

Proprietor Employment Trends in Massachusetts and Essex County: 2001–2006

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EXECUTIVE SUMMARY

This study was commissioned by the Enterprise Center at Salem State College (the Enterprise Center) to learn more about the small businesses it supports. The report is based on U.S. Census Bureau and U.S. Bureau of Economic Analysis statistics¹ for the years 2001 through 2006, the latest period for which data is available. It looks both at the Commonwealth of Massachusetts and at Essex County, where the Enterprise Center is located.

There are three principle findings that may be surprising to many readers and that can inform business development efforts at both state and regional levels.

1. While wage-and-salary employment was declining between 2001 and 2006² for both Massachusetts and Essex County, growth in proprietor or self-employment was growing at such a rapid rate over this same time period that total employment actually increased for both Massachusetts and Essex County.
2. The share of total employment made up by self-employed proprietors is important in both Massachusetts and particularly in Essex County.
3. Growth was particularly noteworthy for proprietors in specific industry sectors like health care and “professional, scientific and technical” services.

1. Proprietor growth underlies total employment growth in Massachusetts and Essex County.

- Total employment grew by 89,138 jobs between 2001 and 2006, despite the fact that statewide wage-and-salary employment decreased by 88,513 jobs. This means there were 177,651 more proprietors working in the state in 2006 than there were in 2001.
- The number of proprietors with wage-and-salary employees increased by an estimated 58,359 businesses between 2001 and 2006, up by 27.7 percent over this six-year period.

This finding is contrary to reports in the media that employment has been declining in the state since 2001; that is because those reports are based only on non-farm wage-and-salary employment, which is reported monthly by the Massachusetts Executive Office of Labor and Workforce Development. (Comparable proprietor information must be obtained from individual tax returns, as will be discussed in more detail later.)

2. Proprietors are important to the economies of Massachusetts and Essex County.

Proprietors are defined as business owners who may or may not employ wage-and-salary personnel. They may be sole proprietors who work alone, or they may employ any number of workers. The key distinguishing business characteristic of proprietors is that they are not incorporated, and their business profit or loss is reported on Schedule C of their tax return.

- Proprietors comprise close to one out of five (19.8 percent) employed people in Massachusetts when government and primary sector employment³ is not considered.
- The statistics for Essex County are even more significant: when government and primary sector employment is excluded, proprietors account for 24.9 percent of total employment, 16.9 percent higher than the national average of 19.7 percent when government and primary sector employment is excluded.
- Sole proprietors outnumbered proprietors with wage-and-salary employees in both Essex County and the state, but there are several sectors where the number of proprietors with employees is growing more rapidly than sole proprietors. In Essex County, proprietors with employees have a 65 percent growth rate.

The key here is the exclusion of employment in government and the primary sector industries, which, with the exception of fishing, are not prominent features of the Massachusetts economy. When all industries, including primary sector industries and government, are considered, Massachusetts at 17.7 percent falls 8.8 percent below the national average of 19.4 percent. When these primary economic sectors and government are excluded, Massachusetts proprietors comprise 19.8 percent of state employment, compared to the national 21.3 percent, 7.0 percent lower.

In Essex County, where fishing is still an active industry, the number of self-employed proprietors is high enough to keep the county 16 percent ahead of the national average, even with all industries considered.

Of particular note are proprietors with wage-and-salary personnel. During the period of this study, they added 58,359 new businesses, a 27.7 percent increase statewide.

In short, proprietors comprise a significant percentage of Massachusetts and Essex County businesses. They are growing in number. None of these potentially significant findings is discernable from state employment reports because the reports are based solely on wage-and-salary data, without including the proprietor information available from federal and state tax returns. One must turn to U.S. Census Bureau and U.S. Bureau of Economic Analysis for this data.

3. The number of proprietors is growing and specific sectors, such as “professional, scientific and technical” are growing the fastest.

Statewide, the number of proprietors grew 32.6 percent (33.3 percent excluding government and primary sector industries). Significant employment growth occurred statewide for proprietors in key industrial sectors, such as “professional, scientific and technical services” and health care. There was also growth in the number of proprietors in industries such as information arts and entertainment and “other” services. It is important to note that “information,” is a very broad category that includes the publishing, broadcast, motion picture, data processing, Internet, and telecommunications industries among others.

Between 2001 and 2006, the number of proprietors in Essex County grew 28.1 percent, more slowly than the Commonwealth’s growth rate of 32.6 percent, but across a broader range of industries than did the Commonwealth. In addition to the industries listed with rapid growth in proprietors statewide, Essex County saw growth of proprietors in wholesale trade, finance and insurance, and educational services.

Seven economic sectors saw the founding of more than 200 new businesses statewide with one to four wage-and-salary employees between 2001 and 2006. These sectors include transportation and warehousing; finance and insurance; professional, technical and scientific services; arts, entertainment and recreation; and accommodations and food services. What is also noteworthy is that proprietors are not concentrated in just a few sectors, but are widespread and cross industry boundaries.

In summary, the inclusion of proprietor data in evaluating employment trends completely changes how we need to look at employment. The significance of proprietors lies not only in the size of this group and its growth rate in comparison to wage-and-salary employment, but also in what the proprietor phenomenon says about how work is conducted in the 21st century.

We believe this is not a fleeting sign of the times, but instead represents a sea change shift in work patterns. Technology has expanded individual skill sets, made people more productive and enabled them to run a global business with little more than a desk and a laptop.

Additionally, we are increasingly seeing what some have dubbed the “gig economy” (people working on separate and unrelated projects or gigs), virtual businesses, and the use of the “Hollywood model,” in which work groups come together for a single specific project and then disband. However one views changing work patterns, it is clear that proprietors are here to stay, and they are growing. They need support. For Massachusetts not to recognize this sector of the economy and support its needs more robustly is to shoot itself in its economic foot.

I. INTRODUCTION

This report focuses on employment trends for self-employed proprietors between 2001 and 2006 for Massachusetts as well as for Essex County, where the Enterprise Center is located.

The common perception of the Massachusetts economy is that there has been significant employment loss in recent years, which has led to an exodus of the working population. It is true there has been a decline in wage-and-salary employment in the state, and it is also true that slightly more people are leaving the state than are moving into it, with growth in the total population due to natural increase.

What is not recognized, however, is that the number of employed people in the state is actually increasing. When one considers self-employment data from the U.S. Bureau of Economic Analysis and looks beyond reported wage-and-salary data, a surprising fact emerges:

The number of self-employed people increased by 177,651, more than twice as many jobs than were lost by wage-and-salary employees between 2001 and 2006. This represents a 32.6 percent growth rate, 33.3 percent when government and primary sectors are excluded.

The state and federal governments' and the media's monthly reports on wage-and-salary employment use the term "non-farm employment" to describe this employment, but that is misleading. Farm employment is indeed not included in these monthly reports, but neither are these important facts:

- **Nearly one of five (19.8 percent) of the jobs in other industries within Massachusetts, and one out of four jobs in Essex County, is held by self-employed proprietors, excluding government and primary sector employment.**
- **The proprietor businesses are in some of the state's fastest growing industries, including professional, technical and services and education.**

Government agencies and the media focus on wage-and-salary employment because that data is released monthly and is thus current. In contrast, proprietor employment and total employment data is released on an annual basis only, eight to 18 months after the year ended for which these data are available. Furthermore, these data are released on a federal website without a major press release that will draw the media's attention to them. As a result, the media ignores these data; they are both "old news" and require substantial initiative to access and evaluate.

The reason for the eight- to 18-month lag in sole proprietor data is that they are collected from U.S. Internal Revenue Service Schedule C filings. As proprietors file Schedule C's only annually and for the previous tax year, employment data can only be reported on an annual basis. On the other hand, employers of wage-and-salary employees submit employment data to the Massachusetts Executive Office of Labor and Workforce Development monthly for the previous month.

All of the tables and figures in this report show data by industry using the North American Industrial Code System (NAICS). This allows information to be clearly defined and to be compared among the tables. Both the NAICS code and industry name are given in all of the tables. However, most of the figures have only either the name or code, but not both, due to space limitations.

II. EMPLOYMENT TRENDS IN MASSACHUSETTS

The principle finding of this report is a startling one.

While wage-and-salary employment declined between 2001 and 2006 for Massachusetts, growth in proprietor (or self-employment) increased at such a rapid rate over this same time period that total employment actually increased for Massachusetts.

Between 2001 and 2006, statewide wage-and-salary employment did decrease by 88,513 jobs. However, total employment grew by 89,138 jobs, as shown in Table 2, meaning that there were 177,651 more proprietors working in the state in 2006 than there were in 2001. This represents a 2.2 percent increase, not a decrease in total employment.

This finding runs contrary to reports in the media that employment has been declining in the state since 2001 because those reports are based only on wage-and-salary employment, which is reported monthly by the

Massachusetts Executive Office of Labor and Workforce Development.

Table 1 shows the change in the number of full time and part time wage-and-salary employees between 2001 and 2006 by industrial sector. The two sectors with the greatest job losses over this period were manufacturing and information. These losses reflect the move of manufacturing to other parts of the world and the impact of the “dot.com” bust on the state’s economy.

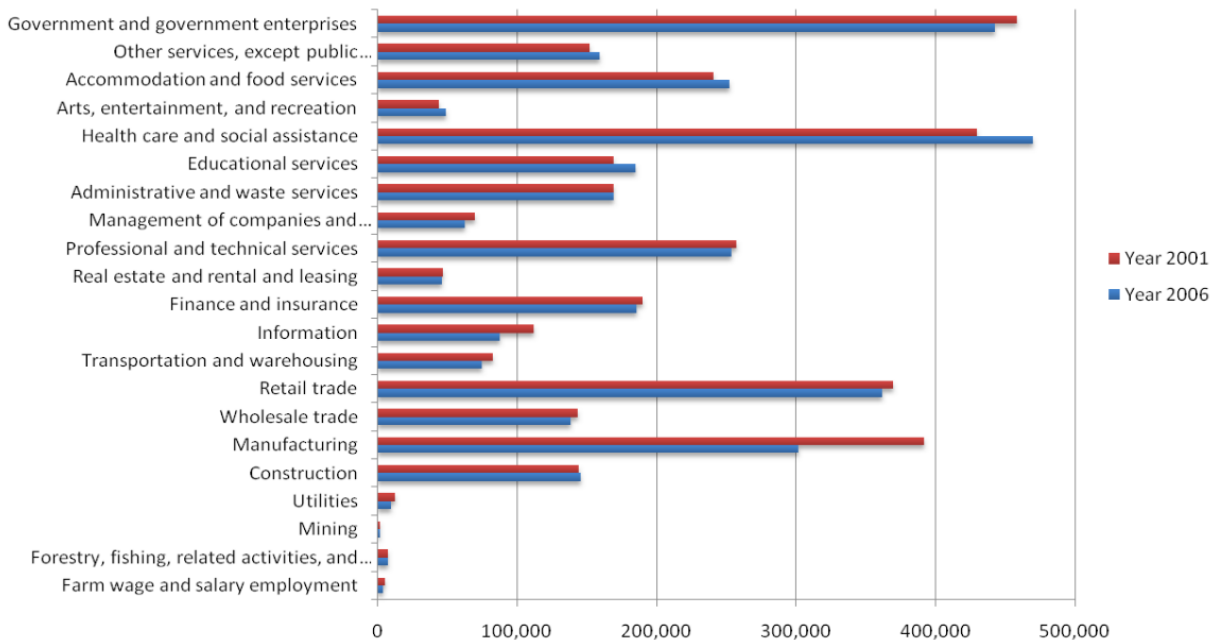
It is important to note that there was wage-and-salary employment growth in health care, education and tourist-related industries; it simply was not enough to offset the many industries that sustained losses in wage-and-salary employment. The decline in wage-and-salary employment of 88,513 jobs, (-2.5 percent), between 2001 and 2006, as shown in Table 1, is what is most often noted in the media’s discussion of employment trends in the state’s economy.

