The Role of Small Businesses in Economic Development

Kelly D. Edmiston†
Senior Economist
Community Affairs Department
Federal Reserve Bank of Kansas City

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Abstract

This paper sets out to evaluate the role that entrepreneurs and small businesses play in economic development. How important are entrepreneurs and small businesses in creating jobs, and are these the types of jobs that should be encouraged? How important are entrepreneurs and small businesses in the development of new products and new markets? Does promoting entrepreneurship and small businesses make sense as an economic development strategy? The answer is yes, but with some qualifications. Small businesses are potent job creators, but so are large businesses. The attribution of the bulk of net job creation to small businesses arises largely from relatively large job losses in large firms, not to especially robust job creation by small firms. More importantly, data show that large businesses offer better jobs than small businesses, on average, in terms of both compensation and stability. Further, there is little convincing evidence to suggest that small businesses have an edge over larger businesses in innovation. However, research and experience show that pursuing large businesses is likely to be a poor economic development strategy, which suggests that promoting entrepreneurship and fostering small businesses may offer a more viable alternative. But more research is needed to evaluate the case, and indeed, to determine whether or not public engagement in economic development itself is a cost-effective and worthwhile pursuit.

† The views expressed in this paper are those of the author and do not necessarily represent the views of the Federal Reserve Bank of Kansas City or the Federal Reserve System.
The Role of Small Businesses in Economic Development

Promoting entrepreneurship and fostering small businesses have received an enormous amount of attention in recent years from academics, politicians and the economic development community. Many times, especially in the economic development arena, the interest is sparked by the notion that small businesses create most new jobs in the United States, and the presumption is that these are good jobs. Further, one of the key characteristics of the “new economy” is flexibility in production. Increasingly, successful companies are those that constantly introduce new or improved products with greater variety. Small businesses are presumed to be more flexible and therefore better able to adapt to changing market conditions.

Because of the purported job creation role and innovative prowess of entrepreneurs and small businesses, it is thought that creating an environment conducive to many small businesses may therefore be a better economic development strategy than trying to lure one or two large enterprises. The hope is that new businesses will not only create jobs in the local community, but through innovation, may also have the potential to grow into rapid growth “gazelle” firms that can provide perhaps hundreds of jobs and become the industry leaders of tomorrow.

This paper sets out to evaluate the role that entrepreneurs and small businesses play in economic development. How important are entrepreneurs and small businesses in creating jobs, and are these the types of jobs that should be encouraged? How important are entrepreneurs and small businesses in the development of new products and new markets? Does promoting entrepreneurship and small businesses make sense as an economic development strategy? The answer is yes, but with some qualifications. Small businesses are potent job creators, but so are large businesses. The attribution of the bulk of net job creation to small businesses arises largely from relatively large job losses in large firms, not to especially robust job creation by small firms. More importantly, data show that large businesses offer better jobs than small businesses, on average, in terms of both compensation and stability. Further, there is little convincing evidence to suggest that small businesses have an edge over larger businesses in innovation.
However, research and experience show that pursuing large businesses is likely to be a poor economic development strategy, which suggests that promoting entrepreneurship and fostering small businesses may offer a more viable alternative. But more research is needed to evaluate the case, and indeed, to determine whether or not public engagement in economic development itself is a cost-effective and worthwhile pursuit.

**Small Businesses and Job Creation**

Perhaps the greatest generator of interest in entrepreneurship and small business is the wide-held belief that small businesses create most new jobs in the United States. Census Bureau data clearly show that the bulk of net new jobs created are generated by firms with fewer than 20 employees (Figure 1). *Net* new jobs is the total number of new jobs created by firm start-ups and expansions (*gross* job creation) less the total number of jobs destroyed by firm closures and contractions (*gross* job destruction). Firms with less than 20 employees (small firms) contributed 69 percent of net new jobs over the 1990 – 2001 period, despite accounting for less than 18 percent of total employment in 2001. Firms with 20 – 499 employees (mid-size firms) accounted for 10 percent of net new jobs over the period, while firms with 500 or more employees (large firms) created 21 percent of net new jobs.

The net job creation figures are at first glance difficult to reconcile with the fact that the share of total employment in small firms actually decreased over the same period (Figure 2). In 1990, 20 percent of all jobs were contained in small firms, while 46 percent of workers were employed by large firms. By 2001, the numbers had dropped to 18 percent for small firms and increased to 50 percent for large firms.

