



UMASS DONAHUE INSTITUTE



Pioneer Valley Growth Business Study

Prepared for the Pioneer Valley Growth Business Study Group:

Common Capital, Inc.
Franklin Regional Council of Governments
Massachusetts Growth Capital Corporation
MassMutual Financial Group on behalf of Develop Springfield
Massachusetts Small Business Development Center Network
Pioneer Valley Planning Commission
Western Massachusetts Economic Development Council

by
UMass Donahue Institute
Economic and Public Policy Research

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Sponsors



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Executive Summary

Purpose and Background:

The Economic and Public Policy Research (EPPR) group at the UMass Donahue Institute was engaged to conduct research in support of the efforts of seven organizations to grow the Western Massachusetts/Pioneer Valley economy by supporting the needs of growth oriented companies. In this study, the sponsors intended to identify not just high growth companies but companies growing at all levels, including those that have a slower sustained growth over time and those that may be slow growing or not currently growing but have potential for growth. The research, including an analysis of data about Pioneer Valley businesses and conducting a survey of these businesses, sought to improve the understanding of the business needs and success factors of sustained growth-oriented companies within the region. The research focused on small to medium-sized businesses in the region with 5 to 500 employees.

The objectives of the sponsors are to use the research findings to support their efforts to:

1. Drive the creation and growth of businesses in the region by developing a supportive financing and business assistance environment and by demonstrating/recognizing the success of existing businesses.
2. Increase and sustain job creation and retention.
3. Enhance the long term expansion and sustainability of the economic base in the region.

To support these objectives, this economic research was designed to help:

1. Identify growth oriented businesses and industry sectors in the Pioneer Valley, understand their characteristics, determine what has contributed to their success, and determine the challenges and constraints to continued growth.
2. Identify businesses that are not growing in order to assist the sponsors to better target businesses and industry sectors with the potential to grow if constraints are addressed.
3. Identify the types of business assistance that would address growth needs (technical assistance, financing options, regulatory, networking, etc.).
4. The intention is that the data gathered from the study will be used to enhance business assistance programs in the region, to best target capital resources to growth oriented businesses, and for economic development benchmarking and planning.

It is important to note that the study period spanned the “Great Recession of 2007-2009.” Not unexpectedly, the growth tier with the largest number of businesses was the “stable” category. One of the most significant conclusions of the study is that the Pioneer Valley region remained relatively resilient even during the greatest global economic crisis in recent history with still lingering impacts. As a result, it was more difficult to identify growing businesses because the global economic environment severely restricted growth potential during the study period. Still, over 550 firms in the region had positive job growth during this challenging economic time period and many more had positive sales growth, providing some evidence of efforts by firms to increase revenue and productivity, maintain competitiveness, and hire new workers more cautiously. The sponsors proceeded with

the study knowing these constraints with the intent of setting a baseline understanding from which to conduct further analysis in the future.

The National Establishment Time Series (NETS) database was chosen as the evaluation tool because it offers historical firm-level data on a wide variety of business statistics over a 20 year time period.

Key Findings:

This study of business growth in the Pioneer Valley, with a focus on establishment level data, provides two key areas of understanding. First, the profile of small to medium-sized businesses in the study group sheds light on the mix of establishments by industry, growth in jobs and sales, and location. Second, the completion of 171 detailed business surveys provides a rich set of business feedback on the region's economic conditions in terms of success factors, barriers to growth, and areas for business and financial assistance. Key findings from this study include:

- Small businesses predominate in the Pioneer Valley: 72 percent of firms in the study group have fewer than 20 employees and the majority of the businesses responding to the telephone survey, 53 percent, have 10 employees or less. (Note: Businesses with five employees or under and more than 500 employees as of 2005 were excluded from the survey.) The region's distribution of firms by number of employees is similar to Massachusetts overall, with slightly fewer large firms in the Pioneer Valley.
- The vast majority (80%) of small to medium sized firms in the Pioneer Valley had stable job growth from 2005 to 2010, a time period in which the region saw a 4.8 percent decrease in total establishments and 6 percent decrease in total employment. The large number of firms that experienced stable or positive job growth, along with many more that increased sales revenue, helps demonstrate the resilience of the economy during the Great Recession of 2007 to 2009, and the dynamic nature of small to medium -sized businesses.
- Some subsectors in the region are growing at a faster rate than firms generally are in the region. Several specialized types of construction, financial services, manufacturing and retail establishments in the region all have greater shares of fast growing firms (5-11 percent of total firms in each sector) than the overall study group (4 percent). Additionally, when looking at all growing firms, these sectors have much larger shares of growing firms (10-21 percent) than the study group overall (9 percent).
- Of the fast growing firms, 91% percent were small businesses with 5-99 employees. The two employment tiers with the largest number of fast growing firms were in the 10-19 employment size range at 37%, followed by the 20-49 employment size range with 32% of all fast growing firms.
- Forty percent of businesses surveyed expect to grow their firm's number of employees within the next three years. Forty-nine percent expected to stay the same size, while about two percent expected to decline. In addition, 74 percent of businesses reported expecting their sales to grow in the next three years.
- More sales growth than job growth was experienced during the study period and is projected for the future. The historical data on job and sales growth, along with projections of higher sales growth than job growth, provides evidence of businesses expanding revenue while holding the number of employees

constant – signs of productivity increases and more cautious hiring plans. It appears it took moderate to fast sales growth (25-50 percent and higher) before companies tended to hire during the study period.

- Over 75% of surveyed firms report their ability to innovate new products and services is good or excellent (50% good and 29% excellent).
- The primary market for surveyed businesses is Western Massachusetts and the Northeast. Half of all surveyed firms indicated their primary market was local (Western Massachusetts) and 22 percent of firms indicated their primary market was regional (Northeast).
- Sixty-six percent of surveyed businesses thought the Pioneer Valley was a good or excellent location for their business to succeed, with 45 percent of responding businesses indicating good, and another 21 percent indicating it was an excellent location for success.
- The Pioneer Valley's skilled workforce is a key to making or breaking a business: 45 percent of firms (and 54 percent of growing firms) named the availability of a skilled workforce as a major contributor to their success, while 35 percent of firms (and 41 percent of growing firms) cited the lack of availability of skilled workers as a major barrier to success.
- The top five major success factors cited by businesses surveyed were: market demand for products or services, availability of skilled workers, management and leadership capability, access to suppliers and vendors and innovation, product and/or technology improvements. The top three factors for growing firms (54% stating a major factor) were skilled workers, management and leadership, and access to financing.
- The top five major barriers to success cited by businesses surveyed were: the cost of doing business (labor, real estate, taxes, energy, etc.), availability of skilled workers, market demand, permitting/regulations, and cash flow management.
- Permitting/regulations (28 percent) and cash flow (23 percent) are the fourth and fifth greatest barriers to success for all firms. For growing firms, the rank order of these barriers was reversed, cash flow (23 percent) and permitting/regulations (18 percent).
- Cash flow; the need for new equipment, technology, process or efficiency; and obtaining financing are all mid-level barriers to success for all firms, and for all growing firms. These issues provide some evidence of the need for financing assistance by regional firms.
- The top five needs for business assistance among survey respondents were market and customer research, advertising and marketing, social media and website optimization, employee recruitment and training, and operations/strategic planning and leadership management training.
- Firms that anticipate needing financing in the next three years primarily plan to use it to purchase new equipment or technology, expansion or acquisition, or for working capital. Most firms surveyed who received financing in the past year received bank loans or lines of credit.

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The objectives of the sponsors are to use the research findings to support their efforts to:

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¹ In this study, we define the Pioneer Valley as Hampden, Hampshire and Franklin counties.

the study knowing these constraints with the intent of setting a baseline understanding from which to conduct further analysis in the future.

The National Establishment Time Series (NETS) database was chosen as the evaluation tool because it offers historical firm-level data on a wide variety of business statistics over a 20 year time period.

Methodology

EPPR undertook this study of business growth in Pioneer Valley using a variety of methods. Using proprietary time-series establishment level data from the National Establishment Time Series (NETS) database, we were able to examine and categorize business growth in the region between 2005 and 2010. The establishment data is used to develop a detailed profile of small to medium-sized businesses across the region. A telephone survey was then conducted to obtain up-to-date data on many of these firms and get their perspective on success factors, challenges and opportunities for growth in the Pioneer Valley. The methodology left open the opportunity for the sponsors to conduct more detailed one-on-one or focus group interviews at a later date to gather additional information from targeted businesses by growth category or industry sector. The following section gives more detail on the methods used to produce the study's findings.

Defining the Study Group

EPPR worked closely with the study sponsors to compile a meaningful list of firms in the Pioneer Valley that could be analyzed using the NETS data attributes, and that could also be used as the basis for sampling for the telephone survey. The study sponsors sought to focus on firms of particular sizes and within particular industry sectors that they were most well poised to reach out to with their service offerings.

The analysis focuses on the growth of businesses in the region between 2005 and 2010, the latest year available in this dataset. In consultation with the study sponsors, EPPR developed a framework for identifying relevant firms for this study and creating a set of growth tiers based on employment growth rates. The following criteria were used for the analysis:

- Businesses geographically located in the Pioneer Valley – defined as Franklin, Hampshire, and Hampden, counties.
- Businesses with employment in 2005 between 5 and 500 employees and that remained in existence in 2010.
- The study focused primarily on for-profit businesses considered to be in the growth stage of the business cycle that would most likely benefit from small business assistance services.
- The study focused primarily on private for-profit commercial entities. Large non-profit institutions, public entities, and social services were excluded from the analysis. In some cases, only portions of larger industries were excluded from the study group, such as in educational services (NAICS 61) and health care and social assistance (NAICS 62) so as not to exclude for-profit commercial entities.

Table 1 shows the numbers of NETS records corresponding with the filters and exclusions used to compile the final study group. Table 2 outlines the industries that were eliminated from the study group.

Table 1: Pioneer Valley Businesses - Parameters Used to Define Study Group of Firms

Study Group Parameters	Number of Firms
NETS firms open in 2010, with employment figures reported in 2005 and 2010	26,156
NETS firms with less than 5 employees in 2005 excluded	17,850
NETS firms with 500 or greater employees in 2005 excluded	34
NETS firms excluded by selected NAICS code	1,714
Total firms included in Study Group, after filters and exclusions	6,558

Source: UMDI in consultation with study sponsors, National Establishment Time Series (NETS) Database, Walls & Associates

Table 2: NAICS exclusions of Study Group Firms by Industry Sector

Description of Selected NAICS Industry Sectors Excluded:	Removed NAICS Sectors:	2012 NAICS Definitions:
All Utilities	22	Utilities
All Real Estate	531	Real Estate
Partial Removal of Educational Services (NAICS 61) (Kept specialized professional training programs)	6111 6112 6113	Elementary and Secondary Schools Junior Colleges Colleges, Universities and Professional Schools
Partial Removal of Health Care & Social Assistance (NAICS 62) (Kept daycare providers, nursing homes and private medical offices)	62141 62142 621991 622 6232 6241 6242 6243	Family Planning Centers Outpatient Mental Health and Substance Abuse Centers Blood and Organ Banks Hospitals Residential Mental Retardation, Mental Health and Substance Abuse Facilities Individual and Family Services Community Food and Housing, other Emergency and Relief Services Vocational Rehabilitation Services
All Religious, Grantmaking, Civic, Professional and Similar Organizations	813	Religious, Grantmaking, Civic, Professional and Similar Organizations
All Private Households	814	Private Households
All Public Administration	92	Public Administration

Source: UMDI in consultation with study sponsors, U.S. Census Bureau North American Industry Classification System (NAICS)

Identifying Employment Growth Tiers

Next, in collaboration with the study sponsors, the various growth tiers (categorizing businesses by their rate of employment growth) for analysis were defined. Records from the NETS data were used to determine area businesses' employment change from 2005 to 2010. The data were then sorted into five tiers along ranges of growth rates of interest to the study sponsors. Data on business sales was also analyzed along these same breakdowns. These growth tiers are defined as follows:

Table 3: Growth Tiers for Analysis of Study Firms

Employment Growth Tier	Rate of Employment Growth
Fast	50% and greater
Moderate	25% to > 50%
Slow	> 0% to < 25%
Stable	0%
Decline	Less than 0%

Source: UMDI in consultation with study sponsors

Data Limitations

The NETS data set used in this study provides time-series firm-level data for a given region on a variety of business statistics. The data set is released with a two year lag, so the data used were updated through 2010. In some cases, the contact information for companies was out of date. The NETS data set, based on the Dunn and Bradstreet business survey, also has some limitations. While Walls and Associates (authors of the NETS data set) do their own work to impute missing values for employment and sales information for each company, not every company completes each question of the survey, and therefore some of the variables have less complete coverage than others. These variables (legal status, women or minority owned business, export/import status, etc.) are included only in Appendix A of this report, as the information they offer is limited due to their sparse coverage across companies.