Table 1
Change in Wage and Salary Employment. Massachusetts: 2001 – 2006

| NAIC # | Line Title 27 | Year 2001 | Year 2006 | Change |
|--|--|------------------|------------------|----------------|
| 11 | Farm wage and salary employment | 5,138 | 3,924 | -1,214 |
| 11 | Forestry, fishing, related activities, and other | 7,111 | 7,575 | 464 |
| 21 | Mining | 1,445 | 1,743 | 298 |
| 22 | Utilities | 11,999 | 9,681 | -2,318 |
| 23 | Construction | 144,142 | 145,463 | 1,321 |
| 31 | Manufacturing | 391,569 | 301,352 | -90,217 |
| 42 | Wholesale trade | 142,987 | 138,270 | -4,717 |
| 44 | Retail trade | 369,596 | 361,405 | -8,191 |
| 48 | Transportation and warehousing | 82,457 | 74,535 | -7,922 |
| 51 | Information | 111,814 | 87,463 | -24,351 |
| 52 | Finance and insurance | 189,718 | 185,442 | -4,276 |
| 53 | Real estate and rental and leasing | 46,577 | 46,064 | -513 |
| 54 | Professional and technical services | 257,099 | 253,274 | -3,825 |
| 55 | Management of companies and enterprises | 69,385 | 62,164 | -7,221 |
| 56 | Administrative and waste services | 168,936 | 169,279 | 343 |
| 61 | Educational services | 169,405 | 184,620 | 15,215 |
| 62 | Health care and social assistance | 429,315 | 469,494 | 40,179 |
| 71 | Arts, entertainment, and recreation | 43,848 | 49,202 | 5,354 |
| 72 | Accommodation and food services | 240,498 | 251,937 | 11,439 |
| 81 | Other services, except public administration | 151,657 | 159,292 | 7,635 |
| 99 | Government and government enterprises | 458,110 | 442,114 | -15,996 |
| Wage and salary employment by place of work | | 3,492,806 | 3,404,293 | -88,513 |

Source: USBEA, Massachusetts Table SA 27 N, YEAR: 2001 -2006

Figure 1
Comparison: Wage and Salary Employment. Massachusetts: 2001 – 2006



Source: USBEA, Massachusetts Table SA 27 N, YEAR: 2001 -2006

Figure 1 is a bar graph that shows wage-and-salary employment in Massachusetts for the subject period. Industries with more than 200,000 employees include health care and social assistance, government, retail trade, manufacturing, professional and technical services and accommodation and food services. Four of these six industries had a decline in wage-and-salary employment between 2001 and 2006, with only health care and social assistance, education, accommodation and food services, and “other” showing growth.

Figure 2 is a bar graph that also shows the change in wage-and-salary employment between 2001 and 2006. The loss of more than 90,000 wage-and-salary jobs in manufacturing is obvious. There was also a loss of more than 24,000 wage-and-salary jobs in information, part of the “dot.com” bust, during this time period. Government and corporate management facilities also had notable losses. The sector with the most growth in wage-and-salary employment was health care and social assistance, followed by educational services.

Table 2 shows total employment, which is the sum of wage-and-salary employment and self-employment (proprietors) by industry for the years 2001 and 2006 for Massachusetts. In this table, total employment grew by 89,138 jobs, or 2.2 percent, between 2001 and 2006. While total employment did grow, the rate of growth was not fast enough to employ everyone entering the workforce. Some of the people leaving wage-and-salary

employment became self-employed, but many others were either not able or interested in undertaking this form of employment and either left the workforce or moved to another state.

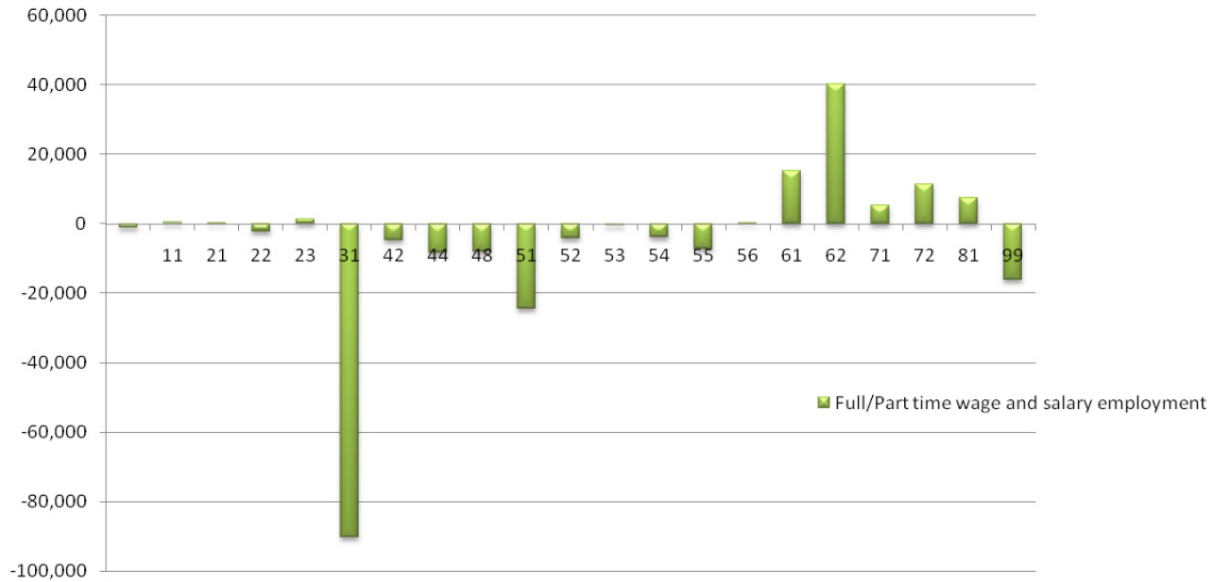
Historically, during recessionary periods many make this transition in employment from wage-and-salary positions to proprietors. The recession of 2001-2002 here in Massachusetts did lead many who lost jobs in manufacturing and the dot.com (information) businesses to become self-employed. This pattern was also seen in the recession of the early 1990s, when many who left computer companies such as Data General, Wang and Digital Equipment started new companies.

We can anticipate that this pattern will be repeated during this current economic recession, which began in December 2007. Nor is this pattern limited to Massachusetts. In a recent study of changes in wage-and-salary and proprietor employment, the State of Maryland Department of Planning (2008)⁴ found the same trends in wage-and-salary and proprietor employment change in most regions of the United States as described above for Massachusetts.

The change in the number of self-employed proprietors, wage-and-salary employment, and total employment between 2001 and 2006 for Massachusetts is shown in Table 3.

Figure 2

Change Analysis: Full Time and Part Time Wage and Salary Employment by NAICS Industries. Massachusetts: 2001-2006



Source: USBEA, Massachusetts Table SA 27 N, YEAR: 2001 -2006

Table 2

Total Full Time and Part Time Employment. Massachusetts: 2001-2006

| NAIC # | Line Title | Year 2001 | Year 2006 | Change |
|-------------------------|--|------------------|------------------|---------------|
| 11 | Farm employment | 10,916 | 9,697 | -1,219 |
| 11 | Forestry, fishing, related activities, and other | 13,450 | 14,272 | 822 |
| 21 | Mining | 2,554 | 2,678 | 124 |
| 22 | Utilities | 12,388 | 10,215 | -2,173 |
| 23 | Construction | 218,776 | 249,320 | 30,544 |
| 31 | Manufacturing | 401,126 | 311,850 | -89,276 |
| 42 | Wholesale trade | 151,796 | 150,364 | -1,432 |
| 44 | Retail trade | 416,841 | 417,746 | 905 |
| 48 | Transportation and warehousing | 101,171 | 96,546 | -4,625 |
| 51 | Information | 123,109 | 102,187 | -20,922 |
| 52 | Finance and insurance | 234,116 | 237,803 | 3,687 |
| 53 | Real estate and rental and leasing | 119,848 | 167,436 | 47,588 |
| 54 | Professional and technical services | 372,367 | 391,624 | 19,257 |
| 55 | Management of companies and enterprises | 70,397 | 63,427 | -6,970 |
| 56 | Administrative and waste services | 211,313 | 224,102 | 12,789 |
| 61 | Educational services | 188,017 | 214,269 | 26,252 |
| 62 | Arts, entertainment, and recreation | 485,521 | 527,777 | 42,256 |
| 71 | Arts, entertainment, and recreation | 85,429 | 98,270 | 12,841 |
| 72 | Accommodation and food services | 251,812 | 265,301 | 13,489 |
| 81 | Other services, except public administration | 196,381 | 217,578 | 21,197 |
| 99 | Government and government enterprises | 458,110 | 442,114 | -15,996 |
| Total employment | | 4,125,438 | 4,214,576 | 89,138 |