The explanation lies in the migration of firms across size classes from year to year. In any given year some small firms will expand employment beyond 20 workers and therefore grow into a larger size class. This works to decrease the proportion of firms that are in the smallest
Figure 1
Net Job Creation by Firm Size, 1990 - 2001

Figure 2
Size Class Shares of Total Employment, 1990 and 2001
size class relative to larger size classes, as do small business failures. Likewise, some large firms contract and fall below 500 employees, thus dropping into a smaller firm size class, and new small businesses are born. This works to increase the proportion of jobs in the smallest firm size classes. The data thus suggest that the effects of migration of small firms into larger size classes and small business failures outweigh the effects of the migration of large firms into smaller size classes and small business starts.

The net figures presented above, while striking, can be somewhat deceiving. *Gross* job flows are considerably larger in magnitude than are *net* job flows. Roughly 23 million net new jobs were created from 1990 – 2001, but these represent the difference between gross new jobs created of 202 million and gross job losses of 179 million. Thus, a great deal of volatility in the labor market is masked by the use of net employment figures. While small firms were responsible for almost 69 percent of *net* new jobs over the 1990 – 2001 period, they were responsible for less than 30 percent of *gross* jobs created (Table 1). Large firms were responsible for more than 39 percent of gross jobs created. Large firms account for an even greater proportion of gross job losses at just under 42 percent over the 1990 – 2001 period, compared with slightly more than 24 percent for small firms. Thus, the relatively high share of net new jobs created by small businesses arises predominantly from relatively large gross job losses among larger firms, not from massive job creation by small firms.

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<tr>
<td>&lt; 20</td>
<td>17.9</td>
<td>29.6</td>
<td>24.4</td>
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<tr>
<td>20 – 499</td>
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<td>500 +</td>
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<td>39.4</td>
<td>41.8</td>
<td>21.1</td>
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Data Source: U.S. Census Bureau, Statistics of U.S. Businesses.

1 For this reason, it would be misleading to measure net employment changes as total employment in a size class at the end of the year less total employment in the size class at the beginning of the year. The numbers presented in this section were generated by the U.S. Census Bureau from longitudinal data from individual firms.

2 The migration of firms into and out of size categories also makes attributing job growth to size categories difficult. The jobs figures presented above classify firms into size classes based on their size at the beginning of the period, which favors a finding of higher growth among small firms, rather than at the end of the period (see Appendix 1).
About 36 percent of gross new jobs in small firms arise from start-ups, or roughly 1.8 million jobs per year, on average, from 1990 – 2001. At the same time, an average of more than 1.6 million gross jobs were lost each year by the death of small firms (compared to 0.2 million for the largest firms). The net job growth from small business start-ups (subtracting job losses from closures) was thus relatively small and represented less than ten percent of total net job growth among the smallest firms in the 1990s. Thus, most gross new jobs and a large majority of net new jobs in small businesses arise from expansions of existing businesses rather than from the creation of new businesses.

Of course, 75 percent of business establishments in the United States have no payroll at all, representing mostly the self-employed. Clearly many entrepreneurs start their businesses as self-employed persons and acquire employees as their businesses expand. Largely because these establishments generate only about three percent of total receipts (sales) annually, fewer data generally are available for that sector than for the employer sector. The U.S. Census Bureau collects limited information on an annual basis from business tax returns filed with the Internal Revenue Service, however. In 2002, over 17.6 million individuals were self-employed or operated businesses with no payroll (roughly 12 percent of the working population), approximately 10 percent more than in 1997, the earliest date for which comparable data are available. This represents an average annual growth rate of about 1.9 percent over the period. By contrast, total private employment increased at an annual rate of only 0.7 percent over the same period.\(^3\) Although some portion of these individuals also were employed elsewhere, for many of them self-employment is their primary source of income, and self-employment represents a substantial portion of the employment base.

In summary, the numbers suggest that small businesses create about two-thirds of net new jobs in an average year, but the widely reported net job growth figures obscure important

\(^3\) According to the Bureau of Labor Statistics, total private nonfarm employment increased from 104.6 million in 1997 to 108.5 million in 2002. Private employment grew at a much faster 2.2 percent annual rate in the prerecession period from 1997 to 2000. Recessions often find individuals moving out of traditional employment and into self-employment, which explains some of the discrepancy in growth rates.
job creation and destruction dynamics. Most new jobs are in fact created by large firms, but most job destruction occurs in large firms as well. This means that the high share of net jobs created by small businesses results largely from large job losses in the big firms, rather than especially robust job creation on the part of small firms. Nevertheless, small businesses remain a significant source of new jobs in the United States. Most of the new jobs created by small businesses arise from the expansion of existing firms rather than from the birth of new firms, and virtually all of the net job creation arises from the expansion of existing firms. Given that small businesses create a significant share of new jobs, the pertinent question is whether or not these jobs are good jobs vis-à-vis jobs in larger firms.