The NETS data cannot be directly compared to other publicly available datasets of establishments based on government surveys or administrative records (i.e. ES-202), since the method of gathering the information differs. Therefore, these data should not be directly compared to other public measures of employment or establishments in Massachusetts or the Pioneer Valley.

The population of firms within Pioneer Valley used for this survey was just over 6,500. As noted previously, this is a subset of the larger population of firms in the NETS dataset for the Pioneer Valley region in existence in 2010 (more than 41,900). As the study group is filtered by various categories (employment growth rate, county, industry, size, etc.) the numbers of firms within each category end up being increasingly small. Consequently, results generated by the 171 completed business surveys do not allow for statistically-supported statements across specific categories of firms, the information *can* be used to describe how the surveyed companies, who fall into various categories, responded. The data thus provides overall indications of the relative perceptions of barriers and factors for success among survey respondents, as well as their expectations about growth, their interest in business assistance services, and their experiences with financing.

Developing and Implementing the Survey Instrument

EPPR worked closely with the study sponsors to develop questions that would lead to the collection of information to help inform training, financing, and other business assistance programs in the Pioneer Valley and also to give a profile of small businesses in the region. The instrument was designed to be administered by phone, and as such had to be limited in length. A professional survey firm was contracted to administer the survey. EPPR provided the survey firm with the instrument and a list of businesses (firm name, company executive and phone number) to use in sampling. The sample was randomly generated within certain priority areas (fast growing firms, and seeking a representative distribution across each county and most industries). Since the great majority of businesses in the study were stable in employment growth, fast growing businesses were oversampled in order to capture more information about these types of businesses. Stable businesses still remained the largest surveyed group. The survey was administered during the weeks of December 10 – 20, 2012 and January 16 – 23, 2013. Over 2,600 calls were made by the survey firm yielding 171 completed phone surveys providing a substantial base of information for analysis.

The instrument (see Appendix B) consisted of 14 questions covering general business characteristics (employment, sales, market, etc.), and factors contributing to the success of the business, barriers to growth, training programs of interest, and financing.

Survey Analysis

The survey data were analyzed for descriptive information across all questions (see Analysis and Results). In some instances, survey response data was cross-tabbed with NETS data to give additional information about the respondents.

A total of 171 respondent businesses completed surveys. Two additional incomplete surveys were excluded from the analysis, as they offered no information about the responding businesses beyond their size. Additional detail from the survey can be found in Appendix C.

Analysis and Results: NETS Data

Overview

As described above, this research consisted of two primary activities: 1) an analysis of a proprietary, secondary business establishment database with historical trend data on firms in the Pioneer Valley (the “NETS data”); and 2) the implementation and analysis of a business survey of a sample of these firms. The following section focuses on the analysis of study firms using the NETS data. See Methodology for more detail on the methods, data, and survey design used to produce the following findings.

NETS Data Analysis

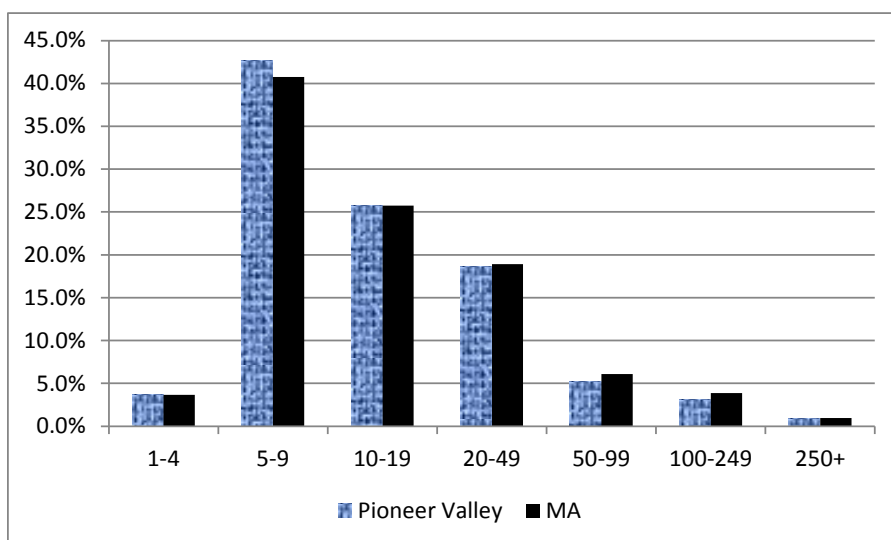
Profile of Pioneer Valley Study Group Businesses

The following section breaks down the characteristics of the study group of firms (hereafter referred to as “study firms”) by employment size, county, employment growth tier, sales growth tier, and industry sector. In some cases, the data are further disaggregated by county or compared with the state overall.

Study Firms by Size

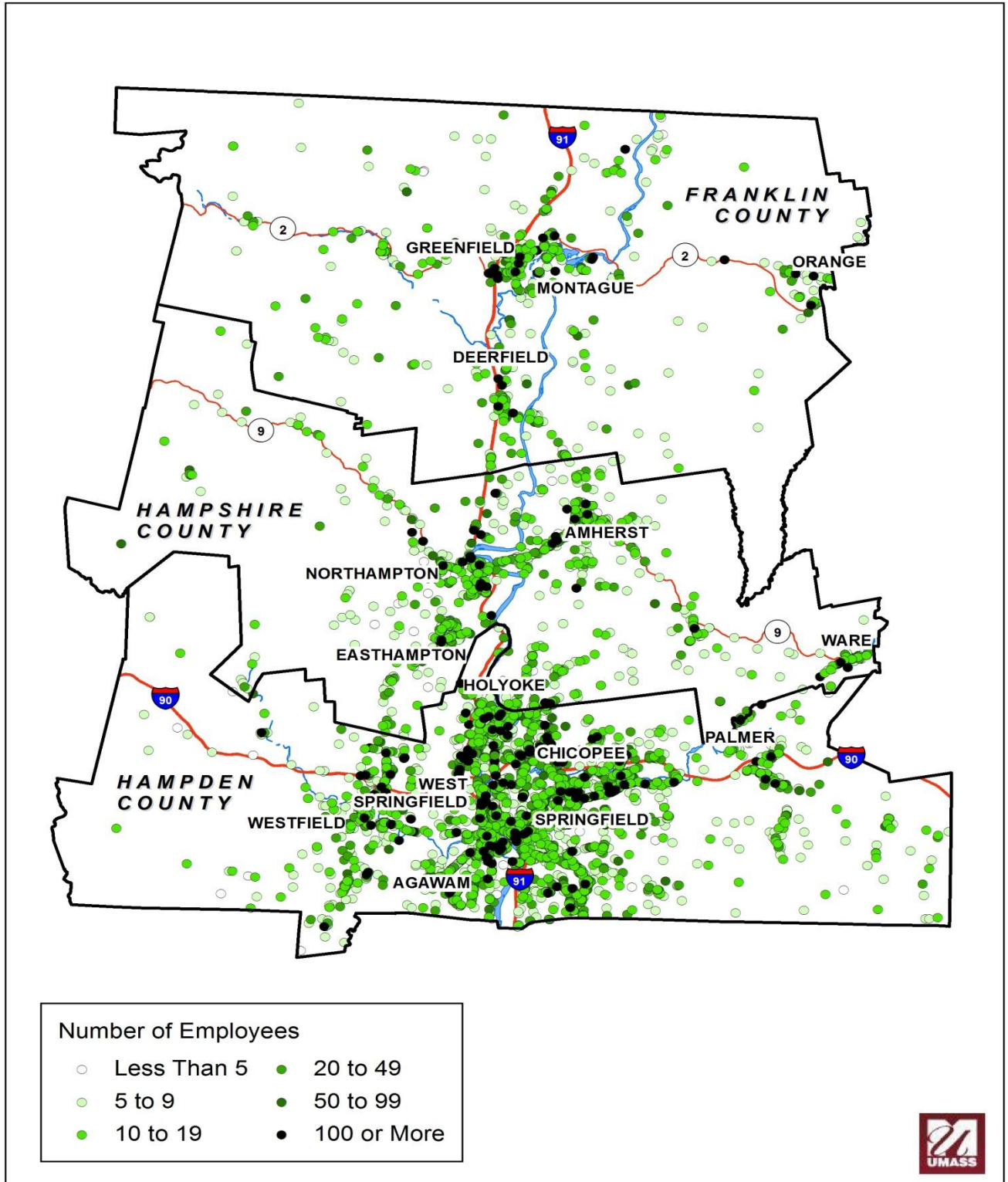
Using the NETS data, the analysis of study firms suggests that the vast majority of businesses in our study group in the Pioneer Valley are small, with less than 50 employees. Over 90 percent of all firms in the NETS data set study group had employment under 49 and nearly half of those firms employed between 5 and 9 workers. Fewer than 10 percent of the universe of firms had more than 50 employees, and nearly 1 percent of firms employed more than 250 workers. This employment size mix mostly mirrors the state overall when using the same parameters as the Pioneer Valley study group, with slightly fewer large firms than in Massachusetts statewide.

Figure 1: Percent Total Study Firms by Employment Size, Pioneer Valley and Massachusetts, 2010



Source: National Establishment Time Series (NETS) Database, Walls & Associates

Figure 2: Map of Study Firms by Employment Size in Pioneer Valley, 2010

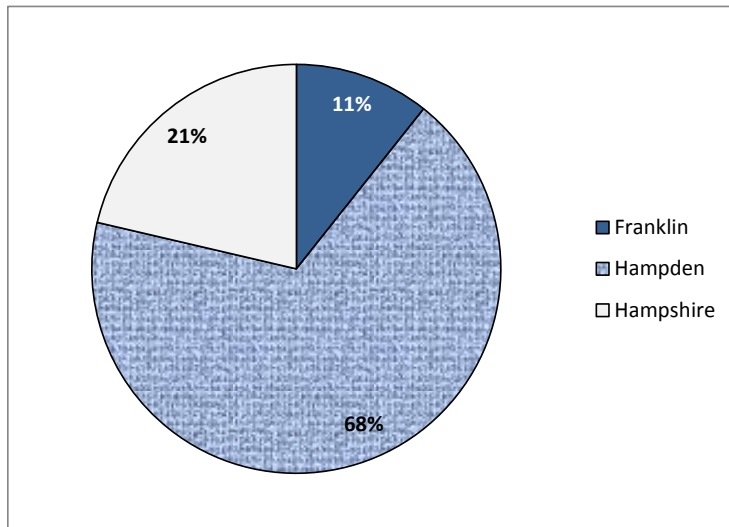


Source: National Establishment Time Series (NETS) Database, Walls & Associates; Office of Geographic Information (MassGIS) produced by UMDI

Study Firms by County

Consistent with its population size and multiple urban areas, Hampden County is home to the majority of study firms in the region. Approximately two-thirds of firms in the study group are located in Hampden County. More than 20 percent of study firms are located in Hampshire County and approximately 11 percent are in Franklin County.