Source: USBEA, Massachusetts Table SA 25 N, Year: 2001 - 2006

Table 3

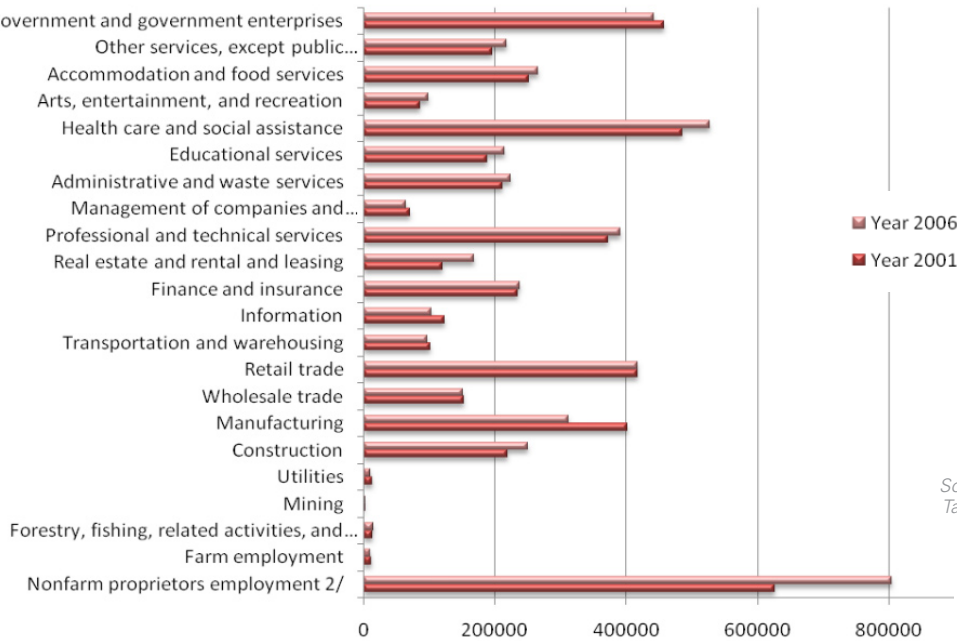
Comparisons Among Wage & Salary, Total And Proprietor Employment. Massachusetts: 2001-2006

| NAIC# | Line Title | Employment Change: 2001-2006 | | |
|-------------------------|--|------------------------------|---------------|----------------|
| | | Wage and Salary | Total | Proprietor |
| 11 | Farm employment | -1,214 | -1,219 | -5 |
| 11 | Forestry, fishing, related activities, and other | 464 | 822 | 358 |
| 21 | Mining | 298 | 124 | -174 |
| 22 | Utilities | -2,318 | -2,173 | 145 |
| 23 | Construction | 1,321 | 30,544 | 29,223 |
| 31 | Manufacturing | -90,217 | -89,276 | 941 |
| 42 | Wholesale trade | -4,717 | -1,432 | 3,285 |
| 44 | Retail trade | -8,191 | 905 | 9,096 |
| 48 | Transportation and warehousing | -7,922 | -4,625 | 3,297 |
| 51 | Information | -24,351 | -20,922 | 3,429 |
| 52 | Finance and insurance | -4,276 | 3,687 | 7,963 |
| 53 | Real estate and rental and leasing | -513 | 47,588 | 48,101 |
| 54 | Professional and technical services | -3,825 | 19,257 | 23,082 |
| 55 | Management of companies and enterprises | -7,221 | -6,970 | 251 |
| 56 | Administrative and waste services | 343 | 12,789 | 12,446 |
| 61 | Educational services | 15,215 | 26,252 | 11,037 |
| 62 | Health care and social assistance | 40,179 | 42,256 | 2,077 |
| 71 | Arts, entertainment, and recreation | 5,354 | 12,841 | 7,487 |
| 72 | Accommodation and food services | 11,439 | 13,489 | 2,050 |
| 81 | Other services, except public administration | 7,635 | 21,197 | 13,562 |
| 99 | Government and government enterprises | -15,996 | -15,996 | 0 |
| Total employment | | -88,513 | 89,138 | 177,651 |

Source: USBEA, Massachusetts Table SA 25 N and SA 27 N, Year: 2001 -2006

Figure 3

Total Employment in Massachusetts: 2001-2006



Source: USBEA, Massachusetts Table SA 25 N, Year: 2001 -2006

There was an increase of 177,651 self-employed people over this five-year period. This is a 32.6 percent increase (33.3 percent if government and primary sectors are excluded) and indicates an average of 35,530 new self-employed people each year.

Many industries posed increases in self employment: real estate, construction, professional and technical services, other services, administrative services, educational services, retail trade, finance and insurance, and arts and recreation.

Figure 3 is a bar graph that shows the total of wage-and-salary and proprietor employment in Massachusetts by industry for the years 2001 and 2006. Industries with more than 300,000 in total employees include health care and social services, government, retail trade, professional and technical services and manufacturing.

It is important to note that real estate and construction feature prominently as growth industries in the tables of this report. The authors recognize that these industries have declined significantly since 2006 and, although they are cited with other growth sectors, they are not considered such by the authors.

When industries are ranked in terms of total employment rather than just wage-and-salary employment, the professional and technical services industry moves ahead of manufacturing as the fourth largest industry by employment.

The bottom line in Figure 3 is not an industry, but shows the relative size and growth of non-farm proprietor employment in the state between 2001 and 2006 in comparison with total employment in the other industries.

Table 4 looks more closely at proprietor employment for 2001 and for 2006, noting the change in the number of proprietors in Massachusetts between those years, from 545,381 to 722,992 in 2006, an increase of 177,611. Even if the primary industries are excluded, there is an increase of 177,432 proprietors during this time period. In 2006, the largest numbers of proprietors are found in the following industries: professional and technical (including scientific) services, real estate, construction, health care, administrative and waste services, retail trade, and other services—all with more than 50,000 proprietors. Those industrial sectors with an increase of more than 10,000 proprietors between 2001 and 2006 were real estate, construction, professional and technical services, other services, administrative and waste services, and educational services.

Figure 4 is a bar graph that shows the change in total employment, wage-and-salary employment and proprietor employment by industry for Massachusetts between 2001 and 2006. The red bars are for total employment change, the blue bars show change in wage-and-salary employment, and the green bars show change in proprietor employment. For most industries, the red and blue bars show similar patterns, with a different pattern for change in proprietor employment. The large losses in total employment and wage-and-salary employment for manufacturing, information and government are apparent.

There was also significant growth in total employment (primarily due to the growth in the number of proprietors) in financial and insurance, arts and recreation, and accommodations and food services. The industries with the greatest growth in total employment were real estate, health care and social assistance, educational services, other services, and professional and technical services. While real estate and construction have clearly declined in the state since 2006, there is no reason to assume similar declines the other growth industries indicated.

19.8 percent of all employment (excluding government and primary sectors) in Massachusetts in 2006 comprised self-employed people.

This is shown in Table 5, where 722,992 jobs out of a total of 4,074,283 jobs in Massachusetts in 2006 were held by self-employed people, with those in the professional and technical services sector leading the way, followed by self-employed people in real estate and construction. These industries were followed by health care and social assistance, administrative and waste services, retail trade, and finance and insurance.

Total personal income, wage-and-salary earnings and other earnings are presented by industrial sector for Massachusetts for 2006 in Table 6. The category “other earnings” reflects the difference between wage-and-salary earnings and total earnings; it comprises proprietor income, but also rent, royalties, interest, dividends, and profits/losses by the owners of all business in that industry.

Once again, the industry with the highest total personal earnings in Massachusetts in 2006 was professional and technical services.

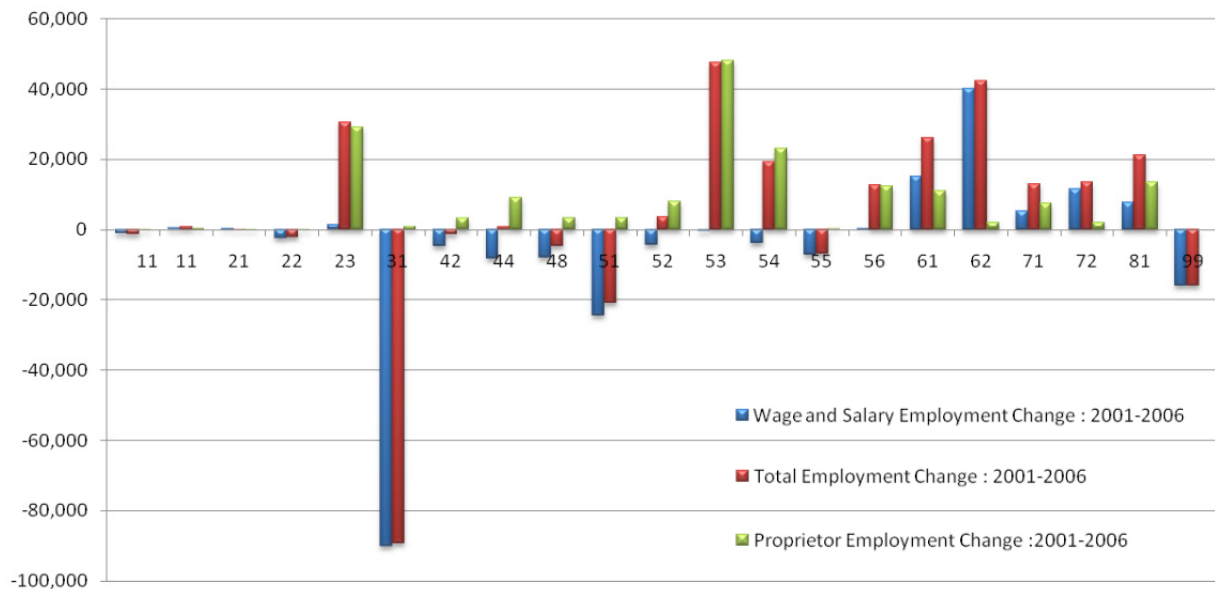
This sector had the second highest wage-and-salary earnings after government and the largest amount of other earnings, including proprietors’ income. Government had the second largest amount of total earnings, followed by health care and social assistance, finance and insurance, and manufacturing. After government and professional

Table 4
Change in Proprietor Employment. Massachusetts: 2001-2006

| NAIC # | Line Title 27 | Year 2001 | Year 2006 | Change |
|---|--|----------------|----------------|----------------|
| 11 | Farm proprietor employment | 5,715 | 5,710 | -5 |
| 11 | Forestry, fishing, related activities, and other | 6,018 | 6,376 | 358 |
| 21 | Mining | 1,098 | 924 | -174 |
| 22 | Utilities | 259 | 404 | 145 |
| 23 | Construction | 56,207 | 85,430 | 29,223 |
| 31 | Manufacturing | 8,720 | 9,661 | 941 |
| 42 | Wholesale trade | 7,085 | 10,370 | 3,285 |
| 44 | Retail trade | 43,323 | 52,419 | 9,096 |
| 48 | Transportation and warehousing | 15,719 | 19,016 | 3,297 |
| 51 | Information | 8,483 | 11,912 | 3,429 |
| 52 | Finance and insurance | 40,331 | 48,294 | 7,963 |
| 53 | Real estate and rental and leasing | 47,946 | 96,047 | 48,101 |
| 54 | Professional and technical services | 109,236 | 132,318 | 23,082 |
| 55 | Management of companies and enterprises | 711 | 962 | 251 |
| 56 | Administrative and waste services | 41,363 | 53,809 | 12,446 |
| 61 | Educational services | 11,945 | 22,982 | 11,037 |
| 62 | Health care and social assistance | 54,276 | 56,353 | 2,077 |
| 71 | Arts, entertainment, and recreation | 38,173 | 45,660 | 7,487 |
| 72 | Accommodation and food services | 10,715 | 12,765 | 2,050 |
| 81 | Other services, except public administration | 38,018 | 51,580 | 13,562 |
| 99 | Government and government enterprises | 0 | 0 | 0 |
| Proprietor employment by place of work | | 545,381 | 722,992 | 177,611 |

Source: USBEA, Massachusetts Table SA 27 N, YEAR: 2001 -2006

Figure 4
Total, Wage & Salary and Proprietor Employment Change by Industry. Massachusetts: 2001-2006