**Job Quality in Small Businesses**

*Earnings.* Large firms pay higher wages than small firms. In 2002, the average hourly wage in establishments with less than 100 workers was $14.39 and consistently increased with establishment size to $24.17 (a 68 percent premium) for establishments with 2,500 or more workers (Figure 3). Further, smaller businesses are much more likely to employ low-wage workers. Nearly a quarter of workers in establishments with less than 100 workers make less than $8 per hour, compared with only less than three percent in establishments with 2,500 or more workers (Bureau of Labor Statistics, 2004a). Again, the percentage of workers earning low wages declines consistently as establishment size increases. The gap does not appear to be narrowing, as research finds wage growth in large firms equals or exceeds that in small firms (Hu, 2003).

There are several explanations for the firm size–wage effect, which is not unique to the United States, but persists across other countries as well. One common explanation for general

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4 Similar results have been found, for example, in Canada (Morisette, 1993), Germany (Schmidt and Zimmermann (1991), Austria (Winter-Ember, 2001), the UK (Belfield and Wei, 2004), and Switzerland (Winter-Ember and Zweimüller, 1999), among others.
wage discrepancies across workers or classes of workers is compensating differentials. Workers doing the same job may be willing to accept a lower wage for increased job stability, better fringe benefits, or other positive job attributes. Research has found, for example, that workers accept lower wages in exchange for health benefits (Olson, 2002). This is not a plausible explanation for the firm size – wage effect, however, because as detailed below, larger firms tend to offer more stable employment and better benefits than smaller firms. There are a number of undesirable working conditions associated with larger firms, of course, such as weaker autonomy, stricter rules and regulations, less flexible scheduling, and a more impersonal working environment. But empirical evidence, to the extent it can capture these differences in working conditions, does not bear this out as an explanation for the firm size-wage effect either (Brown and Medoff, 1989).

Demographics are an unlikely explanation as well. Women and minorities typically earn less than their white male counterparts, but data show that with the exception of Hispanics, women and minorities generally are more likely to work for larger firms. Blacks make up about
10 percent of employment in firms with fewer than 500 employees, compared to 13 percent for larger firms (Headd, 2000).  Similarly, women are 45 percent of the workforce in firms with fewer than 500 employees, but 48 percent in larger firms. This pattern holds for higher paying jobs as well. Research shows that professional women are disproportionately employed in large establishments (Mitra, 2003), as are minorities in science and engineering fields (National Science Foundation, 1999). Hispanics show a contrary trend, making up 12 percent of the less than 500 workforce, but only 9 percent of the workforce in larger firms.

Brown and Medoff (1989) explore many other possibilities, but even after controlling for “collar color,” union status, plausibility of a union threat, and industry make-up, in addition to working conditions, they are unable to explain away the persistent firm size – wage effect. The relationship persists even for piece-rate workers and for workers moving across different-sized employers. Brown and Medoff finally conclude: “our bottom line is that the size – wage differential appears to be both sizeable and omnipresent; our analysis leaves us uncomfortably unable to explain it, or at least the part of it that is not explained by observable indicators of labor quality (Brown and Medoff, 1989).”

**Fringe Benefits.** Small business owners and their employees also are much less likely to have employment-based health insurance policies, or health insurance policies of any kind. Survey data from the U.S. Census Bureau reveals that 31 percent of workers in businesses with 25 or fewer employees had employment-based health insurance policies in their own name in 2002, compared with 69 percent of workers employed in businesses with 1,000 or more employees.

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5 Kraybill et al. (1991) show that the large firm wage premium is higher for blacks than for whites.