Figure 3: Number of Study Firms by County



Source: National Establishment Time Series (NETS) Database, Walls & Associates

Study Firms by Growth Tier

The vast majority of study firms, 80 percent, had stable employment between 2005 and 2010. A significant number of firms, approximately 1 in 10, experienced employment declines during the same five year period. About the same proportion (9 percent) of study firms in the region grew over the time period. Of this group, only 4 percent (247 firms) were considered “fast growers” under the growth tier guidelines. This distribution by growth tier mirrors the distribution of study firms by growth tier in Massachusetts overall when using the same parameters as the Pioneer Valley study group.

The Great Recession that occurred during this time period almost certainly lowered the number of growth firms in the Pioneer Valley (and statewide) if compared to other time periods. For example, according to data from the U.S. Census Bureau’s County Business Patterns, the total number of establishments in the Pioneer Valley decreased by 4.8 percent from 2005 to 2010. This was a slightly larger decrease than the experience statewide (3.1 percent decrease).

Table 4: Study Firms in the Pioneer Valley and Massachusetts by Employment Growth Tier, 2005-2010

Employment Growth Tier	Pioneer Valley		Massachusetts	
	Number of Firms	Percent of Total	Number of Firms	Percent of Total
Fast	247	4%	3,271	5%
Moderate	148	2%	1,627	2%
Slow	166	3%	1,777	2%
Stable	5,294	81%	58,064	80%
Decline	703	11%	7,444	10%
Total	6,558	100%	72,183	100%

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

Study Firms by Size and Growth Tier

The next table shows the distribution of growth tiers by establishment size in employees. The two employment tiers with the largest number of fast growing firms were in the 10-19 employment size range at 37%, followed by the 20-49 employment size range with 32% of all fast growing firms.

Table 5: Percent of Study Firms by Size and Employment Growth Tier, 2005-2010

Employment Size Range	Employment Growth Tier					
	Fast	Moderate	Slow	Stable	Decline	Total
Size 250+	3.6%	1.4%	0.0%	0.8%	0.6%	0.8%
Size 100-249	5.3%	4.1%	4.8%	3.1%	2.6%	3.2%
Size 50-99	11.3%	8.8%	7.2%	4.9%	4.1%	5.2%
Size 20-49	32.4%	25.0%	26.5%	18.7%	9.8%	18.6%
Size 10-19	36.8%	28.4%	24.1%	26.5%	16.5%	25.8%
Size 5-9	10.5%	32.4%	37.3%	46.1%	31.6%	42.7%
Size 1-4*	0.0%	0.0%	0.0%	0.0%	34.9%	3.7%
Total	100%	100%	100%	100%	100%	100%

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

*Note: The size range 1-4 is included because it represents firms that had 5 or more employees in 2005, but who had employment declines from 2005 to 2010 that resulted in employment in 2010 below our study group parameters.

Companies with declining employment and companies in the 1-4 employment size range were not the focus of this study.

Study Firms by County and Growth Tier

The growth tier breakdown across counties is generally consistent with the study group overall. Across Franklin, Hampden and Hampshire Counties, approximately 80 percent of businesses witnessed stable employment between 2005 and 2010. Hampshire County has a slightly lower percentage of fast growers (3 percent) than Franklin and Hampden County, and a slightly higher percentage of stable firms (82 percent).

Table 6: Percent of Study Firms by County and Employment Growth Tier, 2005-2010

Employment Growth Tier	Franklin County	Hampshire County	Hampden County
Fast	4%	3%	4%
Moderate	3%	2%	2%
Slow	2%	2%	3%
Stable	80%	82%	80%
Decline	11%	11%	11%
Total	100%	100%	100%

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

Study Firms by Employment and Sales Growth

The next table examines growth in sales along the same tiers as employment growth, with many more firms experiencing sales growth or decline. Based on an analysis of sales growth for study firms that increased employment, it appears as if it took moderate to fast sales growth (25-50 percent and higher) before companies tended to hire during this period. While 45 percent of firms had sales growth over the period, only 9 percent had employment growth at all.² There were many firms in the slow tier of sales growth (34 percent), and 11 percent in the moderate to fast growth tiers. It is possible that many of the firms with slow sales growth did not grow enough to justify adding employment. This data also supports the notion of firms “doing more with less” and the frequently noted jobless recovery that the nation experienced since the recession as firms increase productivity and decreased costs per unit produced. See Appendix A for more detail on firms by sales growth and employment growth.

Table 7a: Number of Study Firms by Employment and Sales Growth Tiers in Pioneer Valley, 2005-2010

Number of Firms by Employment	Number of Firms by Sales						Total
	Growth Tier	Fast	Moderate	Slow	Stable	Decline	
Fast		205	17	12	1	12	247
Moderate		39	83	17	4	5	148
Slow		23	37	85	8	13	166
Stable		84	158	2,093	1,087	1,872	5,294
Decline		18	9	49	36	591	703
Total		369	304	2,256	1,136	2,493	6,558

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

² It is worth emphasizing that in the NETS data the changes in employment by firm are based on responses to surveys (Dunn and Bradstreet survey data make up the NETS dataset) and it is quite possible that some firms that reported the same employment in each time period may have actually had a very small change in employment (given the large number that reported the exact same number of employees in both 2005 and 2010).

Table 7b: Percent of Study Firms by Employment and Sales Growth Tiers in Pioneer Valley, 2005-2010

		Percent Firms by Sales					
Firms by Employment	Growth Tier	Fast	Moderate	Slow	Stable	Decline	Total
	Fast	83%	7%	5%	0%	5%	100%
	Moderate	26%	56%	11%	3%	3%	100%
	Slow	14%	22%	51%	5%	8%	100%
	Stable	2%	3%	40%	21%	35%	100%
	Decline	3%	1%	7%	5%	84%	100%
	Total	6%	5%	34%	17%	38%	100%

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

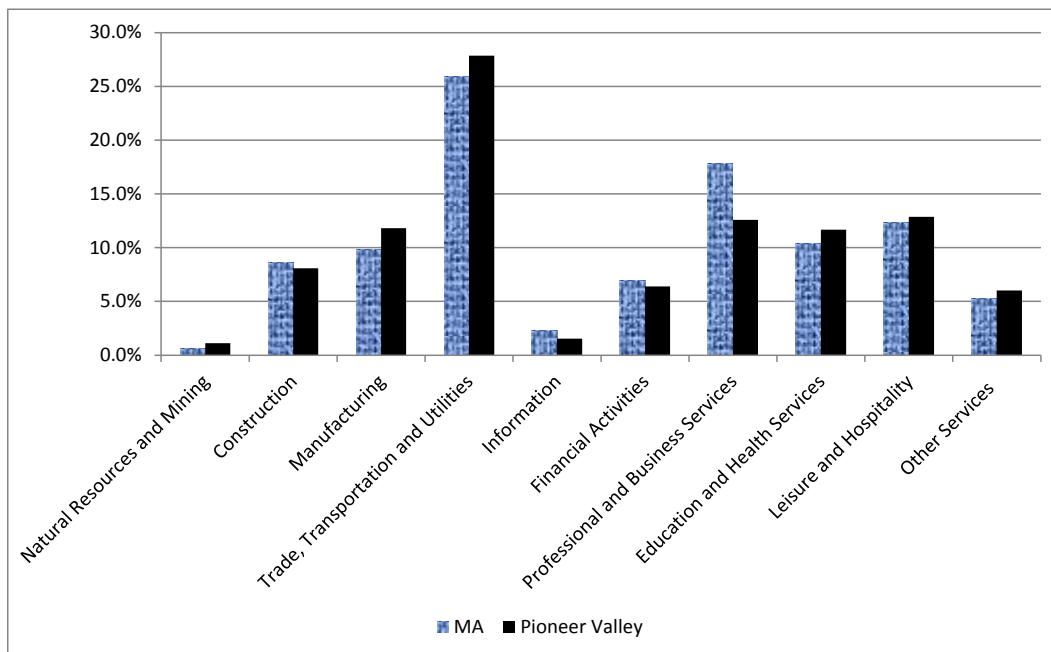
Industrial Mix of Pioneer Valley Study Group Businesses

The following section offers more detail about the industrial mix of the Pioneer Valley firms in the study group (focused on businesses of five to 500 employees and limited primarily to private sector, for profit-firms) compared to the state overall and by employment and sales growth tiers.

Study Firms by Industry and Employment Growth Tier

An analysis of the industry breakdown at the Supersector level shows that more than a quarter of the universe of study firms fall into the Trade, Transportation and Utilities sector. Leisure and Hospitality (13 percent); Professional and Business Services (13 percent); Manufacturing (12 percent); and Education and Health Services (12 percent) also make up large percentages of the universe of firms in both the state and region.

Figure 4: Percent of Study Firms by Industry Supersector



Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

Note: Supersectors are aggregations by the US Census Bureau of NAICS 2-digit industry sector codes. For example, the Natural Resources and Mining Supersector includes Agriculture, Forestry and Fishing (NAICS 11) and Mining, Quarrying, and Oil and Gas Extraction (NAICS 21); and the Trade, Transportation and Utilities Supersector includes Wholesale Trade, Retail Trade, Transportation and Warehousing (the Utilities sector was excluded from the study group). More information can be found at <http://www.bls.gov/ces/cessuper.htm>.

Some industries are disproportionately represented in the “fast grower” category suggesting that firms in these sectors may have been more dynamic over the period. Further analysis of “fast growing” firms reveals higher proportions of those firms than the overall universe in the following Supersectors: Construction (12 percent of all fast growers v. 8 percent in the universe as a whole); Manufacturing (14 percent v. 12 percent); Financial Activities (9 percent v. 6 percent); and Education and Health Services (13 percent v. 12 percent).

Table 8: Fast Grower Study Firms by Industry Supersector Compared to Total Study Firms

Industry Supersector	Fast Growth Firms		Total Study Firms	
	Number of Firms	Percent of Total	Number of Firms	Percent of Total
Natural Resources and Mining	4	2%	77	1%
Construction	29	12%	530	8%
Manufacturing	34	14%	774	12%
Trade, Transportation and Utilities	67	27%	1,827	28%
Information	2	1%	101	2%
Financial Activities	21	9%	419	6%
Professional and Business Services	26	11%	825	13%
Education and Health Services	31	13%	766	12%
Leisure and Hospitality	23	9%	844	13%
Other Services	10	4%	395	6%
Total	247	100%	6,558	100%

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

When analyzing industries by Supersector and employment growth, regardless of the rate (aggregating the slow, moderate and fast growers) a similar pattern emerges. The industrial mix is comparable across “fast growers” and all growing firms.

Table 9: Fast Grower Study Firms by Supersector Compared to All Growth Study Firms

Industry Supersector	Fast Growth Firms		All Growth Firms*	
	Number of Firms	Percent of Total	Number of Firms	Percent of Total
Natural Resources and Mining	4	2%	7	1%
Construction	29	12%	59	11%
Manufacturing	34	14%	87	16%
Trade, Transportation and Utilities	67	27%	158	28%
Information	2	1%	10	2%
Financial Activities	21	9%	40	7%
Professional and Business Services	26	11%	67	12%
Education and Health Services	31	13%	64	11%
Leisure and Hospitality	23	9%	44	8%
Other Services	10	4%	25	4%
Total	247	100%	561	100%

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

* Note: Includes all firms categorized in the Fast, Moderate and Slow Growth Tiers

Compared to other “gazelle” studies that focus only on fast growing businesses, the study sponsors were interested in learning about not only fast growing firms, but also firms that may have the potential to grow and those that are growing at a slow or moderate pace (up to 50%). Stable firms comprise the great majority of firms in the study group. The fact that about 80 percent of firms in the study group had no change in employment between 2005 and 2010 which could indicate that firms during the recession were resilient: while not adding jobs, they were also trying hard not to avoid layoffs.