Source: USBEA, Massachusetts Table SA 25 N and SA 27 N, Year: 2001 -2006

Table 5
Types of Employment. Massachusetts: 2001-2006

Source: US Census Bureau, Non employer Statistics 2006 Total for all sectors, MA
USBEA, Massachusetts Table SA 25 N and 27 N, YEAR:2006

| NAIC# | Line Title | Total Employment | Wage & Salary Employment | Proprietors | Sole Proprietor Employment |
|--------------|--|------------------|--------------------------|----------------|----------------------------|
| 11 | Farm, Forestry, fishing, related activities, and other | 24,398 | 12,312 | 12,086 | 4,977 |
| 21 | Mining | 2,778 | 1,854 | 924 | 71 |
| 22 | Utilities | 10,501 | 10,097 | 404 | 349 |
| 23 | Construction | 229,123 | 143,693 | 85,430 | 61,392 |
| 31 | Manufacturing | 324,165 | 314,504 | 9,661 | 5,989 |
| 42 | Wholesale trade | 148,390 | 138,020 | 10,370 | 7,527 |
| 44 | Retail trade | 419,137 | 366,718 | 52,419 | 31,089 |
| 48 | Transportation and warehousing | 94,296 | 75,280 | 19,016 | 15,794 |
| 51 | Information | 99,249 | 87,337 | 11,912 | 8,316 |
| 52 | Finance and insurance | 225,941 | 177,647 | 48,294 | 13,997 |
| 53 | Real estate and rental and leasing | 142,425 | 46,378 | 96,047 | 41,749 |
| 54 | Professional and technical services | 368,444 | 236,126 | 132,318 | 92,262 |
| 55 | Management of companies and enterprises | 64,767 | 63,805 | 962 | 0 |
| 56 | Administrative and waste services | 215,370 | 161,561 | 53,809 | 28,615 |
| 61 | Educational services | 199,830 | 176,848 | 22,982 | 17,532 |
| 62 | Health care and social assistance | 506,584 | 450,231 | 56,353 | 39,950 |
| 71 | Arts, entertainment, and recreation | 94,257 | 48,597 | 45,660 | 28,819 |
| 72 | Accommodation and food services | 260,200 | 247,435 | 12,765 | 5,192 |
| 81 | Other services, except public administration | 208,165 | 156,585 | 51,580 | 50,378 |
| 99 | Government and government enterprises | 436,263 | 436,263 | - | 0 |
| TOTAL | | 4,074,283 | 3,351,291 | 722,992 | 453,998 |

Table 6
Differences in Earnings by Industry. Massachusetts: 2006

*Amounts are shown in thousands of dollars

| NAIC# | Line Title | Personal Income | Wage and Salary Compensation | Other Earnings |
|--------------|--|----------------------|------------------------------|---------------------|
| 11 | Farm/Agriculture | \$101,011 | \$106,808 | (\$5,797) |
| 11 | Forestry, fishing, related activities, and other | \$498,838 | \$417,705 | \$81,133 |
| 21 | Mining | \$383,581 | \$120,349 | \$263,232 |
| 22 | Utilities | \$1,726,497 | \$1,216,585 | \$509,912 |
| 23 | Construction | \$13,172,482 | \$9,816,938 | \$3,355,544 |
| 31 | Manufacturing | \$26,242,075 | \$25,380,962 | \$861,113 |
| 42 | Wholesale trade | \$12,641,715 | \$11,934,880 | \$706,835 |
| 44 | Retail trade | \$12,496,104 | \$11,623,014 | \$873,090 |
| 48 | Transportation and warehousing | \$4,270,137 | \$3,907,594 | \$362,543 |
| 51 | Information | \$9,022,140 | \$8,700,978 | \$321,162 |
| 52 | Finance and insurance | \$26,840,732 | \$23,167,154 | \$3,673,578 |
| 53 | Real estate and rental and leasing | \$5,376,588 | \$2,931,457 | \$2,445,131 |
| 54 | Professional and technical services | \$32,568,310 | \$25,691,405 | \$6,876,905 |
| 55 | Management of companies and enterprises | \$6,569,206 | \$6,570,518 | (\$1,312) |
| 56 | Administrative and waste services | \$7,916,856 | \$7,083,426 | \$833,430 |
| 61 | Educational services | \$7,720,755 | \$7,550,026 | \$170,729 |
| 62 | Health care and social assistance | \$26,926,012 | \$24,740,388 | \$2,185,624 |
| 71 | Arts, entertainment, and recreation | \$2,219,059 | \$1,856,283 | \$362,776 |
| 72 | Accommodation and food services | \$5,979,017 | \$5,772,379 | \$206,638 |
| 81 | Other services, except public administration | \$5,952,370 | \$5,192,115 | \$760,255 |
| 99 | Government and government enterprises | \$27,507,635 | \$27,507,635 | \$0 |
| Total | | \$236,131,120 | \$211,288,599 | \$24,842,521 |

Source: USBEA Tables: SA 05 N Personal Income by major source and earnings by NAICS industry – Massachusetts, SA 06N Compensation of employees by NAICS industry – Massachusetts

and technical services, the industries with the largest amount of wage-and-salary earnings were manufacturing, health care and social services, and finance and insurance. The largest amount of other earnings, which includes proprietors' income, was in professional and technical services, followed by finance and insurance, construction, real estate, and health care and social assistance. Massachusetts had more than 236 billion dollars in total personal income in 2006.

Table 7 presents "other earnings" on a per-proprietor basis by industry in Massachusetts for 2006. Two industries, farming and corporate management, showed losses. Two other industries, mining and utilities, showed very large amounts of other earnings per proprietor, which probably reflected a return on investment of money. For most other industries, the amounts shown as earnings per proprietor are probably a reasonable approximation for proprietor earnings.

While some industries—manufacturing, wholesale trade, finance and insurance, and professional and technical services—showed relatively high annual earnings, most industries had proprietors who earn less than what people could earn as wage-and salary employees in those same industries (see Table 7). The average (mean) of "other" earnings per proprietor in 2006 in Massachusetts was \$32,884.

This suggests that, for many industries, people filing Schedule C tax returns as proprietors may have another job or are working on a part-time basis. Or it may simply be difficult to get a small business off the ground and run it profitably. The reasons for this discrepancy between proprietor and wage-and-salary earnings are unclear. No real research has been done in this area, so no substantiated conclusions can be drawn.

Table 7
Earnings per Proprietor. Massachusetts: 2006

| NAIC# | Line Title | Other Earnings | Proprietor Employment (MA) | Earnings/ proprietor |
|--------------|--|-------------------------|----------------------------|----------------------|
| 11 | Farm/Agriculture | (\$5,797,000) | 5,773 | (\$1,004) |
| 11 | Forestry, fishing, related activities, and other | \$81,133,000 | 6,697 | \$12,115 |
| 21 | Mining | \$263,232,000 | 935 | \$281,532 |
| 22 | Utilities | \$509,912,000 | 534 | \$954,891 |
| 23 | Construction | \$3,355,544,000 | 103,857 | \$32,309 |
| 31 | Manufacturing | \$861,113,000 | 10,498 | \$82,026 |
| 42 | Wholesale trade | \$706,835,000 | 12,094 | \$58,445 |
| 44 | Retail trade | \$873,090,000 | 56,341 | \$15,496 |
| 48 | Transportation and warehousing | \$362,543,000 | 22,011 | \$16,471 |
| 51 | Information | \$321,162,000 | 14,724 | \$21,812 |
| 52 | Finance and insurance | \$3,673,578,000 | 52,361 | \$70,159 |
| 53 | Real estate and rental and leasing | \$2,445,131,000 | 121,372 | \$20,146 |
| 54 | Professional and technical services | \$6,876,905,000 | 138,350 | \$49,707 |
| 55 | Management of companies and enterprises | (\$1,312,000) | 1,263 | (\$1,039) |
| 56 | Administrative and waste services | \$833,430,000 | 54,823 | \$15,202 |
| 61 | Educational services | \$170,729,000 | 29,649 | \$5,758 |
| 62 | Health care and social assistance | \$2,185,624,000 | 58,283 | \$37,500 |
| 71 | Arts, entertainment, and recreation | \$362,776,000 | 49,068 | \$7,393 |
| 72 | Accommodation and food services | \$206,638,000 | 13,364 | \$15,462 |
| 81 | Other services, except public administration | \$760,255,000 | 58,286 | \$13,044 |
| 99 | Government and government enterprises | 0 | 0 | |
| Total | | \$24,842,521,000 | 755,460 | \$32,884 |

Source: USBEA Tables SA 05 N Personal Income by major source and earnings, A 06N Compensation of Employees by NAICS industry—Massachusetts

Earnings per wage-and-salary employee in Massachusetts during 2006 are presented in Table 8. These wage-and-salary levels are before any benefits and taxes paid by the employee were deducted. Industries where average wage-and-salary earnings were more than \$100,000 per employee during 2006 included utilities, finance and insurance, corporate management, and professional and technical services. The lowest average wage-and-salary industries were accommodation and food services, farming, retail trade and other services.

The average (mean) wage-and-salary income in 2006 in Massachusetts was \$65,989. This amount was almost twice as high as average earnings per proprietor, but, as noted above, the reasons for this are not clear.

The most commonly used measure of the relative importance or concentration of employment in an industry in a particular geographic area is the “location quotient” (L.Q.). Table 9 compares the importance of proprietor employment in a specific industry as a share of total employment in Massachusetts versus that same measurement at the national level for the year 2006. The location quotient index, or score, can be easily converted to percentages above or below the national average.

For example, Massachusetts has a location quotient of 0.13 for proprietors who are farmers as a share of total Massachusetts employment in comparison with the national share of proprietors who are farmers as a percent of national total employment. This means that proprietors who farm in Massachusetts are only one-eighth (13 percent) of the share of proprietors who farm at the national level. This should not be a big surprise, as Massachusetts is not known nationally as a farm state. The state is known for its many educational institutions, however, so it is not surprising to see that educational services have a location quotient of 1.85, indicating that there are 85 percent more proprietors who offer private sector educational and child care services in Massachusetts compared to the national average.

Using data from Tables 9 and 11, when the total number of proprietors as a share of total employment in Massachusetts (17.7 percent) is compared with the share for the United States as a whole (19.4 percent), Massachusetts is 8.8 percent below the national average. Excluding government and primary sector employment, the state is 7.0 percent below. The final column of Table 9 shows an adjusted location quotient of two percent to account for the difference.

There are two kinds of proprietor businesses, sole proprietorships where people work alone and proprietorships with wage-and-salary employees. In some industries,

proprietors are far more likely to work alone, while in other industries, proprietors who employ others dominate. According to Table 5, the industrial sectors in Massachusetts where sole proprietor businesses make up more than half of all proprietorships are: other services, professional and technical services, construction, retail trade, transportation and warehousing, utilities, manufacturing, wholesale trade, information, educational services, health care and social assistance, arts and entertainment, and administrative and waste services. The industrial sectors where the number of proprietorships that hire wage and salary employees outnumber sole proprietorships are: corporate management, farms (plus forestry and fishing), mining, finance and insurance, accommodation and food service, and real estate.