6 Other theories to explain the firm size – wage effect have surfaced since the Brown and Medoff study, some of which have empirical support. Among these are theories suggesting that larger employers may make greater use of high quality workers. This might occur, for example, because larger firms are more capital-intensive and require higher-skilled employees to operate the plant and equipment. Empirical data seem to bear this out, as 20.3 percent of workers in firms with less than 500 employees have a bachelor’s degree or higher (in 1998), compared to 25.5 percent in larger firms (Headd, 2000). Further, Zabojnik and Bernhardt (2001) argue that workers in large firms have a greater incentive to gain additional education and new skills. Others suggest that because employee monitoring is more costly at larger firms, larger firms pay higher wages to deter shirking on the job, but this explanation is not supported by the data (Oi and Idson, 1999). Finally, other possibilities are simply the larger scale of big firms, which in some industries means lower costs (Pull, 2003; Idson and Oi, 1999), or the notion that less stable employees, which are likely to have lower wages, are attracted to small firms (Evans and Leighton, 1989; Mayo and Murray, 1991).
employees (Mills and Bhandari, 2003).\textsuperscript{7} Of the nearly 44 million uninsured people in the United States in 2002, fully 60 percent were in families who owned or were employed by small businesses.\textsuperscript{8} Among the self-employed, about 32 percent are uninsured, compared to 18 percent of all workers.\textsuperscript{9}

Perhaps the best source of information on fringe benefits by employer size is the National Compensation Survey conducted by the Bureau of Labor Statistics (Bureau of Labor Statistics, 2004b). Workers in large firms are much more likely to receive retirement benefits; health, dental, and vision insurance; and life insurance (Table 2). Eligibility for both short-term and long-term disability benefits are about twice as likely in large firms as in small firms. Aggravating the discrepancy in disability benefits is the fact that very small employers generally are not required to provide employees with workers’ compensation insurance.\textsuperscript{10} The average number of paid holidays is almost 30 percent higher in large firms, and paid vacation days is roughly 20 – 40 percent greater in large firms, depending on length of service. The differential in paid vacation days tends to increase in both absolute and relative terms with length of service. Eligibility for nonproduction bonuses (\textit{i.e.}, bonuses not based on sales or output) is comparable between large and small firms, but generally benefits appear to be much more generous in larger firms.

\textit{Job Stability}. Perhaps the best measure of job satisfaction is the propensity of employees to separate from their employers. Likewise, the likelihood of being dismissed from a job is an important factor in determining the quality of jobs. Turnover in general, that is, both employer and employee initiated separations, is therefore indicative of lower quality jobs: due to job instability in the former case and (relative) job dissatisfaction in the latter.

\textsuperscript{7} Some workers may have been covered by another family member’s employer-based policy.  
\textsuperscript{9} Some research suggests, however, that health care utilization rates for the self-employed generally are the same as those for wage-earners, despite their much lower rate of health insurance coverage (Perry and Rosen, 2001). This suggests that self-employed people may have been finding other means for financing their medical care other than health insurance.  
\textsuperscript{10} See National Academy of Social Insurance, 2003. The maximum number of workers that can be employed without coverage varies from state to state, but generally is in the range of 3 to 5 workers. Texas does not mandate workers’ compensation coverage.
<table>
<thead>
<tr>
<th>Fringe Benefit</th>
<th>100+ Employees</th>
<th>1 – 99 Employees</th>
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<tr>
<td>Retirement Benefits (%)</td>
<td></td>
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<tr>
<td>Any type</td>
<td>75</td>
<td>42</td>
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<tr>
<td>Defined Benefit</td>
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<td>9</td>
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<td>Defined Contribution</td>
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<tr>
<td>Dental Care</td>
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<tr>
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<tr>
<td>Insurance (%)</td>
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<tr>
<td>Life insurance</td>
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<td>36</td>
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<tr>
<td>Short-term Disability Benefits</td>
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<td>28</td>
</tr>
<tr>
<td>Long-term Disability Benefits</td>
<td>42</td>
<td>20</td>
</tr>
<tr>
<td>Paid Vacation Days (#)</td>
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<tr>
<td>After 1 year of service</td>
<td>9.6</td>
<td>7.9</td>
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<tr>
<td>After 5 years of service</td>
<td>14.7</td>
<td>12.0</td>
</tr>
<tr>
<td>After 25 years of service</td>
<td>22.1</td>
<td>16.1</td>
</tr>
<tr>
<td>Paid Holidays (#)</td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Nonproduction Bonus (% Eligible)</td>
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<td>48</td>
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Tabulations by Anderson and Meyer (1994) show a consistent downward trend in rates of permanent job separations as firm size increases. Permanent separation rates were close to 22 percent for firms with fewer than 100 employees, 13 percent for firms with 500 – 1,999 employees, and only 8 percent for firms with 2,000 or more employees. Temporary separations, which are about 28 percent of all turnover, occurred at roughly equal rates in small and large firms. The authors back up their tabulations with more sophisticated statistical analyses that show a significant negative relationship between job dissolution and firm size (see also Groothuis, 1994). While these separations include both employer and employee initiated separations, Winter-Ember (2001) and Campbell (1994) show a significant negative relationship between firm size and probability of layoff, and Brown and Medoff (1989) find that quit rates decline with firm size.