The NETS dataset cautions that employment movements in the Dunn and Bradstreet data (which the NETS data is based on) are more sluggish than other public measures of employment, like the quarterly Bureau of Labor Statistics data. For instance, a firm with 4 employees will report “4 employees” even if a worker just left if they are in the process of replacing the person, or will report “5 employees” only if they decide that the additional position is permanent. The NETS database job data therefore tend to move in a “ratchet manner” (i.e. no change for a few years, then a move from 5 to 10 or from 10 to 5).³

³ “Understanding NETS Data”, Walls and Associates, p. 4.

Table 10: Stable Study Firms by Supersector

Industry Supersector	Stable Growth Firms		Total Study Firms	
	Number of Firms	Percent of Total	Number of Firms	Percent of Total
Natural Resources and Mining	56	1%	77	1%
Construction	408	8%	530	8%
Manufacturing	560	11%	774	12%
Trade, Transportation and Utilities	1,489	28%	1,827	28%
Information	74	1%	101	2%
Financial Activities	334	6%	419	6%
Professional and Business Services	667	13%	825	13%
Education and Health Services	644	12%	766	12%
Leisure and Hospitality	737	14%	844	13%
Other Services	325	6%	395	6%
Total	5,294	100%	6,558	100%

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

When looking at firms that experienced an employment decline, manufacturing firms are over-represented compared to their representation in the study group overall; 18 percent of the declining firms are manufacturers compared to 12 percent of firms in the study group overall. The fact that manufacturers stand-out as both growers and decliners suggests that manufacturing is a highly competitive and dynamic industry in the region, with local firms competing with national and global manufacturers. In general, manufacturing was hurt significantly by the recession but experienced growth in sales (and with modest recovery of jobs) in the past few years. This is consistent with the industry's long-term trend of increased productivity (output per worker).

Table 11: Declining Study Firms by Supersector

Industry Supersector	Decline Firms		Total Study Firms	
	Number of Firms	Percent of Total	Number of Firms	Percent of Total
Natural Resources and Mining	14	2%	77	1%
Construction	63	9%	530	8%
Manufacturing	127	18%	774	12%
Trade, Transportation and Utilities	180	26%	1,827	28%
Information	17	2%	101	2%
Financial Activities	45	6%	419	6%
Professional and Business Services	91	13%	825	13%
Education and Health Services	58	8%	766	12%
Leisure and Hospitality	63	9%	844	13%
Other Services	45	6%	395	6%
Total	703	100%	6,558	100%

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

Significant Growing Subsectors Among Study Firms

Looking at industries at the 3-digit NAICS level with 45 or more firms in the study group yields additional insight into the detailed growth sectors. Table 12 (below) displays the top 15 3-digit sectors in terms of total number of establishments with detail on how many firms were growing, stable or declining from 2005 to 2010. Table 13 ranks the top 15 3-digit sectors in terms of the percentage of fast growing firms. Not surprisingly, some subsectors in the region have more fast growing firms than the regional average (4 percent) and more overall growing firms (9 percent). Of these sectors, specialized types of construction, financial services, manufacturing and retail establishments in the region all have greater shares of fast growing firms than the overall study group (4 percent). Additionally, when looking at all growing firms, these sectors have much larger shares of growing firms than the study group overall (9 percent). Complete information by 3-digit NAICS level industry can be found in Appendix A.

Table 12: Study Firms by 3-Digit NAICS: Top 15 Industries by Total Number of Establishments

NAICS 3-Digit	NAICS Description	Number of Firms by Employment Growth Tier					Total Firms
		Fast	Moderate	Slow	Stable	Decline	
-	Total Firms in Study	247	148	166	5,294	703	6,558
722	Food Services and Drinking Places	16	7	7	529	41	600
541	Professional, Scientific, and Technical Services	15	16	14	413	71	529
624	Ambulatory Health Care Services	21	15	10	437	33	516
238	Specialty Trade Contractors	16	8	10	258	45	337
423	Merchant Wholesalers, Durable Goods	17	10	11	211	33	282
561	Administrative and Support Services	10	4	5	223	18	260
445	Food and Beverage Stores	5	3	4	228	18	258
811	Repair and Maintenance	6	6	5	163	21	201
812	Personal and Laundry Services	4	2	2	162	24	194
522	Credit Intermediation and Related Activities	12	4	3	137	20	176
332	Fabricated Metal Product Manufacturing	10	5	7	108	32	162
441	Motor Vehicle and Parts Dealers	9	2	5	127	11	154
524	Insurance Carriers and Related Activities	4	4	2	121	9	140
424	Merchant Wholesalers, Nondurable Goods	9	1	4	107	14	135
448	Clothing and Clothing Accessories Stores	1	6	4	105	15	131

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

Table 13: Fast Growing Employment by 3-Digit NAICS: Top 15 Industries by Percent Fast Growth

NAICS 3-Digit	NAICS Description	Fast Growth Firms		All Growth Firms*	
		Number of Firms	Percent of Study Firms	Number of Firms	Percent of Study Firms
-	Total Firms in Study	247	4%	561	9%
237	Heavy and Civil Engineering Construction	7	11%	13	21%
522	Credit Intermediation and Related Activities	12	7%	19	11%
424	Merchant Wholesalers, Nondurable Goods	9	7%	14	10%
532	Rental and Leasing Services	5	7%	9	12%
326	Plastics and Rubber Products Manufacturing	3	6%	5	10%
332	Fabricated Metal Product Manufacturing	10	6%	22	14%
624	Social Assistance	6	6%	9	9%
423	Merchant Wholesalers, Durable Goods	17	6%	38	13%
441	Motor Vehicle and Parts Dealers	9	6%	16	10%
333	Machinery Manufacturing	5	5%	13	13%
454	Non-store Retailers	3	5%	9	15%
444	Building Materials and Garden Equipment and Supplies Dealers	5	5%	12	12%
238	Specialty Trade Contractors	16	5%	34	10%
236	Construction of Buildings	6	5%	12	9%
443	Electronics and Appliance Stores	2	4%	4	9%

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

Sales Growth by Industry Among Study Firms

As noted above, more firms had sales growth than employment growth over the same period. Construction firms and manufacturers all had higher shares of firms with either “fast” sales growth (50 percent or more between 2005 and 2010) or any sales growth, than the overall study group. For example, 11 percent of fabricated metal products manufacturers had fast sales growth, and 61% (99 firms) had positive sales growth during the 2005 to 2010 period.

Table 14: Fast Growing Sales by 3-Digit NAICS: Top 15 Industries by Percent Fast Growth

NAICS 3- Digit	NAICS Description	Fast Growth Firms		All Growth Firms*	
		Number of Firms	Percent of Study Firms	Number of Firms	Percent of Study Firms
-	Total Firms in Study	369	6%	2,929	45%
236	Construction of Buildings	15	6%	38	29%
322	Paper Manufacturing	6	12%	40	75%
333	Machinery Manufacturing	11	11%	42	43%
332	Fabricated Metal Product Manufacturing	18	11%	99	61%
424	Merchant Wholesalers, Nondurable Goods	15	11%	49	36%
339	Miscellaneous Manufacturing	6	11%	22	41%
443	Electronics and Appliance Stores	5	11%	23	49%
326	Plastics and Rubber Products Manufacturing	5	10%	30	63%
237	Heavy and Civil Engineering Construction	6	10%	25	40%
238	Specialty Trade Contractors	30	9%	165	49%
423	Merchant Wholesalers, Durable Goods	25	9%	147	52%
522	Credit Intermediation and Related Activities	15	9%	111	63%
454	Non-store Retailers	5	8%	30	51%
624	Social Assistance	8	8%	55	56%
323	Printing and Related Support Activities	4	7%	19	33%

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

Analysis and Results: Business Survey

Overview

After the analysis of study firms was completed using the NETS data attributes, the second major component of the study was undertaken. Using a sample of the study firms identified, a business survey was conducted and responses analyzed. The following section outlines the findings from this business survey conducted by telephone. See Methodology for more detail on the methods, data, and survey design used to produce the following findings.

Business Survey Analysis

In addition to analyzing the patterns of employment and sales growth experienced by the study group of Pioneer Valley businesses using the NETS dataset, the research team collected data from a sampling of these companies directly via a detailed business survey. In December 2012 and January 2013, EPPR conducted a phone survey of small businesses in the Pioneer Valley to determine their perceived strengths, successes, challenges and needs as they sought to grow their businesses. Small businesses were defined as those that had between 5 and 500 employees at the start of the study period, in 2005. As noted previously, businesses in certain industries (public administration, civic organizations, some healthcare organizations, etc.) were excluded, as they fell outside the study scope. More information about how the study group was defined and compiled can be found in the Methodology. Businesses were identified as belonging to one of five tiers of employment growth: decline, stable, slow, moderate, or fast. In total, 171 businesses completed surveys.

Profile of Survey Respondents

The following tables show basic characteristics of the firms targeted for the survey and of the survey respondents. EPPR worked with a professional survey firm to administer the survey and worked with them to make sure that every effort was made to reach firms across Pioneer Valley according to the distribution of firms by county in the NETS dataset. The following table shows that slightly more firms responded to the survey from Franklin County and Hampshire County, than were represented in the overall study group, while slightly fewer firms from Hampden County responded compared to their representation.

Table 15: Survey Respondents by County

Geography	Firms Surveyed		Total Firms	
	Number of Firms	Percent of Total	Number of Firms	Percent of Total
Franklin County	32	19%	701	11%
Hampshire County	41	24%	1,400	21%
Hampden County	98	57%	4,457	68%
Total	171	100%	6,558	100%

Source: UMDI Pioneer Valley Business Survey, 2013; National Establishment Time Series (NETS) Database, Walls & Associates

Efforts were made to survey firms in similar proportions to their distribution by size as they were in the overall study group. The table below shows that slightly fewer 20-49 and 1-4 size firms responded to the survey than were represented in the study group overall. Conversely, there were slightly more 10-19 size firms who responded to the survey than were represented in the study group overall.

Table 16: Survey Targets and Respondents by Employment Size

Employment Size Range	Business Survey Firms		Total Study Firms	
	Number of Firms	Percent of Total	Number of Firms	Percent of Total
Size 250+	0	0%	55	1%
Size 100-249	3	2%	207	3%
Size 50-99	7	4%	340	5%
Size 20-49	26	15%	1,221	19%
Size 10-19	63	37%	1,691	26%
Size 5-9	71	42%	2,799	43%
Size 1-4*	1	1%	245	4%
Total	171	100%	6,558	100%

Source: UMDI Pioneer Valley Business Survey, 2013; National Establishment Time Series (NETS) Database, Walls & Associates

*Note: The size range 1-4 is included because it represents firms that had 5 or more employees in 2005, but who had employment declines from 2005 to 2010 that resulted in employment in 2010 below our original study group parameters. Companies with declining employment were not the focus of this study.

Since the great majority of businesses in the study group were stable in employment growth, growing businesses were oversampled in order to capture more information about these types of businesses. Stable businesses still remained the largest surveyed group, and may represent firms that have potential for growth.

Table 17: Survey Targets and Respondents by Employment Growth Rate, 2005-2010

Employment Growth Tier	Business Survey Firms		Total Study Firms	
	Number of Firms	Percent of Total	Number of Firms	Percent of Total
Fast	15	9%	247	4%
Moderate	12	7%	148	2%
Slow	12	7%	166	3%
Stable	126	74%	5,294	81%
Decline	6	4%	703	11%
Total	171	100%	6,558	100%

Source: UMDI Pioneer Valley Business Survey, 2013; National Establishment Time Series (NETS) Database, Walls & Associates

Firms were also targeted for the survey along the distribution of firms in the study group by industry sector. The table below shows that more manufacturers and wholesale trade establishments responded to the survey than were represented in the study group overall. Fewer health care and social assistance, and accommodation and food service firms responded to the survey than were represented in the study group.