Table 10 shows the breakout of total employment for the United States into wage and salary employment and proprietors for 2006 using data from the US Bureau of Economic Analysis. This table also shows the breakout of proprietors into those who are sole proprietors with no employees and proprietors who have wage and salary employees, using information from the US Census Bureau. The industry sectors with more than 2.5 million proprietors nationally in 2006 include: real estate, professional and technical services, construction, retail trade, other services, and administrative and waste services.

For the United States, 19.4 percent of all employment in 2006 was attributed to proprietors. Of these proprietors, 60.2 percent were sole proprietors and 39.8 percent were proprietor businesses with wage and salary employees. Table 5, which shows the equivalent data for Massachusetts, shows that 17.7 percent of all employment was proprietors and that 62.8 percent of the proprietors were sole proprietors and 37.2 percent were proprietor businesses with wage and salary employees. The difference is due to farming, which is a far more important industry as a share of total employment and for proprietor employment nationally than in Massachusetts. Also, a fairly large share of farmers are proprietors who have wage and salary employees.

When proprietor employment in the primary sector industries are not considered, then 21.3 percent of total employment in the remaining industries in the United States is proprietors, while in Massachusetts, 19.8 percent of total employment in the remaining industries is proprietors.

What is perhaps even more significant than the rate of growth of proprietor employment in Massachusetts are the many important industries in which Massachusetts exceeded the national average. In the final column of Table 9, the location quotients for the Massachusetts

Table 8

Wage and Salary Earnings per Employee. Massachusetts: 2006

| NAIC# | Line Title | Wage and Salary Compensation | Wage and Salary Employment | Earnings/Employee |
|----------------------|--|------------------------------|----------------------------|-------------------|
| 11 | Farm/Agriculture | \$106,808 | \$3,924 | \$27,219 |
| 11 | Forestry, fishing, related activities, and other | \$417,705 | \$7,575 | \$55,143 |
| 21 | Mining | \$120,349 | \$1,743 | \$69,047 |
| 22 | Utilities | \$1,216,585 | \$9,681 | \$125,667 |
| 23 | Construction | \$9,816,938 | \$145,463 | \$67,488 |
| 31 | Manufacturing | \$25,380,962 | \$301,352 | \$84,224 |
| 42 | Wholesale trade | \$11,934,880 | \$138,270 | \$86,316 |
| 44 | Retail trade | \$11,623,014 | \$361,405 | \$32,161 |
| 48 | Transportation and warehousing | \$3,907,594 | \$74,535 | \$52,426 |
| 51 | Information | \$8,700,978 | \$87,463 | \$99,482 |
| 52 | Finance and insurance | \$23,167,154 | \$185,442 | \$124,929 |
| 53 | Real estate and rental and leasing | \$2,931,457 | \$46,064 | \$63,639 |
| 54 | Professional and technical services | \$25,691,405 | \$253,274 | \$101,437 |
| 55 | Management of companies and enterprises | \$6,570,518 | \$62,164 | \$105,697 |
| 56 | Administrative and waste services | \$7,083,426 | \$169,279 | \$41,845 |
| 61 | Educational services | \$7,550,026 | \$184,620 | \$40,895 |
| 62 | Health care and social assistance | \$24,740,388 | \$469,494 | \$52,696 |
| 71 | Arts, entertainment, and recreation | \$1,856,283 | \$49,202 | \$37,728 |
| 72 | Accommodation and food services | \$5,772,379 | \$251,937 | \$22,912 |
| 81 | Other services, except public administration | \$5,192,115 | \$159,292 | \$32,595 |
| 99 | Government and government enterprises | \$27,507,635 | \$442,114 | \$62,218 |
| Total/Average | | \$211,288,599 | \$3,404,293 | \$65,989 |

Source: USBEA Tables: SA06N Compensation of employees by NAICS industry – Massachusetts, SA27N Full-time and part-time wage and salary employment by NAICS industry – Massachusetts

Table 9

Relative Concentration Of Proprietors By Industry. Massachusetts: 2006

| NAIC # | Line Title | Proprietor Employment (MA) | Proprietor Employment (US) | L.Q. | Adj L.O. |
|----------------------|--|----------------------------|----------------------------|----------|-------------|
| 11 | Farm/Agriculture | 5,773 | 2,115,000 | 0.13 | - |
| 11 | Forestry, fishing, related activities, and other | 6,697 | 306,500 | 1 | - |
| 21 | Mining | 935 | 314,200 | 0.14 | - |
| 22 | Utilities | 534 | 22,700 | 1.05 | 1.07 |
| 23 | Construction | 103,857 | 3,508,900 | 1.35 | 1.38 |
| 31 | Manufacturing | 10,498 | 526,200 | 0.9 | 0.92 |
| 42 | Wholesale trade | 12,094 | 550,800 | 1 | 1.02 |
| 44 | Retail trade | 56,341 | 3,238,800 | 0.79 | 0.81 |
| 48 | Transportation and warehousing | 22,011 | 1,249,900 | 0.8 | 0.82 |
| 51 | Information | 14,724 | 496,500 | 1.35 | 1.38 |
| 52 | Finance and insurance | 52,361 | 2,181,800 | 1.1 | 1.12 |
| 53 | Real estate and rental and leasing | 121,372 | 5,229,500 | 1.05 | 1.07 |
| 54 | Professional and technical services | 138,350 | 3,793,800 | 1.66 | 1.69 |
| 55 | Management of companies and enterprises | 1,263 | 103,700 | 0.55 | 0.56 |
| 56 | Administrative and waste services | 54,823 | 2,523,500 | 0.99 | 1.01 |
| 61 | Educational services | 29,649 | 730,500 | 1.85 | 1.89 |
| 62 | Health care and social assistance | 58,283 | 2,278,900 | 1.16 | 1.18 |
| 71 | Arts, entertainment and recreation | 49,068 | 1,619,400 | 1.38 | 1.41 |
| 72 | Accommodation and food services | 13,364 | 709,200 | 0.86 | 0.88 |
| 81 | Other services, except public administration | 58,286 | 2,996,800 | 0.88 | 0.9 |
| 99 | Government and government enterprises | - | - | | |
| Total/Average | | 755,460 | 34,496,600 | 1 | 1.02 |

Source: USBEA (MA and US) L.Q = Location Quotients, a measure of concentration.

Table 10
Types of Employment. United States: 2006

| NAIC# | Line Title | Total Employment | Wage & Salary Employment | Proprietors | Sole Proprietor Employment |
|--------------|--|--------------------|--------------------------|-------------------|----------------------------|
| 11 | Farm, Forestry, fishing, related activities, and other | 3,885,500 | 1,464,000 | 2,421,500 | 228,775 |
| 21 | Mining | 932,200 | 618,000 | 314,200 | 101,891 |
| 22 | Utilities | 572,700 | 550,000 | 22,700 | 17,070 |
| 23 | Construction | 11,424,900 | 7,916,000 | 3,508,900 | 2,549,239 |
| 31 | Manufacturing | 14,769,200 | 14,243,000 | 526,200 | 311,111 |
| 42 | Wholesale trade | 6,532,800 | 5,982,000 | 550,800 | 387,022 |
| 44 | Retail trade | 19,112,800 | 15,874,000 | 3,238,800 | 1,857,611 |
| 48 | Transportation and warehousing | 5,743,900 | 4,494,000 | 1,249,900 | 1,001,977 |
| 51 | Information | 3,556,500 | 3,060,000 | 496,500 | 317,695 |
| 52 | Finance and insurance | 8,414,800 | 6,233,000 | 2,181,800 | 758,167 |
| 53 | Real estate and rental and leasing | 7,467,500 | 2,238,000 | 5,229,500 | 2,420,926 |
| 54 | Professional and technical services | 11,626,800 | 7,833,000 | 3,793,800 | 2,904,083 |
| 55 | Management of companies and enterprises | 1,896,700 | 1,793,000 | 103,700 | 0 |
| 56 | Administrative and waste services | 10,838,500 | 8,315,000 | 2,523,500 | 1,482,344 |
| 61 | Educational services | 3,691,500 | 2,961,000 | 730,500 | 482,222 |
| 62 | Health care and social assistance | 17,722,900 | 15,444,000 | 2,278,900 | 1,728,485 |
| 71 | Arts, entertainment, and recreation | 3,633,400 | 2,014,000 | 1,619,400 | 1,001,780 |
| 72 | Accommodation and food services | 11,990,200 | 11,281,000 | 709,200 | 287,342 |
| 81 | Other services, except public administration | 9,982,800 | 6,986,000 | 2,996,800 | 2,930,815 |
| 99 | Government and government enterprises | 24,020,000 | 24,020,000 | 0 | 0 |
| TOTAL | | 177,815,600 | 143,319,000 | 34,496,600 | 20,768,555 |

Source: US Census Bureau, Non employer Statistics 2006 Total for all sectors, United States
USBEA, United States, Table SA 25 N and 27 N, YEAR:2006

Table 11
Change in Total Employment. Essex County: 2001 – 2006

| NAIC # | Line Title | Year 2001 | Year 2006 | Change |
|-------------------------|--|----------------|----------------|---------------|
| 11 | Farm employment | 891 | 757 | -134 |
| 11 | Forestry, fishing, related activities, and other | 1,754 | 1,684 | -68 |
| 21 | Mining | 246 | 200 | -46 |
| 22 | Utilities | 955 | 828 | -127 |
| 23 | Construction | 21,171 | 26,134 | 4,963 |
| 31 | Manufacturing | 58,895 | 45,880 | -13,015 |
| 42 | Wholesale trade | 14,022 | 13,621 | -401 |
| 44 | Retail trade | 46,370 | 45,616 | -754 |
| 48 | Transportation and warehousing | 6,498 | 6,479 | -19 |
| 51 | Information | 9,867 | 7,803 | -2,064 |
| 52 | Finance and insurance | 13,692 | 16,080 | 2,388 |
| 53 | Real estate and rental and leasing | 12,009 | 17,357 | 5,348 |
| 54 | Professional and technical services | 28,874 | 34,030 | 5,156 |
| 55 | Management of companies and enterprises | 5,040 | 3,229 | -1,811 |
| 56 | Administrative and waste services | 20,942 | 23,049 | 2,107 |
| 61 | Educational services | 8,364 | 10,928 | 2,564 |
| 62 | Health care and social assistance | 49,175 | 53,192 | 4,017 |
| 71 | Arts, entertainment, and recreation | 9,175 | 10,380 | 1,205 |
| 72 | Accommodation and food services | 25,245 | 25,428 | 183 |
| 81 | Other services, except public administration | 21,033 | 24,191 | 3,158 |
| 99 | Government and government enterprises | 42,242 | 41,356 | -886 |
| Total employment | | 396,458 | 408,222 | 11,764 |

Source: USBEA, Essex County Table SA 25 N, Year: 2001 -2006

industries have been adjusted upward by two percent after the primary sector industries were deleted from the calculation of the location quotients. This highlights the concentration of proprietor employment in the state's growth industries compared to the rest of the nation.

Massachusetts significantly exceeded the national share of proprietors as a share of total employment in six industries: educational services (89%), professional and technical services (69%), arts entertainment and recreation (41%), construction (38%), information (38%), and health care and social assistance (18%).