A natural reason for lower quit rates in large firms is the higher average wage and better fringe benefits in large firms than in small firms, which would be expected to reduce employee decisions to separate. This is especially true for pensions, which reward long tenure specifically.
As shown in Table 2, retirement benefits are available to 75 percent of large firm workers but only 42 percent of small firm workers. The presence of labor unions, which is much more common in large firms, may indirectly reduce turnover through the higher wages generally paid to unionized workers, but may also directly reduce turnover by giving dissatisfied workers a “voice” in their employment situation, offering an alternative to leaving (Anderson and Meyer, 1994). Further, larger firms offer more on-the-job training and more advancement opportunities, which makes it easier for large firms to maintain long employment relationships with their workers (Idson, 1996). Finally, some argue that the size – layoff relationship may be a spurious relationship resulting from the tendency of smaller businesses to attract less stable and capable workers, which also would work to explain part of the size – wage relationship (Winter-Ember, 2001).

A critical factor in greater labor turnover in smaller businesses is that the failure rate of small businesses is somewhat greater than that of larger businesses, which leads to higher rates of employer-initiated separations (Dunne et al., 1989; Idson, 1996). Failure rates of establishments drop markedly as firm size increases to 100 employees, but then turn upward again such that firms with 500 or more employees have larger failure rates than firms with 5 – 9 employees. Nevertheless, the failure rates for the smallest firms (1 – 4 employees) generally are about two-thirds higher than those of the largest firms. More important for this analysis is the loss of jobs from business failures. Approximately 12.7 percent of all workers in the smallest firms (1 – 4 employees) lost their jobs from business failures in 2000 – 2001, compared with 4.7 percent of those in the largest firms (500+ employees) (Figure 4).

Any way you look at it, larger firms offer better jobs than small firms. Wages are higher in large firms – 68 percent higher in firms with 2,500 or more employees compared to those with fewer than 100 employees. Benefits appear to be better in large firms as well, for everything from health insurance to retirement to paid holidays and vacations. Finally, both employee-initiated and employer-initiated turnover is lower in larger firms. Lower rates of
employee-initiated turnover suggest that relative job satisfaction and mobility are greater in larger firms, and lower rates of employer-initiated separations suggest that larger firms offer more stable employment.

**Small Business and Innovation**

Joseph Schumpeter, a remarkable analyst and advocate of capitalism, asserted that the hallmark of capitalism is innovation: “the sweeping out of old products, old enterprises, and old organizational forms by new ones,” to which he referred as a process of “creative destruction” (1942, 83). In capitalism, therefore, the only survivors are those who constantly innovate and develop new products and processes to replace the old ones. This process can be seen today, for example, in the “upheaval” in telecommunications as digital telephone service (through digital cable or the Internet) usurps traditional point-to-point telephone service over dedicated lines (see Brown and Latour, 2004).

Schumpeter asserted that larger firms are better positioned to make innovations, especially if operating in a concentrated market (such as a monopoly or a market in which only a
few firms dominate). There are several concepts that underlie his reasoning (see Vossen, 1998 and Symeonidis, 1996).

Research and development (R&D) expenditures involve very large fixed (sunk) costs, which can be recovered only with large sales volume, so that the costs can be spread over a large number of items. Further, larger firms generally have better access to external financing, and monopolistic firms, which tend to be larger firms, have better access to internal financing because of their generally higher profitability. Larger firms also have a greater capacity to undertake several R&D projects at once and hence dilute the risk of any one project in a diversified portfolio.

Not only do large firms have an advantage in financing and managing R&D, but larger firms, because of established reputations and name recognition, which make it easier to enter new markets and/or established marketing channels, are better able to take advantage of innovations through production and sale. In addition, having a large number of colleagues, which is more likely in a large firm, facilitates a division of labor and the solution of problems (e.g., by seeking the assistance of colleagues) and increases the likelihood that “serendipitous discoveries [are] recognized as important” (Vossen, 1998, 3). Finally, many of the largest firms operate in industries in which only a few firms operate or dominate the market. For the most part, these firms do not compete with one another on the basis of price, but rather on the basis of quality and product differentiation. Given this market structure, large firms may therefore have greater incentive to innovate.