Table 18: Firms Surveyed by Industry

NAICS 2-Digit	NAICS Supersector	Business Survey Firms		Total Study Firms	
		Number of Firms	Percent of Total	Number of Firms	Percent of Total
11	Agriculture, Forestry, Fishing and Hunting	5	3%	73	1%
21	Mining, Quarrying, and Oil and Gas Extraction	1	1%	4	0%
23	Construction	12	7%	530	8%
31-33	Manufacturing	34	20%	774	12%
42	Wholesale Trade	22	13%	417	6%
44-45	Retail Trade	38	22%	1,216	19%
48-49	Transportation and Warehousing	6	4%	194	3%
51	Information	3	2%	101	2%
52	Finance and Insurance	8	5%	343	5%
53	Real Estate and Rental and Leasing	2	1%	76	1%
54	Professional, Scientific, and Technical Services	12	7%	529	8%
55	Management of Companies and Enterprises	0	0%	2	0%
56	Administrative and Support and Waste Management and Remediation Services	7	4%	294	4%
61	Educational Services	0	0%	78	1%
62	Health Care and Social Assistance	5	3%	688	10%
71	Arts, Entertainment and Recreation	4	2%	177	3%
72	Accommodation and Food Services	1	1%	667	10%
81	Other Services (except Public Administration)	11	6%	395	6%
-	Total	171	100%	6,558	100%

Source: UMDI Pioneer Valley Business Survey, 2013; National Establishment Time Series (NETS) Database, Walls & Associates

Business Characteristics

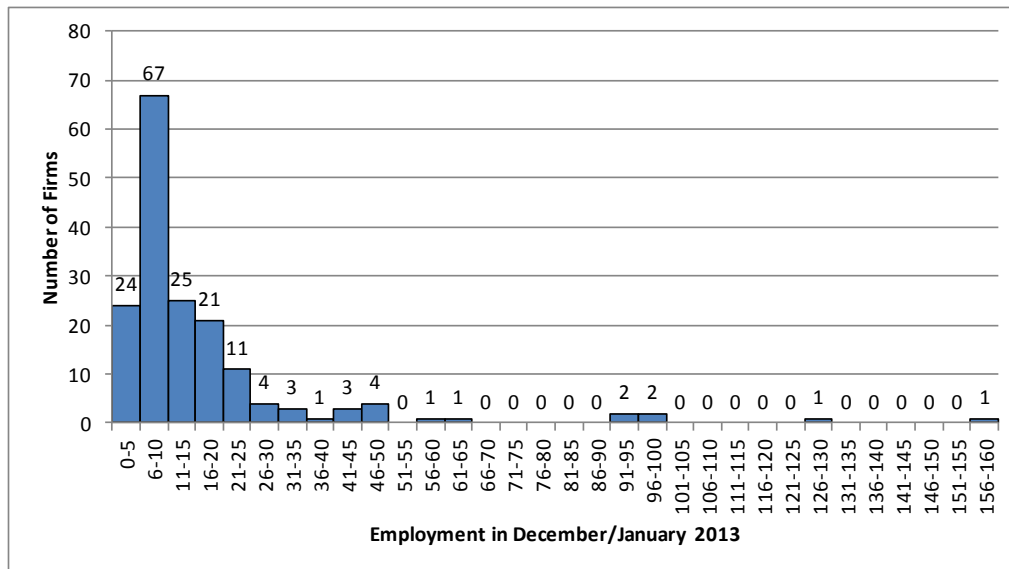
In the beginning section of the survey, firms were asked about their employment, expectations for the future in terms of employment and sales, ability to innovate, and their primary market. The following tables show the survey responses to these questions in more detail.

Employment and Sales Expectations

Most firms who responded to the survey had between 6 and 10 employees. Despite the current economic environment, very few respondents predicted decreasing in size—just three responding businesses (2 percent). Most commonly businesses predicted they would stay the same (49 percent) but 40 percent were more optimistic and predicted their size would likely increase. Even more firms, 74 percent, predicted some increasing sales growth over the next three years. This may indicate that despite sales growth expectations, firms may be more hesitant to add to payrolls (which would be consistent with our data findings on the experience of area firms from 2005 to 2010).

Small businesses predominate in the Pioneer Valley: the majority of the businesses responding to the survey, 53 percent, have 10 employees or less. (Note: Businesses with five employees or under and more than 500 employees as of 2005 were excluded from the study group that was the basis for the survey, but the current employment at some firms is less than what was reported in the NETS dataset so they are captured in the less than 5 category in Figure 5.)

Figure 5: Survey Question 1: How many people do you currently employ?



Source: UMDI Pioneer Valley Business Survey, 2013

Forty percent of survey respondents predicted growing their firm’s employment within the next three years. Forty-nine percent of firms surveyed expected to stay the same size, while about two percent expected to decline.

Table 19: Survey Question 2: Expected Employment Change in the Next Three Years

Expected Growth	Business Survey Firms	
	Number of Firms	Percent of Total
Increase	69	40%
Stay the same	83	49%
Decrease	3	2%
I don't know	16	9%
Total Firms	171	100%

Source: UMDI Pioneer Valley Business Survey, 2013

Most firms surveyed did not expect to add employees over the next three years (59 percent). Twenty-three percent of firms that were surveyed expected to add fewer than 4 employees, and 15 percent expected to add 4 to 10 employees. Two percent of firms surveyed expected to add 11 to 20 employees, and 1 percent responded expecting to hire 21 or more employees.

Table 20: Survey Question 2a: Expected Employment Growth in the Next Three Years

Expected Employment Growth	Business Survey Firms	
	Number of Firms	Percent of Total
No growth expected	101	59%
Fewer than 4 employees	39	23%
4 to 10 employees	25	15%
11 to 20 employees	3	2%
21 employees or more	2	1%
I don't know	1	1%
Total	171	100%

Source: UMDI Pioneer Valley Business Survey, 2013

Seventy-four percent of firms surveyed reported expecting their sales to grow over the next three years. Fifteen percent of firms surveyed expected to have no sales growth over the next three years.

Table 21: Survey Question 3: Sales Growth Expectations Over the Next Three Years

Sales Growth Expectations	Business Survey Firms	
	Number of Firms	Percent of Total
50% or more	13	8%
More than 25% but less than 50%	29	17%
Less than 25%	83	49%
I expect no sales growth	25	15%
I don't know	21	12%
Total	171	100%

Source: UMDI Pioneer Valley Business Survey, 2013

Innovation and Primary Market

Half of all firms who responded indicated their ability to innovate new products or services was good and 29 percent responded their ability was excellent. Half of all firms who responded indicated their primary market was local (Western Massachusetts) and 22 percent of firms indicated their primary market was regional (Northeast). Thirteen percent out of 171 responding firms noted that they sell to international markets.

Half of all firms who responded to the survey indicated their ability to innovate new products or services was good and 29 percent who responded their ability to innovate was excellent. Eighteen percent of firms surveyed reported that their ability to innovate was either fair or poor.

Table 22: Survey Question 4: Rate Your Ability to Innovate New Products and Services

Ability to Innovate	Business Survey Firms	
	Number of Firms	Percent of Total
Excellent	50	29%
Good	86	50%
Fair	28	16%
Poor	3	2%
I don't know	4	2%
Total	171	100%

Source: UMDI Pioneer Valley Business Survey, 2013.

Half of all firms who responded indicated their primary market was local (Western Massachusetts) and 22 percent of firms indicated their primary market was regional (Northeast). Thirteen percent of firms responding to the survey indicated their primary market was international.

Table 23: Survey Question 5: Company's Primary Market Area

Market Area	Business Survey Firms	
	Number of Firms	Percent of Total
Local (Western Massachusetts)	86	50%
Regional (Northeast)	38	22%
National	25	15%
International	22	13%
Total	171	100%

Source: UMDI Pioneer Valley Business Survey, 2013

Business Climate and Business Assistance in Pioneer Valley

The following section of the survey focused on asking firms about the factors that contributed or hindered their success, their interest in certain business assistance programs, and their experience with financing.

Success Factors and Barriers to Business Growth

Sixty-six percent of responding businesses thought the Pioneer Valley was either an excellent (21 percent) or good (45 percent) location for their business to succeed. Twenty-six percent of respondent businesses thought the region was a fair location for success. Only five percent of businesses thought the Pioneer Valley was a poor location for business.

In general, the factors deemed most important to business success appear to have more to do with larger market forces (local economic market factors, etc.). Among all firms who responded, the most-identified major factor for success was market demand (not surprisingly), followed by availability of skilled workers, management and leadership capability, and access to suppliers and vendors. Access to Research and Development collaborations was the least likely factor suggested as leading to success. Given their rankings showing the importance of

financing to their success, it appears to make sense to target growing firms (according to the NETS data) for assistance with financing. Growing firms were more likely to identify financing as a major success factor, in addition to availability of skilled workers and management and leadership capability. See Appendix C for details on open ended responses.

When it comes to the most serious barriers to growth, again, larger market forces play the most significant role. The cost of doing business was defined for respondents as including costs for labor, real estate, energy, taxes, and “et cetera” and was cited most often as a major barrier. The availability of skilled workers was cited by 41 percent of growing firms as a major barrier to growth. Access to foreign markets was the least likely to be identified as a barrier, with only 4 percent of firms considering it a major barrier and 78 percent saying it was not a barrier for them.. In open ended responses, three firms cited health insurance costs as a barrier to growth. See Appendix C for more details on these open ended responses.

The following tables show the survey responses to these questions in more detail. Sixty-six percent of businesses thought the Pioneer Valley was a good or excellent location for their business to succeed, with 45 percent of responding businesses indicating good, and another 21 percent indicating it was an excellent location for success. Twenty-six percent of businesses surveyed indicated that it was a fair location to succeed, and only 5 percent reported that it was a poor location for success.

Table 24: Survey Question 6: Pioneer Valley as a Good Location to Succeed

Pioneer Valley as a Location for Success	Business Survey Firms	
	Number of Firms	Percent of Total
Excellent	36	21%
Good	77	45%
Fair	45	26%
Poor	8	5%
I don't know	5	3%
Total	171	100%

Source: UMDI Pioneer Valley Business Survey, 2013.

The top five major success factors cited by businesses surveyed were: market demand for products or services, availability of skilled workers, management and leadership capability, access to suppliers and vendors and innovation, product and/or technology improvements. Two firms indicated that the local economy was another factor contributing to their business’ success.

Table 25: Survey Question 7: Factors Contributing to Business Success, Ranked by “Major” Factor

Success Factor	Business Survey Firms			Total Growing Firms in Study*	
	Major	Minor	Not a Factor	Major	Minor
Market Demand for Products or Services	60%	22%	18%	49%	33%
Availability of Skilled Workers	45%	38%	17%	54%	31%
Management and Leadership Capability	44%	33%	22%	54%	21%
Access to Suppliers and Vendors	40%	33%	27%	28%	36%
Innovation, Product and/or Technology Improvements	33%	42%	25%	31%	38%
Access to Financing	30%	40%	30%	54%	21%
Government Relationships or Policies	26%	36%	38%	21%	31%
Access to Research and Development Collaborations	15%	42%	43%	18%	31%

Source: UMDI Pioneer Valley Business Survey, 2013; National Establishment Time Series (NETS) Database, Walls & Associates, 2010.

* Note: Includes all firms categorized in the Fast, Moderate and Slow Growth Tiers

Table 26: Survey Question 7: Open Ended Responses: Other Factors Contributing to Business Success

Other Success Factors	Business Survey Firms
	Number of Responses
Local economy	2
Other	2
Ability to innovate	1
Access to UMass	1
Consumer Needs/Other	1
Persistence	1
Regional Employment Board	1

Source: UMDI Pioneer Valley Business Survey, 2013

Note: Not all firms offered an “other” response to question 7, so the total responses to this question do not equal the total number of responding firms (171).

The top five major barriers to success cited by businesses surveyed were: the cost of doing business (labor, real estate, taxes, energy, etc.), availability of skilled workers, market demand, permitting/regulations, and cash flow. Three firms indicated that health insurance costs were a barrier to business growth.