In addition, five other industries (utilities, wholesale trade, finance and insurance, real estate, administrative and waste services) were also above the national average, although less dramatically. There were another six industries where the state was below the national average, and all industries except fishing were below the national average of the primary sector industries. In discussing industry trends, it is once again important to note that, while real estate and construction often show promising growth in these data, their obvious decline since 2006 suggests that these industries hold little short-term growth promise.

Overall, non-primary industry proprietors grew by 177,611 between 2001 and 2006, a 32.6 percent increase (33.3 percent excluding government and primary sectors) as shown in Table 4.

Of equal significance is the fact that employment by proprietors accounted for a noteworthy percentage of total state employment, excluding government employment, as seen in Table 5.

Nearly 20 percent of all non-farm and non-government employment in the state in 2006 was attributable to proprietors.

Table 5 shows total employment, wage-and-salary employment, proprietor employment and sole proprietor employment by industry for Massachusetts for the year 2006. Sole proprietor employment is shown here as a type of proprietor employment, comprising proprietors who do not hire wage-and-salary or any other employees. The difference between proprietor employment and sole proprietor employment in an industry in Table 5 is the number of proprietors who do hire wage-and-salary employees. According to this table, when primary industries and government employment is excluded, proprietors account for 19.7 percent of total state employment. Of these proprietors, 63 percent are sole proprietors without employees; on their own, they account for 12.4 percent of state employment.

While the composite statistics are illuminating in their own right, it is also illuminating to look at specific industries. More than half of the proprietor-owned business establishments in the following industries employed wage-and-salary workers: farming, forestry, fishing, mining, finance and insurance, real estate, corporate management, and accommodations and food services. More than 75 percent of the proprietor-owned businesses in the following industries did not hire wage-and-salary employees: utilities, construction, transportation and warehousing, wholesale trade, educational services, and other services.

The number of Massachusetts proprietors who employed wage-and-salary workers grew by an estimated 58,359 between 2001 and 2006, a 27.7 percent increase.⁵

Many of these proprietor-owned businesses will have had more than five wage-and-salary employees.

The overall trend to note is that the inclusion of proprietor employment means that there was actually slow growth in total employment in the state, and the majority of industries had increases in employment between 2001 and 2006.

The recession that has been underway since December 2007 will very likely lead to a decrease in employment in some industries that had strong growth between 2001 and 2006, especially construction, real estate and financial services. Of these three industries, only financial services is part of the state's export economy.

Recessions have historically been a time when there has been rapid growth in proprietor employment, even as wage-and-salary employment is decreasing. Some of these proprietors will then found successful micro-businesses that will then become successful large businesses and power the state's emerging economy. Unfortunately, we will not have data for another year as to how proprietor employment in Massachusetts performed during 2008, when the recession deepened.

III. EMPLOYMENT TRENDS IN ESSEX COUNTY

Total employment in Essex County grew at a slightly faster pace (3.0 percent, 3.6 percent if government and primary sector employment is excluded) between 2001 and 2006 than did employment in Massachusetts as a whole, which grew 2.2 percent, (2.9 percent excluding government and primary sector employment). Wage-and-salary employment declined about equally during that time period in terms of percentage change.

The growth rate for proprietors in Essex County between 2001 and 2006 was 28.1 percent (29.2 percent excluding government and primary sectors) for the five year period, a lower rate than state growth at 32.6 percent (33.3 percent excluding government and primary sectors). On the other hand, proprietors made up a larger share of total employment in Essex County (22.5 percent) in 2006 than for the state (17.7 percent). If government and primary sector employment is excluded, proprietors accounted for 24.9 percent of Essex County employment and 19.8 percent of statewide employment.

Table 11 shows the change in wage-and-salary employment by industry between 2001 and 2006 for Essex County. There was a 2.6 percent decline in wage-and-salary employment over the period, with the largest decline in manufacturing, followed by information. This reflects the statewide pattern. The largest increases in wage-and-salary employment were in health care and social assistance, professional and technical services, educational services, and administrative and waste services.

Total employment change, including wage-and-salary workers and proprietors, between 2001 and 2006 for Essex County is shown in Table 12. There was three percent growth in total employment over this five-year period. The greatest growth in terms of total number of jobs was in real estate. Other industries that added more than 4,000 new jobs in Essex County were professional and technical services, construction, and health care and social assistance. Real estate and construction

Table 12
Change In Wage And Salary Employment. Essex County: 2001 – 2006

| NAIC # | Line Title 27 | Year 2001 | Year 2006 | Change |
|--|--|----------------|----------------|---------------|
| 11 | Farm wage and salary employment | 0 | 0 | 0 |
| 11 | Forestry, fishing, related activities, and other | 747 | 747 | 0 |
| 21 | Mining | 116 | 117 | 1 |
| 22 | Utilities | 919 | 777 | -142 |
| 23 | Construction | 12,387 | 13,244 | 837 |
| 31 | Manufacturing | 57,190 | 44,047 | -13,143 |
| 42 | Wholesale trade | 13,033 | 12,323 | -710 |
| 44 | Retail trade | 39,979 | 38,318 | -1,661 |
| 48 | Transportation and warehousing | 5,036 | 4,728 | -308 |
| 51 | Information | 8,766 | 6,470 | -2,296 |
| 52 | Finance and insurance | 10,534 | 11,881 | 1,347 |
| 53 | Real estate and rental and leasing | 3,078 | 2,437 | -641 |
| 54 | Professional and technical services | 18,000 | 19,773 | 1,773 |
| 55 | Management of companies and enterprises | 4,951 | 3,153 | -1,798 |
| 56 | Administrative and waste services | 15,419 | 17,123 | 1,704 |
| 61 | Educational services | 7,357 | 9,121 | 1,764 |
| 62 | Health care and social assistance | 42,249 | 46,229 | 3,980 |
| 71 | Arts, entertainment, and recreation | 3,744 | 4,234 | 490 |
| 72 | Accommodation and food services | 23,866 | 23,908 | 42 |
| 81 | Other services, except public administration | 15,207 | 16,506 | 1,299 |
| 99 | Government and government enterprises | 42,242 | 41,356 | -886 |
| Wage and salary employment by place of work | | 324,820 | 316,472 | -8,348 |

Source: USBEA, Essex County Table SA 27 N, YEAR: 2001 -2006

Table 13
Change in Proprietor Employment. Essex County: 2001 – 2006

| NAIC# | Line Title | 2001 | 2006 | Change: 2001-2006 | Change(%) 2001-2006 |
|-------------------------|--|---------------|---------------|----------------------|------------------------|
| 11 | Farm employment | 891 | 757 | -134 | -15.00% |
| 11 | Forestry, fishing, related activities, and other | 1,005 | 937 | -68 | -6.80% |
| 21 | Mining | 130 | 83 | -47 | -36.20% |
| 22 | Utilities | 36 | 51 | 15 | 41.70% |
| 23 | Construction | 8,784 | 12,910 | 4,126 | 47.00% |
| 31 | Manufacturing | 1,705 | 1,833 | 128 | 7.50% |
| 42 | Wholesale trade | 989 | 1,298 | 309 | 31.20% |
| 44 | Retail trade | 6,391 | 7,298 | 907 | 14.20% |
| 48 | Transportation and warehousing | 1,462 | 1,751 | 289 | 19.80% |
| 51 | Information | 1,101 | 1,333 | 232 | 21.10% |
| 52 | Finance and insurance | 3,158 | 4,199 | 1,041 | 33.00% |
| 53 | Real estate and rental and leasing | 8,931 | 14,920 | 5,989 | 67.10% |
| 54 | Professional and technical services | 10,874 | 14,257 | 3,383 | 31.10% |
| 55 | Management of companies and enterprises | 89 | 76 | -13 | -14.60% |
| 56 | Administrative and waste services | 5,523 | 5,926 | 403 | 7.30% |
| 61 | Educational services | 1,007 | 1,807 | 800 | 79.40% |
| 62 | Health care and social assistance | 6,926 | 6,963 | 37 | 0.50% |
| 71 | Arts, entertainment, and recreation | 5,431 | 6,146 | 715 | 13.20% |
| 72 | Accommodation and food services | 1,379 | 1,520 | 141 | 10.20% |
| 81 | Other services, except public administration | 5,826 | 7,685 | 1,859 | 31.90% |
| 99 | Government and government enterprises | 0 | 0 | 0 | 0.00% |
| Total employment | | 71,638 | 91,750 | 20,112 | 28.10% |

Source: USBEA, Essex County Table SA 27 N & SA 25 N, YEAR: 2001-2006

have undoubtedly lost employment since 2006. As in Table 11, the industries with the largest number of job losses between 2001 and 2006 were manufacturing and information.

In terms of growth in wage-and-salary employment, Essex County fared about the same as the state between 2001 and 2006, but because proprietors accounted for a larger share of total employment than was true statewide, Essex County posted total employment growth of three percent.

The 28.1 percent growth in proprietor employment between 2001 and 2006 offset the decline in wage-and-salary employment in Essex County, similar to the statewide trend.

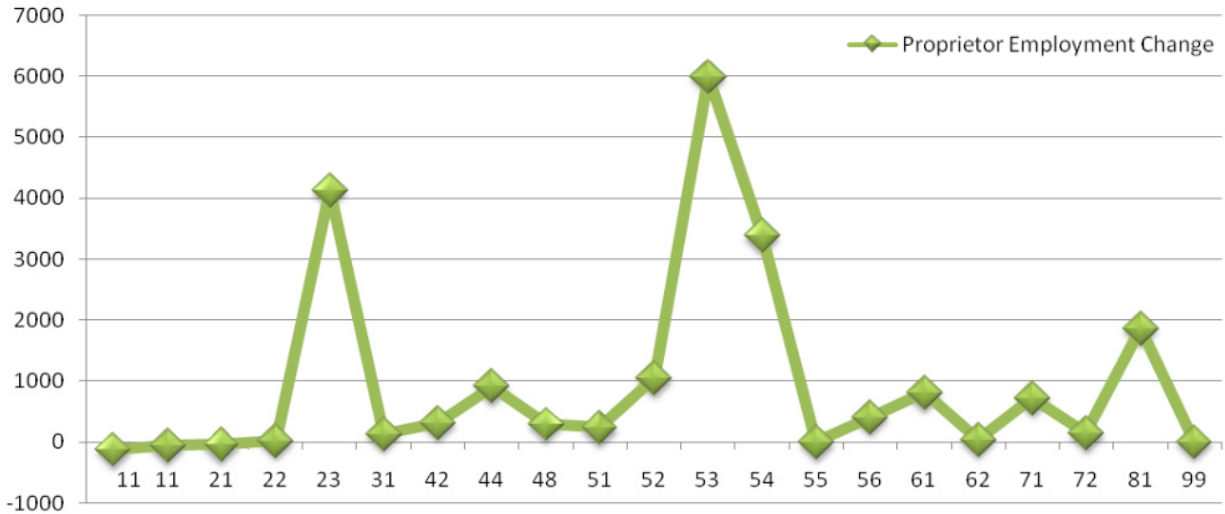
Table 13 shows an increase of 20,112 proprietors, or 28.1 percent, over this five-year period. Excluding government and primary sector employment, there were 20,361 more proprietors, a 29.2 percent increase. The largest numerical increase was in real estate, and the largest percentage

increase was in educational services. Other industries with increases of more than 700 proprietors were construction, professional and technical services, other services, finance and insurance, retail trade, educational services, and arts and entertainment. The line graph in Figure 5 shows these changes in proprietor employment. Other than the industries just listed, changes in proprietor employment were relatively small. In the primary sector industries (farming, forestry, fishing and mining) and in corporate management, there were small decreases in the number of proprietors over the period.