On the other hand, there are also conceptual reasons to suggest lone entrepreneurs and small businesses are more likely to innovate. While large firm strengths are mostly material in nature, small firm strengths are mostly behavioral (Vossen, 1998). The most critical strength, perhaps, is the lack of entrenched bureaucracy that often characterizes larger firms, which can lead to long chains of command and subsequent communication inefficiency, inflexibility, and loss of managerial coordination. Further, small firms, to the extent that they operate in more competitive environments than do larger firms, may have a greater incentive to innovate so as to
stay ahead of rivals. Finally, because ownership and management are more likely to be intertwined in smaller firms, the personal rewards of potential innovators are higher. As a related factor, Zenger (1994) argues that smaller firms are better able to structure contracts to reward performance.

Given the relative strengths of large firms and small firms, whether or not small businesses are more innovative is an empirical question. Numerous studies have presented results on the relationship between firm size and R&D or innovative activity using a myriad of measures of innovation (see Symeonidis, 1996, for a detailed review). Unfortunately, however, the results are mixed and do not lend themselves to a clear consensus view of the relationship.

The large majority of small firms (especially those with fewer than 100 employees) do not engage in formal R&D, and the degree to which they engage in informal R&D is difficult to gauge (Symeonidis, 1996). Total R&D increases with firm size, but studies have offered differing views on the intensity of R&D, which generally is measured as R&D expenditure per employee or relative to sales, across firm size classes. The preponderance of the evidence suggests that (1) R&D intensity increases with firm size in some industries and decreases in others, as do R&D outcomes, such as patents (Scherer, 1984; Acs and Audretsch, 1987; Pavitt et al., 1987), so that a general statement about the relationship between R&D and firm size probably is not sensible; and (2) to the extent that a generalization can be made, the relationship is likely a moderate U-shape, meaning that both smaller firms (above a threshold size) and very large firms engage in R&D more intensively than medium-sized firms (Gellam Research Associates, 1976; Bound et al., 1984; Pavitt et al., 1987).

What is more clear is that smaller businesses are more efficient at innovation, which means they produce more innovations for a given amount of R&D than do larger firms (Vossen, 1998), and often create more innovation value per given amount of R&D. Part of this may be due simply to underestimation of R&D in smaller firms, but others suggest that small firms are more effective in taking advantage of knowledge spillovers from other firms (Acs et al., 1994).
Perhaps the industry with the greatest history of innovations by lone entrepreneurs and small businesses is the computer industry. The consensus first personal computer, MITS’ Altair (1975), and the first personal computer as we know them today, the Apple II (1977), were developed and marketed by what were at the time very small businesses. The first software written specifically for the personal computer (BASIC) was developed and marketed by Paul Allen and Bill Gates as part of a small business, Traf-O-Data, which would later evolve into Microsoft (1975).

The PC era arguably would have been substantially delayed if not for entrepreneurs starting small businesses, as the large computer companies seemed to have had little initial interest in personal computers. Hewlett-Packard, for example, rejected as nonviable the first Apple computer when presented it by its employee Steve Wozniak in 1976, and it was rapid sales of the Apple II that spawned development of IBM’s PC, which was not introduced until 1981. Xerox rejected a proposal in 1971 to design a “portable” computer and rejected multiple proposals in 1976 to market its personal computer, Alto, which was designed in the early 1970s for research use.

Clearly many of the great innovations in this industry were made by lone entrepreneurs and small businesses. Nevertheless, the innovations were made possible by years of research and development by large firms like AT&T and IBM and their precursory innovations. Many of the enhancements in personal computing since then have come from large firms as well, including the hard drive (IBM PC/XT), although enhancements in personal computing, software, and their marketing continue to be made by both small and large firms.

The message seems to be that both small firms and large firms make significant innovations that keep the economy moving and growing, although small firms may be more efficient at innovation. Small firms are the great innovators in some industries, while large firms

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12 The Altair was preceded by the Scelbi and the Mark-8, both in 1974.
are the great innovators in others. Moreover, small and large businesses interact in innovative activity. The computer industry was largely developed by large firms (AT&T and IBM), small firms advanced computing through the development of personal computers (MITS and Apple), large firms brought the innovation to the public at large through mass marketing (the IBM PC), and both small and large firms continue to improve computing today with additional innovations and enhancements.