Table 27: Survey Question 8: Barriers to Business Growth Ranked by “Major” Barrier

Barriers to Growth	Business Survey Firms			Total Growing Firms in Study*	
	Major	Minor	Not a Barrier	Major	Minor
Cost of Doing Business	50%	31%	19%	38%	31%
Availability of Skilled Workers	35%	35%	30%	41%	33%
Market Demand	32%	23%	45%	31%	26%
Permitting/Regulations	28%	32%	40%	18%	36%
Cash Flow	23%	36%	42%	26%	41%
Need for New Equipment, Technology, Process, or Efficiency	18%	40%	43%	15%	46%
Availability of Space for Facility Expansion	18%	30%	52%	21%	28%
Obtaining Financing	15%	37%	48%	15%	33%
Access to Suppliers and Vendors	14%	27%	59%	8%	23%
Need Leadership or Management Training	10%	35%	56%	10%	33%
Access to Research and Development	5%	32%	64%	3%	23%
Access to Foreign Markets	4%	19%	78%	3%	21%

Source: UMDI Pioneer Valley Business Survey, 2013; and National Establishment Time Series (NETS) Database, Walls & Associates, 2010.

* Note: Includes all firms categorized in the Fast, Moderate and Slow Growth Tiers

Table 28: Survey Question 8: Open Ended Responses: Other Barriers to Business Growth

Other Barriers to Growth	Business Survey Firms
	Number of Responses
Health insurance	3
Size of local market	3
Local economy	2
Need for skilled workers	2
Competition	1
Financing	1
Intellectual property protection	1
Other	1
Perception of industry	1
Taxes	1

Source: UMDI Pioneer Valley Business Survey, 2013

Note: Not all firms offered an “other” response to question 8, so the total responses to this question do not equal the total number of responding firms (171).

Business Assistance Programs

The top five needs for business assistance among survey respondents were market and customer research (57 percent), advertising and marketing (55 percent), social media and website optimization (52 percent), and employee recruitment and training (47 percent).

Table 29: Survey Question 9: Demand for Various Types of Business Assistance

Type of Business Assistance Needed	“Yes” Response		“No” Response	
	Number of Firms	Percent of Total	Number of Firms	Percent of Total
Market and customer research	98	57%	73	43%
Advertising and marketing	94	55%	77	45%
Social media and website optimization	89	52%	82	48%
Employee recruitment and training	80	47%	91	53%
Operations and strategic planning	74	43%	97	57%
Leadership or management training	74	43%	97	57%
Networking with other businesses and sharing best practices	72	42%	99	58%
New product or service development	70	41%	101	59%
Succession planning	67	39%	104	61%
Business plan development	54	33%	114	67%
Financial planning (projections, cash flow management, pricing)	54	32%	117	68%
Managing risk	49	29%	122	71%
Accounting and bookkeeping	46	27%	125	73%
Export assistance	19	11%	152	89%
Immigrant business owner assistance	19	11%	152	89%

Source: UMDI Pioneer Valley Business Survey, 2013.

Financing

The final five questions of the survey were focused on financing. Financing questions can be challenging for businesses to respond to as they might be uncomfortable answering, they may worry about indicating competitive disadvantages, or, despite the efforts to reach decision-makers, the respondent may not have full knowledge of this aspect of the business. For example, survey question 10 asked about a firm’s ability to access financing over the past year. Unfortunately, the survey question was apparently not written clearly enough or not explained clearly enough to allow respondents to indicate if they did not need financing, and therefore had not sought it, compared to not receiving financing while actually having sought it. Therefore, answers to the open response follow-up question 11 (reasons for not obtaining financing) included a significant number of responses indicating they had not needed financing in the past year resulting in confusing or nonsensical results.

Firms who were able to secure financing mostly received bank loans (65 respondents). Forty-eight percent of firms responded that they did not anticipate needing financing in the next three years. Of those firms who did anticipate needing financing or did not know, most responded needing the future financing for equipment or technology investments (24 responses), expansion or acquisition (21 responses), or working capital (13 responses).

Table 30: Survey Question 10: Ability to Access Financing Over the Past Year

Response	Business Survey Firms	
	Number of Firms	Percent of Total
Yes, able to get financing needed	115	67%
No, able to get financing needed	56	33%

Source: UMDI Pioneer Valley Business Survey, 2013.

*Note: Firms who responded “No” to this question included firms who did not need financing. This was a result of the survey question design and the challenge of some respondents to follow the logical order of questions we attempted to ask. Therefore, some of these 56 respondents did not receive financing simply because they did not need it.

Table 31: Survey Question 11: Open Response - Reasons for Not Obtaining Financing in the Past Year

Reasons for Not Obtaining Financing	Business Survey Firms
	Number of Responses
I don't know	9
Cash flow constraint	3
Loans not available in amounts needed	3
Corporate office makes decisions	3
Current outstanding debt	2
Insufficient earnings, capital or collateral	2
Other	2
Banks afraid to lend due to regulations	1
Government funding not available	1

Source: UMDI Pioneer Valley Business Survey, 2013.

*Note: Firms who responded “No” to the previous question 10 included firms who did not need financing. This was a result of the survey question design and the challenge of some respondents to follow the logical order of questions we attempted to ask. Therefore, these responses for question 11 only include firms who actually could not receive the financing they sought.

Most firms surveyed who received financing in the past year received bank loans or lines of credit. Other firms cited leasing (7 firms), cash flow/business receipts (5 firms), and personal/family/friends (5 firms). Only three firms surveyed indicated accessing financing through government sponsored loan programs.

Table 32: Survey Question 12: Open Response - Types of Financing Received in the Past Year

Types of Financing	Business Survey Firms	
	Number of Responses	
Bank loans or line of credit	65	
I don't know	10	
Leasing	7	
Other	6	
Cash flow/business receipts	5	
Personal/family/friends	5	
Does not want to disclose	4	
Government sponsored loan	3	
Grant	2	
Company loan	1	
Loan from non-profit institution	1	

Source: UMDI Pioneer Valley Business Survey, 2013.

Thirty-five percent of firms responding to the survey anticipated needing financing over the next three years. Forty-eight percent of firms surveyed indicated they would not need financing, and 17 percent didn't know whether they would have financing needs in the near future.

Table 33: Survey Question 13: Financing Needs in the Next Three Years

Response	Business Survey Firms	
	Number of Firms	Percent of Total
Yes, need finalizing	60	35%
No, does not need financing	82	48%
I don't know	29	17%
Total	171	100%

Source: UMDI Pioneer Valley Business Survey, 2013.

Firms that anticipate needing financing in the next three years primarily plan to use it to purchase new equipment or technology, expansion or acquisition, or for working capital.

Table 34: Survey Question 14: Types of Financing Needs

Need for Financing	Business Survey Firms
	Number of Responses
Equipment/technology	24
Expansion/acquisition	21
Working capital	13
Refinance	5
New product or service development	4
Other	3
I don't know	2
Marketing/advertising	2
Workforce	2

Source: UMDI Pioneer Valley Business Survey, 2013.

Summary of Key Findings

This study of business growth in the Pioneer Valley, with a focus on establishment level data, provides two key areas of understanding. First, the profile of small to medium-sized businesses in the study group sheds light on the mix of establishments by industry, growth in jobs and sales, and location. Second, the completion of 171 detailed business surveys provides a rich set of business feedback on the region's economic conditions in terms of success factors, barriers to growth, and areas for business and financial assistance. Key findings from this study include:

- Small businesses predominate in the Pioneer Valley: 72 percent of firms in the study group have fewer than 20 employees and the majority of the businesses responding to the telephone survey, 53 percent, have 10 employees or less. (Note: Businesses with five employees or under and more than 500 employees as of 2005 were excluded from the survey.) The region's distribution of firms by number of employees is similar to Massachusetts overall, with slightly fewer large firms in the Pioneer Valley.
- The vast majority (80%) of small to medium sized firms in the Pioneer Valley had stable job growth from 2005 to 2010, a time period in which the region saw a 4.8 percent decrease in total establishments and 6 percent decrease in total employment. The large number of firms that experienced stable or positive job growth, along with many more that increased sales revenue, helps demonstrate the resilience of the economy during the Great Recession of 2007 to 2009, and the dynamic nature of small to medium -sized businesses.
- Some subsectors in the region are growing at a faster rate than firms generally are in the region. Several specialized types of construction, financial services, manufacturing and retail establishments in the region all have greater shares of fast growing firms (5-11 percent of total firms in each sector) than the overall study group (4 percent). Additionally, when looking at all growing firms, these sectors have much larger shares of growing firms (10-21 percent) than the study group overall (9 percent).
- Of the fast growing firms, 91% percent were small businesses with 5-99 employees. The two employment tiers with the largest number of fast growing firms were in the 10-19 employment size range at 37%, followed by the 20-49 employment size range with 32% of fast growing firms.
- Forty percent of businesses surveyed expect to grow their firm's number of employees within the next three years. Forty-nine percent expected to stay the same size, while about two percent expected to decline. In addition, 74 percent of businesses reported expecting their sales to grow in the next three years.
- More sales growth than job growth was experienced during the study period and is projected for the future. The historical data on job and sales growth, along with projections of higher sales growth than job growth, provides evidence of businesses expanding revenue while holding the number of employees constant – signs of productivity increases and more cautious hiring plans. It appears it took moderate to fast sales growth (25-50 percent and higher) before companies tended to hire during the study period.

- Over 75% of surveyed firms report their ability to innovate new products and services is good or excellent (50% good and 29% excellent).
- The primary market for surveyed businesses is Western Massachusetts and the Northeast. Half of all surveyed firms indicated their primary market was local (Western Massachusetts) and 22 percent of firms indicated their primary market was regional (Northeast).
- Sixty-six percent of surveyed businesses thought the Pioneer Valley was a good or excellent location for their business to succeed, with 45 percent of responding businesses indicating good, and another 21 percent indicating it was an excellent location for success.
- The Pioneer Valley's skilled workforce is a key to making or breaking a business: 45 percent of firms (and 54 percent of growing firms) named the availability of a skilled workforce as a major contributor to their success, while 35 percent of firms (and 41 percent of growing firms) cited the lack of availability of skilled workers as a major barrier to success.
- The top five major success factors cited by businesses surveyed were: market demand for products or services, availability of skilled workers, management and leadership capability, access to suppliers and vendors and innovation, product and/or technology improvements. The top three factors for growing firms (54% stating a major factor) were skilled workers, management and leadership, and access to financing.
- The top five major barriers to success cited by businesses surveyed were: the cost of doing business (labor, real estate, taxes, energy, etc.), availability of skilled workers, market demand, permitting/regulations, and cash flow management.
- Permitting/regulations (28 percent) and cash flow (23 percent) are the fourth and fifth greatest barriers to success for all firms. For growing firms, the rank order of these barriers was reversed, cash flow (23 percent) and permitting/regulations (18 percent).
- Cash flow; the need for new equipment, technology, process or efficiency; and obtaining financing are all mid-level barriers to success for all firms, and for all growing firms. These issues provide some evidence of the need for financing assistance by regional firms.
- The top five needs for business assistance among survey respondents were market and customer research, advertising and marketing, social media and website optimization, employee recruitment and training, and operations/strategic planning and leadership management training.
- Firms that anticipate needing financing in the next three years primarily plan to use it to purchase new equipment or technology, expansion or acquisition, or for working capital. Most firms surveyed who received financing in the past year received bank loans or lines of credit.

About the UMass Donahue Institute

The UMass Donahue Institute (UMDI) is the public service outreach and economic development unit of the University of Massachusetts President's Office. Established in 1971, the UMDI coordinates multi-campus initiatives that link UMass, other public and private higher education, and other external resources with the needs of government agencies, corporations, and nonprofit organizations. UMDI provides significant economic and public policy analysis, organizational development, training, education, financial management education, research, and evaluation to federal and state agencies, nonprofits, industry associations, and corporations. UMDI draws on its unique position within higher education to serve as a bridge between theory, innovation, and real-world applications.