In 2006, proprietors comprised 22.4 percent of total employment in Essex County, 15.5 percent above the national average of 19.4 percent. This increase runs true across many industries.

Table 14 compares the importance of proprietor employment in a specific industry in Essex County versus that same measurement at the national level for the year 2006. When the total number of proprietors as a share of total employment in Essex County is compared with the share

Figure 5
Proprietor Employment change by Industry. Essex County: 2001 – 2006



Source: USBEA, Essex County Table SA 27 N and SA 25 N, YEAR: 2001 -2006

Table 14
Relative Concentration Of Proprietors By Industry. Essex County: 2001 – 2006

| NAIC# | Line Title | Proprietor Employment. (Essex) | Proprietor Employment. (US) | L.Q | Adj .L.Q. |
|----------------------|--|--------------------------------|-----------------------------|----------|-------------|
| 11 | Farm/Agriculture | 757 | 2,115,000 | 0.14 | - |
| 11 | | 937 | 306,500 | 1.15 | - |
| 21 | Mining | 83 | 314,200 | 0.09 | - |
| 22 | Utilities | 51 | 22,700 | 0.83 | 0.96 |
| 23 | Construction | 12,910 | 3,508,900 | 1.38 | 1.6 |
| 31 | Manufacturing | 1,833 | 526,200 | 1.3 | 1.51 |
| 42 | Wholesale trade | 1,298 | 550,800 | 0.89 | 1.03 |
| 44 | Retail trade | 7,298 | 3,238,800 | 0.84 | 0.98 |
| 48 | Transportation and warehousing | 1,751 | 1,249,900 | 0.53 | 0.61 |
| 51 | Information | 1,333 | 496,500 | 1.01 | 1.17 |
| 52 | Finance and insurance | 4,199 | 2,181,800 | 0.72 | 0.84 |
| 53 | Real estate and rental and leasing | 14,920 | 5,229,500 | 1.07 | 1.24 |
| 54 | Professional and technical services | 14,257 | 3,793,800 | 1.41 | 1.64 |
| 55 | Management of companies and enterprises | 76 | 103,700 | 0.28 | 0.32 |
| 56 | Administrative and waste services | 5,926 | 2,523,500 | 0.88 | 1.02 |
| 61 | Educational services | 1,807 | 730,500 | 0.93 | 1.08 |
| 62 | Health care and social assistance | 6,967 | 2,278,900 | 1.15 | 1.33 |
| 71 | Arts, entertainment and recreation | 6,146 | 1,619,400 | 1.42 | 1.65 |
| 72 | Accommodation and food services | 1,520 | 709,200 | 0.8 | 0.93 |
| 81 | Other services, except public administration | 7,685 | 2,996,500 | 0.97 | 1.12 |
| 99 | Government and government enterprises | - | - | - | - |
| Total/Average | | 91,750 | 34,496,600 | 1 | 1.16 |

Source: USBEA (Essex County and US) L.Q = Location Quotients, a measure of concentration.

for the United States as a whole, Essex County was 14 percent above the national average, 16 percent excluding the primary sector industries. In the final column of Table 14, the location quotients for the Essex County industries have been adjusted upward by 16 percent to reflect this difference.

Essex County exceeded the national share of proprietors as a share of total employment in many industries, rather than being driven by just a few sectors. Greater than national increases occurred in arts and entertainment, professional and technical services, construction, manufacturing, health care and social assistance, fishing, real estate, administrative and waste services, educational services, information, and other services.

The primary economic sector industries (farming, fishing, forestry and mining) as a whole employ a much larger share of the work force nationally than in Essex County. Of these four industries, only fishing is more important as a share of total employment in Essex County than it is nationally. Fishing is indeed a vital and active industry in this county. Excluding the primary sector industries and government, which has no proprietor employment, highlights the importance of proprietor employment.

Proprietors comprise 24.9 percent of Essex County employment, 16.0 percent above the national average (21.3 percent) when primary sector and government employment are not included.

While a separate table has not been provided, when the location quotients in Table 14 are adjusted upward by thirty-two percent, the following industries in Essex County, in addition to those listed above, had a larger share of proprietors than nationally: utilities, wholesale trade, finance and insurance, and accommodations and food services. The only two industries where Essex County did not exceed the national average in this adjusted share of proprietors as a percent of total employment were transportation and warehousing, and corporate management.

Clearly, proprietor employment as a share of total employment was high in many industries and is very important in Essex County.

The Enterprise Center at Salem State College previously published *Proprietor Employment and Business Size in Essex County, Massachusetts – 2004*. This report looked at sole proprietors and micro-businesses. It identified 49,494 sole proprietors in Essex County in 2004. Table 15 of this report identifies 59,660 micro-businesses and sole

proprietors combined in Essex County in 2004, so the 49,494 sole proprietors comprised 83 percent of the total number.

According to Table 15, by 2006, there were 4,114 more micro-businesses and sole proprietors, for a total of 63,774, a growth of 6.9 percent over just two years.

Most of the growth (4,004 businesses) in new, small establishments in Essex County between 2004 and 2006 was due to an increase in the number of sole proprietors.

Table 15 shows that most of the growth in Essex County by industry occurred in construction, professional and technical services, and in other services. Once again, construction growth should be discounted. Other industries with more than 250 new establishments in Essex County over this two-year period were educational services, administration and waste management, arts and entertainment, and information.

The last column in Table 16 shows sole proprietor employment by industry for Essex County for 2006 along with total proprietor employment, wage-and-salary employment and the total of all employment. The sole proprietor data comes from the U.S. Census Bureau, while the other data comes from the U.S. Bureau of Economic Analysis.

This table suggests that two industries – utilities and educational services – had more sole proprietors than the total of all proprietors. Obviously, this is not possible; what this contradiction reveals is that the two federal agencies take different approaches to using Schedule C income tax information. If we compare the information in Table 16 with Table 5, we find that proprietors in Essex County who have wage-and-salary employees comprise a slightly larger share than do such proprietors statewide. The state has a larger percentage of sole proprietors with no employees than does Essex County.

When comparing the total number of proprietors with the number of sole proprietors in a given industry, we find that the following industries in Essex County have more than half of the proprietor-owned businesses with wage-and-salary employees: farming, forestry, fishing, mining, manufacturing, finance and insurance, real estate, corporate management, arts and entertainment, and accommodations and food services. This list differs from the statewide list in Table 5 in that it includes manufacturing and arts and entertainment as industries in Essex County, where proprietors are more likely to have wage-and-salary employees than statewide.

Table 15

Total Micro Businesses With One To Four Employees And Sole Proprietors By Industry. Essex County: 2004 & 2006

| NAIC # | Industry Code Description | Total -2004 | Total-2006 | Change | Change % |
|------------------------------|---|---------------|---------------|--------------|--------------|
| 11 | Forestry, fishing, hunting, and agriculture support, Mining | 947 | 926 | -21 | -2.20% |
| 22 | Utilities | 67 | 84 | 17 | 25.40% |
| 23 | Construction | 7,748 | 8,560 | 812 | 10.50% |
| 31 | Manufacturing | 1,153 | 1,129 | -24 | -2.10% |
| 42 | Wholesale trade | 1,542 | 1,587 | 45 | 2.90% |
| 44 | Retail trade | 5,290 | 5,184 | -106 | -2.00% |
| 48 | Transportation & warehousing | 1,843 | 1,957 | 114 | 6.20% |
| 51 | Information | 863 | 1,154 | 291 | 33.70% |
| 52 | Finance & insurance | 2,028 | 2,104 | 76 | 3.70% |
| 53 | Real estate & rental & leasing | 5,147 | 5,138 | -9 | -0.20% |
| 54 | Professional, scientific & technical services | 11,587 | 12,350 | 763 | 6.60% |
| 55 | Management of companies & enterprises | 19 | 20 | 1 | 5.30% |
| 56 | Admin, support, waste mgt, remediation services | 3,733 | 4,068 | 335 | 9.00% |
| 61 | Educational services | 1,470 | 1,955 | 485 | 33.00% |
| 62 | Health care and social assistance | 5,089 | 5,274 | 185 | 3.60% |
| 71 | Arts, entertainment & recreation | 2,934 | 3,239 | 305 | 10.40% |
| 72 | Accommodation & food services | 1,260 | 1,311 | 51 | 4.00% |
| 81 | Other services (except public administration) | 6,940 | 7,734 | 794 | 11.40% |
| Total for all sectors | | 59,660 | 63,774 | 4,114 | 6.90% |

Source: US Census Bureau, Non employer Statistics, 2002-2006 Total for all sectors, Essex County
US Census Bureau, County Business Patterns, number of establishments by employment size - class

Table 16

Types of Employment. Essex County: 2001 – 2006

| NAIC# | Line Title 27 | Wage and Salary | Total Employment | Proprietor Employment | Sole Proprietor Employment |
|------------------------------------|---|-----------------|------------------|-----------------------|----------------------------|
| 11 | Farm Forestry, fishing, related activities, and other | 747 | 2,441 | 1,694 | 844 |
| 21 | Mining | 117 | 200 | 83 | 4 |
| 22 | Utilities | 777 | 828 | 51 | 72 |
| 23 | Construction | 13,244 | 26,134 | 12,910 | 7,111 |
| 31 | Manufacturing | 44,047 | 45,880 | 1,833 | 811 |
| 42 | Wholesale trade | 12,323 | 13,621 | 1,298 | 1,079 |
| 44 | Retail trade | 38,318 | 45,616 | 7,298 | 3,866 |
| 48 | Transportation and warehousing | 4,728 | 6,479 | 1,751 | 1,736 |
| 51 | Information | 6,470 | 7,803 | 1,333 | 967 |
| 52 | Finance and insurance | 11,881 | 16,080 | 4,199 | 1,583 |
| 53 | Real estate and rental and leasing | 2,437 | 17,357 | 14,920 | 4,690 |
| 54 | Professional and technical services | 19,773 | 34,030 | 14,257 | 10,715 |
| 55 | Management of companies and enterprises | 3,153 | 3,229 | 76 | 0 |
| 56 | Administrative and waste services | 17,123 | 23,049 | 5,926 | 3,418 |
| 61 | Educational services | 9,121 | 10,928 | 1,807 | 1,852 |
| 62 | Health care and social assistance | 46,229 | 53,192 | 6,963 | 4,554 |
| 71 | Arts, entertainment, and recreation | 4,234 | 10,380 | 6,146 | 3,028 |
| 72 | Accommodation and food services | 23,908 | 25,428 | 1,520 | 616 |
| 81 | Other services, except public administration | 16,506 | 24,191 | 7,685 | 6,552 |
| 99 | Government and government enterprises | 41,356 | 41,356 | 0 | 0 |
| Employment by place of work | | 316,472 | 408,222 | 91,750 | 53,498 |

Source: USBEA, Essex County Table SA 27 N and SA 25 N, YEAR: 2006; US Census Bureau, Non employer Statistics, 2006

Seventy-five percent or more of proprietor-owned businesses in the following industries in Essex County did not have wage-and-salary employees: utilities, wholesale trade, transportation and warehousing, professional and technical services, educational services, and other services.