Often entrepreneurs leave large enterprises to start small firms, either because innovation was hampered in their existing enterprise or because the entrepreneur wanted to ensure the reward for himself. And many small firms grow rapidly to become the largest of the large firms. Further, innovative small businesses often benefit enormously from the basic R&D of large firms.

Small businesses are crucial innovators in today’s economy and are the technological leaders of many industries, but the conventional wisdom that they are the cornerstone of innovative activity, and that large firms are too big and bureaucratic to make significant innovations, is false. Both small and large firms make significant innovations, and both types of firms are critical to the success of today’s economy.

**Local Economic Development Strategy**

The analysis above evaluates the economic development role of small businesses and suggests that small businesses may not be quite the fountainhead of job creation that they are purported to be, especially when it comes to high-paying jobs that are stable and offer good benefits. Big firm jobs are better jobs. Moreover, while small businesses are important innovators in today’s economy, so are large businesses, and there is no clear evidence that small businesses are more effective innovators than are large businesses. Further, the innovations of both small businesses and large businesses are inextricably linked. Given that large businesses are potent job creators and offer better jobs, and given the lack of evidence to support the notion that small businesses have an edge in innovation, a sensible economic development professional
would be expected to direct his/her attention to recruiting large establishments, and in fact, this has been the pattern over the last several decades. This experience suggests, however, that economic development strategies aimed at attracting large firms are unlikely to be successful, or are likely to be successful only at great cost. And smokestack chasing can be especially costly if it generates competition for firms among jurisdictions.

Two recent studies underscore the unfavorable balance between the costs and benefits of a large firm relocation strategy. In a study of new firm locations and expansions in the State of Georgia, Edmiston (2004) suggests that, on net, the location of a new, large (300+ employees) enterprise retards the growth of existing enterprises and/or discourages the establishment of enterprises that would otherwise have located there. Specifically, his results suggest that, on average, the location of a new plant with 1,000 workers would have a net cumulative employment impact of only 285 workers over a five-year period. That is, the firm would add 1,000 workers in its own plant, but would also drive away 715 other jobs that would have been generated (or retained) had the large firm chosen not to locate there. A study by Fox and Murray (2004) suggests that the net employment impact may be closer to zero.

Although much has been made of the positive spillover effects of large firms, including linkages with suppliers, induced consumer spending, knowledge transfer, and the sharing of pools of workers, negative spillovers are important as well, including constraints on the supply of labor and other inputs, upward pressure on wages and rents, congestion of infrastructure, and if fiscal incentives are provided to the locating firm, budget pressures from increased spending without commensurate increases in public revenues. Even perceptions of these negative effects can drive away firms, whether or not they actually materialize. The results from Edmiston and Fox and Murray suggest that the negative spillovers dominate with large firm locations.

Because the costs per job of incentive packages generally are measured with gross new jobs of the locating enterprise in the base (i.e., dollars of incentives/employment in the newly locating firm), or sometimes gross jobs of the locating enterprise plus positive spillovers from suppliers (i.e., dollars of incentives/employment of newly locating firm and its suppliers), the
costs per job created often are substantially underestimated. The State of Alabama, for example, offered Mercedes-Benz an incentive package worth $253 million to locate a plant in Vance in 1993, which employs roughly 1,900 people. Typically, the cost per job would be estimated at $133,158 ($253 million / 1,900). If the Edmiston (2004) estimates of net employment impact hold true for Mercedes, only 542 jobs were created on net, for an estimated cost per job created of $466,790. If the State of Alabama had put the $253 million in trust, it could have paid 542 Alabamans $23,340 – $46,680 per year on interest alone (assuming a 5 – 10 percent return).

The typical worker at the Alabama plant, at $24 per hour, earns around $50,000 per year, excluding retirement, insurance, and other benefits. If Fox and Murray’s estimates hold, the expenditure was completely wasteful, as the return was nearly zero. The State of Alabama arguably could have invested the same resources into creating an overall more conducive business environment for both big and small firms and received greater returns.

Not only is the recruitment of large firms costly in terms of direct expenditure and the forgone opportunities for economic development that that expenditure otherwise could have financed, but it is also costly in terms of the competitive economic development landscape that it engenders. Edmiston and Turnbull (2004) found that decisions by local governments in Georgia to use tax abatements to lure firms are highly dependent on the decisions of their neighbors. Specifically, they found that relative to the case where no neighbors use tax abatements, the likelihood that a Georgia county uses tax abatements to lure firms increases by 41.3 percentage points if its neighbors employ tax abatements. The presence of a border with a neighboring state also was found to encourage the use of tax abatements.

