the "importance of" and their "satisfaction with" twenty local infrastructure features. The overall pattern of their answers is presented in Figure 5. Greater satisfaction is generally associated with the more important features.

The most important features are a mixture of those associated with access to a dense network of economic activity and those associated with costs. "Access to customers" is distinctive in importance, in a class by itself. Other factors of high importance are a combination of costs and availability. The rather low importance given to "access to research and development facilities" reflects the fact that the sample represents all new firms, and three in five are in construction, retail, or consumer service. Indeed, only a small portion of those firms in industries that might be considered to have a more technological component, such as manufacturing, are emphasizing advanced or new technology.

Finally, it is clear that "taxes" and "local government support for business" are special cases, for they are considered high in importance, but rated very low in satisfaction. The cause of this pattern, found in Pennsylvania as well as Minnesota, is not clear. The dissatisfaction with taxes may be associated either with the ac-
tual level of taxes or with a perception that they are not equitable. Both questionnaire results and spontaneous comments suggest that most persons starting new firms considered their contributions unappreciated and their problems neglected by government agencies—local and otherwise.

Strong support for the belief that a natural level of turnover is to be expected among businesses is provided by analysis of firm birth rates across different regions. Figure 6 presents estimates of the annual number of new businesses per 1,000 existing businesses for the thirteen development regions in Minnesota. Uniformity among regions is substantial. Although two-thirds of all new firms are founded in the Twin Cities metropolitan area, Region 11, the birth rate there is typical of that for the rest of the state. Most of the variation across regions is due to sampling error, estimates based on very small numbers, as well as differences in the industrial mixture in these regions. Variation across regions is largest for new firms with export potential—these include manufacturing firms, distributive service firms (mostly wholesale), and firms selling business services. There is less variation among new firms in the local market industries—construction firms, retail firms, and firms selling consumer services.

The net increase in Minnesota business entities is generally about 1 to 2 percent each year. This suggests that the 8 percent annual birth rate is offset by a 6 to 7 percent annual death rate. This natural turnover is a basic feature of today's economic order.

The evidence that unemployment leads individuals to start new firms is, at best, modest. All those interviewed in the surveys were asked about occupational experience prior to starting their new firm. Fewer than one in ten said they had been unemployed. When regional unemployment is considered in relation to new firm birth rates, there are small positive correlations associated with new firms functioning in the local market; these are not present for the new firms with export potential. In light of this evidence, it is hard to consider unemployment a major factor affecting the creation of new firms, particularly those that are more sophisticated and in complex industries.

On the other hand, there is substantial evidence that people start new firms to develop new career opportunities. Most members of new firm startup teams are from 25 to 40 years old, have substantial industry experience, and are starting a business for the first time. Further, they report a mix of personal objectives: wealth, autonomy, and interest in the product or service. No single goal dominates.

The most appropriate perspective on the process leading to the birth of new firms combines several of the mechanisms reviewed here. The process begins with an image of talented, experienced people working in a context where they see economic opportunities. Once they have decided that there is a market for the product

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### Figure 5. INFRASTRUCTURE FEATURES RANKED BY IMPORTANCE AND SATISFACTION LEVELS IN MINNESOTA, 1986

<table>
<thead>
<tr>
<th>IMPORTANCE</th>
<th>Very Low</th>
<th>Below Average</th>
<th>Above Average</th>
<th>Very High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very High</td>
<td>Access to customers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>Taxes</td>
<td>Capital availability</td>
<td>Labor costs</td>
<td>Quality of life</td>
</tr>
<tr>
<td>Medium</td>
<td>Local government support for business</td>
<td>Building space expenditures</td>
<td>Availability of skilled workers</td>
<td>Energy costs</td>
</tr>
<tr>
<td>Low</td>
<td>Local regulations</td>
<td>Land purchase, rental costs</td>
<td>Zoning and land use</td>
<td>Physical infrastructure</td>
</tr>
<tr>
<td>Very Low</td>
<td>Land availability</td>
<td>Access to research and development facilities</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Figure 6. NEW FIRM BIRTH RATES PER 1,000 ESTABLISHED BUSINESSES BY MINNESOTA DEVELOPMENT REGION (as estimated over 1979-84)
or service they feel qualified to deliver, they assemble the necessary components (team members, employees, capital, land, buildings, and so on). They stay in a region that they know and where they are known. Compared to the size of the market they anticipate, small differences in costs are not considered critical. By starting a new firm at home, they can always find a job where they have an established reputation if the new firm fails.

Small differences in the costs of components like taxes or interest rates do not seem to have much impact on this sequence of events.