The Economic and Public Policy Research (EPPR) group is a leading provider of applied research, helping clients make more informed decisions about strategic economic and public policy issues. EPPR produces in-depth economic impact and industry studies that help clients build credibility, gain visibility, educate constituents, and plan economic development initiatives. EPPR is known for providing unbiased economic analysis on state-level economic policy issues in Massachusetts and beyond, and has completed a number of industry studies on IT, defense industries, telecommunications, health care, and transportation. Their trademark publication is called MassBenchmarks, an economic journal that presents timely information concerning the performance of and prospects for the Massachusetts economy, including economic analyses of key industries that make up the economic base of the state.

Appendix A – Additional NETS Data Tables

The following tables provide additional information about the firms in the study group using the NETS dataset and the variables it offers. It is worth restating that the data in these tables represents a subset of the total firms in the dataset that were located in the Pioneer Valley and were in existence in 2010 (see Methodology for more details about the study group definition). These numbers should not be compared with other estimates of total establishments in Massachusetts or the Pioneer Valley, as they are from a secondary, proprietary database (NETS) and are also a subset of the total firms in that database, filtered by a number of parameters including business size, and industry sector.

Additionally, because the NETS data is based on responses to the Dunn and Bradstreet business survey, some variables in the data do not have complete coverage, meaning not all businesses answer all of the questions (for example, not all firms report whether they are minority or women owned). Therefore, in the tables that follow, certain variables should be used with caution when drawing conclusions about firms in the study group or firms overall in the region.

Business Size

Table A1: Study Firms by Employment Size Range in Pioneer Valley and Massachusetts, 2010

Employment Size Range	Pioneer Valley Firms in Study		Massachusetts Firms in Study	
	Number of Firms	Percent of Total	Number of Firms	Percent of Total
Size 250+	55	1%	685	1%
Size 100-249	207	3%	2,797	4%
Size 50-99	340	5%	4,389	6%
Size 20-49	1,221	19%	13,653	19%
Size 10-19	1,691	26%	18,583	26%
Size 5-9	2,799	43%	29,427	41%
Size 1-4*	245	4%	2,649	4%
Total	6,558	100%	72,183	100%

Source: National Establishment Time Series (NETS) Database, Walls & Associates

*Note: The size range 1-4 is included because it represents firms that had 5 or more employees in 2005, but who had employment declines from 2005 to 2010 that resulted in employment in 2010 below our study group parameters. Companies with declining employment were not the focus of this study.

Table A2: Study Firms by Employment Size Range and Employment Growth Tier in Pioneer Valley, 2010

Employment Size Range	Employment Growth Tier					Total
	Fast	Moderate	Slow	Stable	Decline	
Size 250+	9	2	0	40	4	55
Size 100-249	13	6	8	162	18	207
Size 50-99	28	13	12	258	29	340
Size 20-49	80	37	44	991	69	1,221
Size 10-19	91	42	40	1,402	116	1,691
Size 5-9	26	48	62	2,441	222	2,799
Size 1-4*	0	0	0	0	245	245
Total	247	148	166	5,294	703	6,558

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

*Note: The size range 1-4 is included because it represents firms that had 5 or more employees in 2005, but who had employment declines from 2005 to 2010 that resulted in employment in 2010 below our study group parameters. Companies with declining employment and companies in the 1-4 employment size range were not the focus of this study.

Table A3: Percent of Study Firms by Employment Size Range and Employment Growth Tier in Pioneer Valley, 2010

Employment Size Range	Employment Growth Tier					Total
	Fast	Moderate	Slow	Stable	Decline	
Size 250+	3.6%	1.4%	0.0%	0.8%	0.6%	0.8%
Size 100-249	5.3%	4.1%	4.8%	3.1%	2.6%	3.2%
Size 50-99	11.3%	8.8%	7.2%	4.9%	4.1%	5.2%
Size 20-49	32.4%	25.0%	26.5%	18.7%	9.8%	18.6%
Size 10-19	36.8%	28.4%	24.1%	26.5%	16.5%	25.8%
Size 5-9	10.5%	32.4%	37.3%	46.1%	31.6%	42.7%
Size 1-4*	0.0%	0.0%	0.0%	0.0%	34.9%	3.7%
Total	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %	100.0 %

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

*Note: The size range 1-4 is included because it represents firms that had 5 or more employees in 2005, but who had employment declines from 2005 to 2010 that resulted in employment in 2010 below our study group parameters. Companies with declining employment and companies in the 1-4 employment size range were not the focus of this study.

Business Location

Table A4: Study Firms by County in Pioneer Valley, 2010

Geography	Total Study Firms	
	Number of Firms	Percent of Total
Franklin County	701	11%
Hampshire County	1,400	21%
Hampden County	4,457	68%
Total Firms	6,558	100%

Source: National Establishment Time Series (NETS) Database, Walls & Associates

Minority Ownership

The NETS data is based on responses to the Dunn and Bradstreet business survey, and some variables in the data do not have complete coverage, meaning not all businesses answer all of the questions (for example, not all firms report whether they are minority or women owned). Therefore, in the tables that follow, certain variables should be used with caution when drawing conclusions about firms in the study group or firms overall in the region.

Table A5: Study Firms Indicating Minority Ownership by Employment Growth Tier in Pioneer Valley, 2010

Employment Growth Tier	Total Study Firms	
	Number of Firms	Percent of Total
Fast	12	7%
Moderate	5	3%
Slow	4	2%
Stable	129	70%
Decline	33	18%
Total	183	100%

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

Note: Not all firms report whether they have Minority ownership.

Women Ownership

Table A6: Study Firms Indicating Women Ownership by Employment Growth Tier in Pioneer Valley, 2010

Employment Growth Tier	Total Study Firms	
	Number of Firms	Percent of Total
Fast	34	4%
Moderate	28	3%
Slow	17	2%
Stable	646	77%
Decline	109	13%
Total	834	100%

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

Note: Not all firms report whether they have Women ownership.

Legal Status

Table A7: Study Firms by Legal Status

Legal Status	Total Study Firms	
	Number of Firms	Percent of Total
Proprietorship	917	15%
Partnership	380	6%
Corporation	4,623	77%
Non-Profit	48	1%
Total	5,968	100%

Source: National Establishment Time Series (NETS) Database, Walls & Associates

Note: Not all firms report legal status.

Table A8: Study Firms by Legal Status and Employment Growth Tier in Pioneer Valley, 2010

Employment Growth Tier	Proprietorship		Partnership		Corporation		Non-Profit		Total	
	# of Firms	% of Study Firms	# of Firms	% of Study Firms	# of Firms	% of Study Firms	# of Firms	% of Study Firms	# of Firms	% of Study Firms
Fast	16	7%	17	7%	198	85%	3	1%	234	100%
Moderate	12	8%	12	8%	117	82%	1	1%	142	100%
Slow	13	8%	10	6%	136	86%	0	0%	159	100%
Stable	778	16%	307	6%	3,659	76%	41	1%	4,785	100%
Decline	98	15%	34	5%	513	79%	3	0%	648	100%
Total	917	15%	380	6%	4,623	77%	48	1%	5,968	100%

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

Note: Not all firms report legal status.

Import/Export

The “import/export” variable in the NETS dataset indicates where a firm has answered the Dunn and Bradstreet business survey (which the NETS data is based on) to indicate whether they import products or services from or export products or services to overseas nations, or both.

Table A9: Study Firms Importing, Exporting or Both, 2010

Import/Export Status	Total Study Firms	
	Number of Firms	Percent of Total
Both Import and Export	51	13%
Export	147	36%
Import	210	51%
Total	408	100%

Source: National Establishment Time Series (NETS) Database, Walls & Associates

Note: Not all firms report an import/export status.

Table A10: Study Firms Importing, Exporting or Both, by Employment Growth Tier, 2010

Employment Growth Tier	Both Import and Export		Export		Import		Total	
	# of Firms	% of Study Firms	# of Firms	% of Study Firms	# of Firms	% of Study Firms	# of Firms	% of Study Firms
Fast	4	18%	7	32%	11	50%	22	100%
Moderate	3	17%	6	33%	9	50%	18	100%
Slow	5	22%	7	30%	11	48%	23	100%
Stable	30	11%	104	38%	142	51%	276	100%
Decline	9	13%	23	33%	37	54%	69	100%
Total	51	13%	147	36%	210	51%	408	100%

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

Note: Not all firms report an import/export status.

Table A11: Study Firms Importing, Exporting or Both, by Sales Growth Tier, 2010

Sales Growth Tier	Both Import and Export		Export		Import		Total	
	# of Firms	% of Study Firms	# of Firms	% of Study Firms	# of Firms	% of Study Firms	# of Firms	% of Study Firms
Fast	9	19%	17	36%	21	45%	47	100%
Moderate	4	9%	17	40%	22	51%	43	100%
Slow	18	14%	44	34%	69	53%	131	100%
Stable	0	0%	27	59%	19	41%	46	100%
Decline	20	14%	42	30%	79	56%	141	100%
Total	51	13%	147	36%	210	51%	408	100%

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

Note: Not all firms report an import/export status.

Industry

Table A12: Number of Study Firms by Industry (2-Digit NAICS) and Employment Growth Tier, 2010

NAICS 2-Digit	NAICS Description	Fast	Moderate	Slow	Stable	Decline	Total
11	Agriculture, Forestry, Fishing and Hunting	4	1	2	53	13	73
21	Mining, Quarrying, and Oil and Gas Extraction	0	0	0	3	1	4
23	Construction	29	13	17	408	63	530
31-33	Manufacturing	34	26	27	560	127	774
42	Wholesale Trade	26	11	15	318	47	417
44-45	Retail Trade	35	21	37	1,009	114	1,216
48-49	Transportation & Warehousing	6	3	4	162	19	194
51	Information	2	3	5	74	17	101
52	Finance and Insurance	16	9	6	279	33	343
53	Real Estate and Rental and Leasing	5	0	4	55	12	76
54	Professional, Scientific, and Technical Services	15	16	14	413	71	529
55	Management of Companies and Enterprises	0	0	0	2	0	2
56	Administrative and Support and Waste Management and Remediation Services	11	5	6	252	20	294
61	Educational Services	2	2	0	66	8	78
62	Health Care and Social Assistance	29	18	13	578	50	688
71	Arts, Entertainment, and Recreation	7	3	0	150	17	177
72	Accommodation and Food Services	16	9	9	587	46	667
81	Other Services (except Public Administration)	10	8	7	325	45	395
Total		247	148	166	5,294	703	6,558

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

Table A13: Percent of Study Firms by Industry (2-Digit NAICS) and Employment Growth Tier, 2010

NAICS 2-Digit	NAICS Description	Fast	Moderate	Slow	Stable	Decline	Total
11	Agriculture, Forestry, Fishing and Hunting	5%	1%	3%	73%	18%	100%
21	Mining, Quarrying, and Oil and Gas Extraction	0%	0%	0%	75%	25%	100%
23	Construction	5%	2%	3%	77%	12%	100%
31-33	Manufacturing	4%	3%	3%	72%	16%	100%
42	Wholesale Trade	6%	3%	4%	76%	11%	100%
44-45	Retail Trade	3%	2%	3%	83%	9%	100%
48-49	Transportation & Warehousing	3%	2%	2%	84%	10%	100%
51	Information	2%	3%	5%	73%	17%	100%
52	Finance and Insurance	5%	3%	2%	81%	10%	100%
53	Real Estate and Rental and Leasing	7%	0%	5%	72%	16%	100%
54	Professional, Scientific, and Technical Services	3%	3%	3%	78%	13%	100%
55	Management of Companies and Enterprises	0%	0%	0%	100%	0%	100%
56	Administrative and Support and Waste Management and Remediation Services	4%	2%	2%	86%	7%	100%
61	Educational Services	3%	3%	0%	85%	10%	100%
62	Health Care and Social Assistance	4%	3%	2%	84%	7%	100%
71	Arts, Entertainment, and Recreation	4%	2%	0%	85%	10%	100%
72	Accommodation and Food Services	2%	1%	1%	88%	7%	100%
81	Other Services (except Public Administration)	3%	2%	2%	82%	11%	100%
Total		4%	2%	3%	81%	11%	100%