This type of competition can be very costly. Consider two competing regions that are on a level playing field such that a prospective firm is indifferent to locating in either jurisdiction.

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14 This policy, of course, would be absurd. It is mentioned only to highlight the costs incurred by Alabama in creating additional jobs.

15 Thus, for example, a county which has a 20 percent probability of using tax abatements when none of its neighbors do, would have a 61.3 percent probability of using them when its neighbors do employ abatements.
Thus, the likelihood that it chooses any one over the other is 50 percent. Wherever it locates, determined perhaps by the flip of a coin, it will create new jobs and income. It will also generate additional costs to the region in terms of infrastructure like roads and sewers and public services such as education, police, and fire. Part of that increased public expenditure will be offset by tax revenues paid by the new firm. Now consider that one of the regions offers to abate the locating firm’s property taxes, and the other region follows suit to stay competitive. The two regions are then again on a level playing field, and the likelihood that the firm locates in one region versus the other is again 50 – 50. Neither region has gained an advantage by its aggressive recruiting, but the winning region will now be faced with increased costs but no property taxes to offset them. The recruitment of large, footloose firms can therefore be a losing proposition for all involved.

Moreover, aggressive courting of large firms can distort rational behavior, causing a waste of economic resources. For example, one region may offer a lower cost option for a newly locating enterprise because of a larger supply of labor, cheaper costs of transport to market, or other natural advantages. If another region is able to capture the firm away from its optimal location by offering lucrative financial incentives, resources will be needlessly expended, for example, by shipping the final product over larger distances. While welfare in the winning region may be improved by the deal (but not necessarily), welfare for the larger community encompassing the region will be reduced because fewer resources are available for production than would have been the case if the firm chose its economically optimal location.

Conclusion

While large firms offer better jobs on average and contribute significantly to job creation and innovation, research and experience suggest that attempts to recruit large enterprises to a specific community are unlikely to be successful (because of competition from competing communities) and are not likely to be cost-effective even if they are successful. This suggests
that to the extent that public economic development efforts are rational and economically sensible, emphasis on entrepreneurship and small businesses may be more effective.

Such an approach is likely to avoid many of the pitfalls of “smokestack chasing,” but simply being an alternative to unsuccessful smokestack chasing does not itself make the promotion and support of small businesses a viable and worthwhile strategy. Additional research is needed to evaluate whether a small business focus is cost-effective either. Moreover, economic development efforts of any stripe should be subject to scrutiny. A succeeding paper will explore the economic rationale for public involvement in economic development generally, and in entrepreneurship and the small business sector in particular. Additional work also will expand the analysis of small businesses’ role in economic development, including an evaluation of the role entrepreneurs and small businesses might play in improving the economic situation in low and moderate income communities.
REFERENCES


Appendix 1

Firm Migration, Classification, and Growth

The migration of firms into and out of size categories also makes attributing job growth to size categories difficult (Okolie, 2004). The jobs figures presented in Figure 1 classify firms into size classes based on their size at the beginning of the period, which favors a finding of higher growth among small firms, rather than at the end of the period. Table A1 decomposes job growth from the second quarter of 2000 into job classes using beginning size of firm, mean size of firm over the period, and end size of firm. If the beginning size of the firm is used to classify firms, small firms with less than 20 employees are responsible for 53.2 percent of net job growth in the quarter, whereas if end of period size is used, small firms are responsible for only 16.2 percent of net job creation in the quarter. Again, this pattern is consistent with significant movement of small firms into larger class sizes.

Table A1
Share of Net Job Growth by Firm Size, Second Quarter 2000 by Size Classification Scheme

<table>
<thead>
<tr>
<th>Employees</th>
<th>Beginning Size</th>
<th>Mean Size</th>
<th>End Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 20</td>
<td>53.2</td>
<td>34.5</td>
<td>16.2</td>
</tr>
<tr>
<td>20 – 499</td>
<td>34.7</td>
<td>45.3</td>
<td>55.7</td>
</tr>
<tr>
<td>500 +</td>
<td>12.1</td>
<td>20.2</td>
<td>28.1</td>
</tr>
</tbody>
</table>

Data Source: Okolie (2004)