Predicting New Firm Contributions to the Economy

The total number of jobs, the volume of sales, and the out-of-state exports provided by new firms—their total contributions to the state's economy—reflect both the number of new firms and their individual contributions. It is possible to develop accurate estimates of typical or average contributions. But estimates of the total number of new firms founded each year are still quite crude. For the 100,000 business entities in Minnesota, the annual birth rate is about 8 percent or 8,000 per year, but it may be as low as 5 percent or 5,000 per year, and it could be as high as 12 percent or 12,000 per year. This margin of error is the reason for the wide range of estimates in presenting new firm contributions to state job growth.

Equally important, particularly for policy purposes, is the substantial variation in contributions by new firms. Figure 7 presents the percentage of new firms providing different numbers of 1986 jobs and Figure 8 shows the percentage with different levels of sales. It is clear that the majority of new firms tend to be small. Seventy percent provide fewer than ten jobs each, while 60 percent have annual sales of less than $250,000. While not shown in a figure, 84 percent of the new firms have no out-of-state exports.

Alternatively, approximately half of new firm jobs, 75 percent of new firm sales, and 90 percent of out-of-state exports are provided by the 27 percent of new firms with high sales growth. High sales growth is indicated by average annual sales growth of $100,000 or more.

Predicting which new firms will have high annual growth is not perfect, but some assessments are possible. About two-thirds of all new firms have little or no growth after the first year. And subsequent analysis indicates that the age of a new firm has no value in predicting its future contributions. More significant for predictions is the scope of operations during the first year (the number of employees, and the sales volume). And of particular significance for predictions is growth of the firm during its first two years. New firms with high growth are found in all industries except consumer service.

Government efforts to assist all new firms may be thwarted by their sheer number—up to ten or twelve thousand in Minnesota every year. It would be quite expensive just to contact all new firms, let alone provide assistance. On the other hand, only those new firms with high growth potential (and high potential for providing jobs, sales, and out-of-state exports) might be provided with special services. Such a targeted program could emphasize government assistance for the first two years with confidence that the ultimate potential of these firms could be estimated within 24 months. Conversely, a program could provide assistance after the first two years with some confidence that the growth rate for firms would be established within that period.

The Value of Government Assistance

A critical feature of the survey sought reactions to a variety of government programs, or potential programs, that might assist new firms. The pattern of response is shown in Figure 9. Programs are ranked according to average interest, but the percentage with high interest is also indicated.

There is a substantial range in responses, from one in four interested in developing marketing skills, to one in sixteen...
with an interest in developing foreign export markets. The typical informant indicated a high interest in about four programs, but the mix was different for different firms.

Also important are the absolute numbers interested in each program. If there are 5,000 to 10,000 new firms founded in Minnesota each year, even the programs with the least interest—such as “Joint Research and Product Development” and “Develop Foreign Export Markets”—are of high interest to 300 to 600 new firms each year.

But would new firms be interested in government sponsored help? Relevant evidence is available from Pennsylvania where most of these services are provided through a set of diverse Pennsylvania Department of Commerce programs. In that survey, informants were invited to request specific assistance.* Almost half did so. In short, there was substantial interest among people starting new firms in receiving assistance from the state.

Summary
The major results of this analysis, based on the 1986 survey of Minnesota new firms, are as follows:

- New firms are a major source of new jobs, and may be a major source of economic growth.
- The processes that lead to the creation of new firms reflect, more than anything else, the availability of potential entrepreneurs and their judgments regarding market opportunities.
- Small changes in the cost of production (interest rates, taxes, wages, rent) are unlikely to have major impacts on new firm foundations.
- It is possible to identify high growth new firms—those one in four providing over three-fourths of the new jobs, sales, and out-of-state exports—during the first two years after startup.
- There is substantial interest among those starting new firms in government assistance, but each new firm is attracted to a different mix of assistance. Even the least popular programs are of interest to hundreds of new firms each year.

Paul Reynolds is a professor of sociology at the University of Minnesota. Brenda Miller, sociology student, has managed a number of surveys of organizations. Reynolds' work on new firms has been sponsored by CURA for several years. Results of the 1984 pilot study were presented in the July 1985 issue of the CURA Reporter. The most current study, based on a survey in 1986 with analysis completed in 1987, was conducted through CURA with additional support provided by the Metropolitan Council of the Twin Cities; the Minnesota Chamber of Commerce and Industry; the City of St. Paul; the St. Paul Port Authority; the State of Minnesota's area vocational technical institutes, community colleges, Department of Trade and Economic Development, and State Planning Agency; and the University of Minnesota's Extension Service. Results of this second study have been published as a full report by CURA; Reynolds and Miller, 1987 Minnesota New Firms Study. Copies may be ordered by phoning CURA (612/625-1551) or by using the publications order form in this CURA Reporter. A report on the Pennsylvania study has also been published and is available at no cost from the sponsoring federal agency, The Appalachia Regional Commission, 1666 Connecticut Avenue N.W., Washington, D.C. 20235.

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* Measured on a scale where 3 = high interest, 2 = moderate interest, 1 = low interest, and 0 = no interest.