While the exact percentages for specific industries may be in question, given the difference in methodologies used to estimate the number of proprietors by the U.S. Bureau of Economic Analysis and sole proprietors by the U.S. Census Bureau, it is nonetheless clear that, during the study period, a larger share of proprietors in Essex County worked alone than was the case statewide. There were variations by industry; more Essex County proprietors in the professional and technical services industry were sole proprietors than was true at the state level; on the other hand, proprietors in the construction industry in Essex County were more likely to have wage-and-salary employees than was true statewide.

In summary, proprietors, including sole proprietors, and their growth rate were more important in Essex County than for the state as a whole between 2001 and 2006.

- The number of proprietors as a share of total employment is higher in Essex County than it is for either Massachusetts or for the U.S. as a whole. This is especially true if the primary economic sector industries are not considered, even though this would leave out fishing, which is an important industry in Essex County.
- Out of the 72,047 corporations, partnerships, and proprietorships in Essex County in 2006,⁶ 63,774 had four or fewer wage-and-salary employees or were sole proprietorships. These micro-businesses accounted for 88.5 percent of all establishments, a very high share for an urban/suburban area.

Over the five-year period between 2001 and 2006, wage-and-salary employment decreased by 2.6 percent in Essex County (Table 11), yet total employment in the county grew by 3.0 percent, due to the increase in proprietors, which grew by 28.1 percent in five years.

Proprietors with wage-and-salary employees are growing rapidly, up 65 percent between 2001 and 2006.

The U.S. Census Bureau did not publish sole proprietor data for 2001, but it is possible to make some valid assumptions about these proprietors using other data. U.S. Census Bureau data does indicate that the number of sole proprietors with no employees grew by 10.3 percent during these five years. Assuming this is correct, we can use data from Table 16 to calculate 48,502 sole proprietors in 2006 and, therefore, 23,136 proprietors with employees. Table 16 identifies 38,252 proprietors with wage-and-salary employees in 2006, a growth of 65.4 percent over the five-year period.

This rate of increase is nearly triple the statewide increase for proprietors with wage-and-salary employees of 22.7 percent. If these data are correct, it shows that an important share of newly formed businesses with wage-and-salary employees in the state and in Essex County have been organized as proprietorships, rather than as corporations. Thus, proprietorships are creating growth in wage-and-salary employment, while corporations are losing wage-and-salary employees.

IV. CONCLUSIONS

The inclusion of proprietor data in studying employment trends in Massachusetts casts a completely new light on the state of the Commonwealth's and Essex County's economies. The most notable findings are discussed below.

Although wage-and-salary employment declined between 2001 and 2006 for both Massachusetts and Essex County, growth in proprietor or self-employment occurred at such a rapid rate that total employment actually grew for both Massachusetts and Essex County.

This finding contradicts reports in the media that employment has been declining in the state since 2001 because those reports are based only on wage-and-salary employment, which excludes more difficult to obtain proprietor employment data.⁷ Between 2001 and 2006, statewide wage-and-salary employment did decrease by 88,513 jobs. However, total employment grew by 89,138 jobs, which can be attributed to the fact that there were 177,651 more proprietors working in the state in 2006 than there were in 2001.

This report also identifies specific sectors that enjoyed significant employment growth during the study period, especially the “professional, scientific and technical” industrial sector. There was also growth in the number of proprietors in industries such as information, arts and entertainment and “other” services. Interestingly, these are the same sectors that the Enterprise Center, The Salem Partnership and the Creative Economy Association of the North Shore had already identified, based on their day-to-day experience with small businesses on Boston's North Shore, as having high growth potential.

This trend may have been more noticeable in Essex County, as it experienced an even faster rate of growth in proprietors than did Massachusetts as a whole and across a broader range of industries. In addition to the industries listed with rapid growth in proprietors statewide, Essex County has also seen rapid growth of proprietors in wholesale trade, finance and insurance, and educational services.

Other industries with growth in proprietor employment in Massachusetts between 2001 and 2006 include construction and real estate, although these sectors have undoubtedly declined in employment during 2007 and 2008.

The second important finding of this study is that self-employed proprietors are a significant, yet overlooked contributor to both the state and the Essex County economy. The share of total employment made up by self-employed proprietors is approximately the same in Massachusetts as appears nationally, but is higher in Essex County than nationally.

This excludes employment in agriculture, forestry, fishing, mining (the primary sector industries) and government, which, with the exception of fishing, are not significant sectors of the state economy. When these primary economic sectors and government are excluded, Massachusetts is 8.8 percent lower than the national average, where proprietors account for 19.4 percent of employment.⁸

Nearly one out of every five employed people in Massachusetts is a proprietor. In Essex County, one of every four workers is a proprietor.

In Massachusetts, 19.8 percent of total employment in these other industries is made up of proprietors. The numbers for Essex County are even more dramatic: 24.9 percent of total employment in these other industries is proprietors, which is 16.9 percent greater than the national average.

These are not necessarily one-person “kitchen table” operations. The federal agency data also show that, although sole proprietors outnumbered proprietors with employees overall, there are several sectors where proprietors with employees are growing more rapidly than their sole proprietor counterparts.

The discrepancies in earnings between proprietors and their wage-and-salary peers in the same industry highlights how little we know about proprietors. We have no research to tell us whether they have second jobs, a part-time business, will always be small or simply need help to grow. They may also be experiencing the financial stress that many proprietors experience initially. We need to know more about these business owners and the kind of support that they need. Also, more research is needed on micro-businesses and sole proprietorships in Massachusetts using the U.S. Census Bureau business history database. This can answer questions about businesses' rates of founding, growth, decline, longevity and death.

There are undoubtedly additional conclusions to be drawn from these findings as the results are probed more deeply. But even at a cursory level one thing is clear:

These findings carry major implications for economic development in both Massachusetts and Essex County.

- Proprietors can be a powerful engine to recharge a depressed economy. They have grown in number when larger businesses have declined, and should continue to do so as historically many people turn from wage-and-salary to self-employment during a recession.
- Most companies start small. Today's proprietor may become a giant of the future economy. Allstate Insurance began during the Great Depression, EBay was founded and Monster.com took off as a business during the last recession.
- Because the importance of proprietors to state and regional economies has been under reported, these businesses are also under served. Directing more economic development dollars and support services to these businesses may pay big dividends.

Specific industries emerge from the findings of this report to provide additional guidance on where and how best to allocate business development resources. In particular, "professional, scientific, and technical" businesses demonstrated the most rapid growth, followed by information, arts and entertainment, "other" services, and health care and social services.

Massachusetts needs to act.

Other states are recognizing both the importance and potential of proprietors, as documented by studies in states as diverse as Maryland, Nebraska and Tennessee.⁹ Massachusetts needs to acknowledge that self-employment is as much a "job" as wage-and-salary employment. It needs to applaud and encourage those exploring the opportunities – and taking the risk – of self-employment.

What can the state do?

- Include self-employment in reports on employment on at least an annual basis.
- Conduct research so that self-employment is included in reports on the labor force. It is important to understand and clarify how we think about employment. Currently, someone who leaves the wage-and-salary labor force to become self-employed is nothing more than a drop out. If self-employment is a "real" job, then we need to understand the "real" unemployment rate.
- Lean more about the self-employed and their needs. Encourage research by academia and by the state and federal government. We need to know who is a proprietor, how long they have been in business, whether they have other jobs or run their business on a part-time basis. We also need to know what kind of support makes sense. From its day-to-day work, the Enterprise Center has identified proprietor needs in Essex County that are quite probably true statewide. These needs include the following:
 - The skills to run a business
 - Better access to affordable health care
 - Better access to retirement savings options
 - Better access to micro-loans

The growth of proprietors in Massachusetts is a phenomenon not to be taken lightly. This is not a transitory fad, but a permanent sea change in how we work. Technology has enabled people to do more with fewer people. It has enabled them to work from home, yet link to vendors, customers, and partners anywhere in the world. This means that the opportunities for self-employment will continue to grow, perhaps even more in an economy where it is easier than ever for those who are laid off to start their own business. Becoming a proprietor is not only an increasingly viable employment option for individuals, but also a source of economic potential and growth for Massachusetts.

REFERENCES

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www.bea.gov. Most of the information used in this report is from the U.S. Bureau of Economic Analysis including wage-and-salary employment, proprietor employment, and sources of earnings for all geographic areas used in this report.

www.census.gov. The information on business size and sole proprietor businesses is obtained from the U.S. Census Bureau. Essex County data is found at the County Business Patterns part of this website. Sole proprietor information is found at Non-Employer Statistics.

ENDNOTES

¹ The data on sole proprietors used in this report are available on the U.S. Census Bureau website (www.census.gov). All other data used in this report can be found on the website of the U.S. Bureau of Economic Analysis (www.bea.gov). The data used in this report was presented on these websites during 2008. These data are revised annually by the federal agencies. As a result, there are occasional differences in data for the same category, depending on when data were posted.

² Unless otherwise indicated, all comparative figures and percentages in this report are for the period from 2001 through 2006.

³ Primary sectors are concerned with the extraction or removal of resources from the nation's land and water. They include farming, fishing, forestry, and mining.

⁴ Goldstein, Mark; "Job Growth Continues to Slow in Maryland and the U.S." State of Maryland Department of Planning, Annapolis, MD, 2008, p. 1.

⁵ Table 5 provides 2006 data. Data for 2001 was not available and was thus calculated using the 2002 ratio of proprietors with employees in Census Bureau data and total proprietor data from Bureau of Economic Development data.

ACKNOWLEDGEMENTS

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⁶ The number of businesses in Essex County in 2006 was estimated from Census Bureau data on sole proprietors and businesses with wage-and-salary employees.

⁷ As noted earlier, the use of wage-and-salary data exclusively can be attributed to the fact that these data are reported monthly by the Massachusetts Executive Office of Labor and Workforce Development and are easily accessed. By comparison, proprietor data must come from Schedule C filings, which are not publicized and which have an eight to 18-month delay to publication.

⁸ When all industries (including primary sector industries and government) are considered, then Massachusetts falls nine percent below the national average in terms of the share that proprietors comprise of total employment, largely due to the relative importance of self-employed farmers in other states.

⁹ See the following reports: *Entrepreneurship in Tennessee* by the Institute for Public Service at the University of Tennessee, 2008. *Non-Farm Proprietors and the Nebraska Economy: 1997-2006* by Randy Cantrell, University of Nebraska-Lincoln, 2008; and *Job Growth Continues to Slow in Maryland and U.S.* by Mark Goldstein, Maryland Department of Planning, 2008.