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

Table A14: Number of Study Firms by Industry (3-Digit NAICS) and Employment Growth Tier, 2010

NAICS 3-Digit	NAICS Description	Fast	Moderate	Slow	Stable	Decline	Total
Total		247	148	166	5,294	703	6,558
111	Crop Production	2	0	1	37	12	52
112	Animal Production	1	0	1	10	1	13
113	Forestry and Logging	0	1	0	1	0	2
114	Fishing, Hunting and Trapping	0	0	0	1	0	1
115	Support Activities for Agriculture and Forestry	1	0	0	4	0	5
212	Mining (except Oil and Gas)	0	0	0	3	1	4
236	Construction of Buildings	6	4	2	106	12	130
237	Heavy and Civil Engineering Construction	7	1	5	44	6	63
238	Specialty Trade Contractors	16	8	10	258	45	337
311	Food Manufacturing	0	0	1	45	4	50
312	Beverage and Tobacco Product Manufacturing	0	0	0	5	0	5
313	Textile Mills	1	0	0	8	2	11
314	Textile Product Mills	0	0	0	9	4	13
315	Apparel Manufacturing	0	0	0	6	1	7
316	Leather and Allied Product Manufacturing	0	0	0	3	0	3
321	Wood Product Manufacturing	0	0	2	29	7	38
322	Paper Manufacturing	2	3	3	38	7	53
323	Printing and Related Support Activities	2	1	0	44	10	57
324	Petroleum and Coal Products Manufacturing	0	0	0	6	2	8
325	Chemical Manufacturing	0	0	0	24	2	26
326	Plastics and Rubber Products Manufacturing	3	2	0	34	9	48
327	Nonmetallic Mineral Product Manufacturing	2	0	1	21	5	29
331	Primary Metal Manufacturing	0	3	0	20	6	29
332	Fabricated Metal Product Manufacturing	10	5	7	108	32	162
333	Machinery Manufacturing	5	3	5	66	19	98
334	Computer and Electronic Product Manufacturing	3	4	3	18	2	30
335	Electrical Equipment, Appliance, and Component Manufacturing	2	2	0	10	3	17
336	Transportation Equipment Manufacturing	1	1	1	9	3	15
337	Furniture and Related Product Manufacturing	1	1	2	14	3	21
339	Miscellaneous Manufacturing	2	1	2	43	6	54
423	Merchant Wholesalers, Durable Goods	17	10	11	211	33	282
424	Merchant Wholesalers, Nondurable Goods	9	1	4	107	14	135
441	Motor Vehicle and Parts Dealers	9	2	5	127	11	154
442	Furniture and Home Furnishings Stores	2	1	2	42	8	55
443	Electronics and Appliance Stores	2	0	2	35	8	47
444	Building Material and Garden Equipment and Supplies Dealers	5	3	4	80	8	100

Table A15: Number of Study Firms by Industry (3-Digit NAICS) and Employment Growth Tier, 2010 (cont.)

NAICS 3-Digit	NAICS Description	Fast	Moderate	Slow	Stable	Decline	Total
445	Food and Beverage Stores	5	3	4	228	18	258
446	Health and Personal Care Stores	1	0	0	90	6	97
447	Gasoline Stations	0	1	3	55	15	74
448	Clothing and Clothing Accessories Stores	1	6	4	105	15	131
451	Sporting Goods, Hobby, Book, and Music Stores	3	1	2	70	8	84
452	General Merchandise Stores	1	1	6	44	5	57
453	Miscellaneous Store Retailers	3	0	2	84	11	100
454	Nonstore Retailers	3	3	3	49	1	59
482	Rail Transportation	0	0	0	3	0	3
483	Water Transportation	0	0	0	1	0	1
484	Truck Transportation	2	0	1	63	5	71
485	Transit and Ground Passenger Transportation	0	2	3	37	5	47
488	Support Activities for Transportation	2	1	0	31	6	40
491	Postal Service*	1	0	0	2	1	4
492	Couriers and Messengers	1	0	0	5	1	7
493	Warehousing and Storage	0	0	0	20	1	21
511	Publishing Industries (except Internet)	0	3	2	29	5	39
512	Motion Picture and Sound Recording Industries	1	0	1	8	3	13
515	Broadcasting (except Internet)	1	0	0	17	6	24
517	Telecommunications	0	0	1	9	2	12
518	Data Processing, Hosting and Related Services	0	0	1	11	1	13
522	Credit Intermediation and Related Activities	12	4	3	137	20	176
523	Securities, Commodity Contracts, and Other Financial Inve	0	1	1	20	4	26
524	Insurance Carriers and Related Activities	4	4	2	121	9	140
525	Funds, Trusts, and Other Financial Vehicles	0	0	0	1	0	1
532	Rental and Leasing Services	5	0	4	55	12	76
541	Professional, Scientific, and Technical Services	15	16	14	413	71	529
551	Management of Companies and Enterprises	0	0	0	2	0	2
561	Administrative and Support Services	10	4	5	223	18	260
562	Waste Management and Remediation Services	1	1	1	29	2	34
611	Educational Services	2	2	0	66	8	78
621	Ambulatory Health Care Services	21	15	10	437	33	516
623	Nursing and Residential Care Facilities	2	1	2	60	8	73
624	Social Assistance	6	2	1	81	9	99
711	Performing Arts, Spectator Sports, and Related Industries	5	0	0	28	3	36
712	Museums, Historical Sites, and Similar Institutions	0	2	0	14	5	21
713	Amusement, Gambling, and Recreation Industries	2	1	0	108	9	120
721	Accommodation	0	2	2	58	5	67
722	Food Services and Drinking Places	16	7	7	529	41	600
811	Repair and Maintenance	6	6	5	163	21	201
812	Personal and Laundry Services	4	2	2	162	24	194

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

Note: Sector 491 "Postal Service" does not include the U.S. Postal Service. The firms in this category appear to have incorrectly reported their industry (i.e. leasing firms categorizing themselves as postal service).

Table A16: Percent of Study Firms by Industry (3-Digit NAICS) and Employment Growth Tier, 2010

NAICS 3-Digit	NAICS Description	Fast	Moderate	Slow	Stable	Decline	Total
Total		4%	2%	3%	81%	11%	100%
111	Crop Production	4%	0%	2%	71%	23%	100%
112	Animal Production	8%	0%	8%	77%	8%	100%
113	Forestry and Logging	0%	50%	0%	50%	0%	100%
114	Fishing, Hunting and Trapping	0%	0%	0%	100%	0%	100%
115	Support Activities for Agriculture and Forestry	20%	0%	0%	80%	0%	100%
212	Mining (except Oil and Gas)	0%	0%	0%	75%	25%	100%
236	Construction of Buildings	5%	3%	2%	82%	9%	100%
237	Heavy and Civil Engineering Construction	11%	2%	8%	70%	10%	100%
238	Specialty Trade Contractors	5%	2%	3%	77%	13%	100%
311	Food Manufacturing	0%	0%	2%	90%	8%	100%
312	Beverage and Tobacco Product Manufacturing	0%	0%	0%	100%	0%	100%
313	Textile Mills	9%	0%	0%	73%	18%	100%
314	Textile Product Mills	0%	0%	0%	69%	31%	100%
315	Apparel Manufacturing	0%	0%	0%	86%	14%	100%
316	Leather and Allied Product Manufacturing	0%	0%	0%	100%	0%	100%
321	Wood Product Manufacturing	0%	0%	5%	76%	18%	100%
322	Paper Manufacturing	4%	6%	6%	72%	13%	100%
323	Printing and Related Support Activities	4%	2%	0%	77%	18%	100%
324	Petroleum and Coal Products Manufacturing	0%	0%	0%	75%	25%	100%
325	Chemical Manufacturing	0%	0%	0%	92%	8%	100%
326	Plastics and Rubber Products Manufacturing	6%	4%	0%	71%	19%	100%
327	Nonmetallic Mineral Product Manufacturing	7%	0%	3%	72%	17%	100%
331	Primary Metal Manufacturing	0%	10%	0%	69%	21%	100%
332	Fabricated Metal Product Manufacturing	6%	3%	4%	67%	20%	100%
333	Machinery Manufacturing	5%	3%	5%	67%	19%	100%
334	Computer and Electronic Product Manufacturing	10%	13%	10%	60%	7%	100%
335	Electrical Equipment, Appliance, and Component Manufacturing	12%	12%	0%	59%	18%	100%
336	Transportation Equipment Manufacturing	7%	7%	7%	60%	20%	100%
337	Furniture and Related Product Manufacturing	5%	5%	10%	67%	14%	100%
339	Miscellaneous Manufacturing	4%	2%	4%	80%	11%	100%
423	Merchant Wholesalers, Durable Goods	6%	4%	4%	75%	12%	100%
424	Merchant Wholesalers, Nondurable Goods	7%	1%	3%	79%	10%	100%
441	Motor Vehicle and Parts Dealers	6%	1%	3%	82%	7%	100%
442	Furniture and Home Furnishings Stores	4%	2%	4%	76%	15%	100%
443	Electronics and Appliance Stores	4%	0%	4%	74%	17%	100%
444	Building Material and Garden Equipment and Supplies Dealers	5%	3%	4%	80%	8%	100%

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

Table A16: Percent of Study Firms by Industry (3-Digit NAICS) and Employment Growth Tier, 2010 (cont.)

NAICS 3-Digit	NAICS Description	Fast	Moderate	Slow	Stable	Decline	Total
445	Food and Beverage Stores	2%	1%	2%	88%	7%	100%
446	Health and Personal Care Stores	1%	0%	0%	93%	6%	100%
447	Gasoline Stations	0%	1%	4%	74%	20%	100%
448	Clothing and Clothing Accessories Stores	1%	5%	3%	80%	11%	100%
451	Sporting Goods, Hobby, Book, and Music Stores	4%	1%	2%	83%	10%	100%
452	General Merchandise Stores	2%	2%	11%	77%	9%	100%
453	Miscellaneous Store Retailers	3%	0%	2%	84%	11%	100%
454	Nonstore Retailers	5%	5%	5%	83%	2%	100%
482	Rail Transportation	0%	0%	0%	100%	0%	100%
483	Water Transportation	0%	0%	0%	100%	0%	100%
484	Truck Transportation	3%	0%	1%	89%	7%	100%
485	Transit and Ground Passenger Transportation	0%	4%	6%	79%	11%	100%
488	Support Activities for Transportation	5%	3%	0%	78%	15%	100%
491	Postal Service*	25%	0%	0%	50%	25%	100%
492	Couriers and Messengers	14%	0%	0%	71%	14%	100%
493	Warehousing and Storage	0%	0%	0%	95%	5%	100%
511	Publishing Industries (except Internet)	0%	8%	5%	74%	13%	100%
512	Motion Picture and Sound Recording Industries	8%	0%	8%	62%	23%	100%
515	Broadcasting (except Internet)	4%	0%	0%	71%	25%	100%
517	Telecommunications	0%	0%	8%	75%	17%	100%
518	Data Processing, Hosting and Related Services	0%	0%	8%	85%	8%	100%
522	Credit Intermediation and Related Activities	7%	2%	2%	78%	11%	100%
523	Securities, Commodity Contracts, and Other Financial Investments and Related Activities	0%	4%	4%	77%	15%	100%
524	Insurance Carriers and Related Activities	3%	3%	1%	86%	6%	100%
525	Funds, Trusts, and Other Financial Vehicles	0%	0%	0%	100%	0%	100%
532	Rental and Leasing Services	7%	0%	5%	72%	16%	100%
541	Professional, Scientific, and Technical Services	3%	3%	3%	78%	13%	100%
551	Management of Companies and Enterprises	0%	0%	0%	100%	0%	100%
561	Administrative and Support Services	4%	2%	2%	86%	7%	100%
562	Waste Management and Remediation Services	3%	3%	3%	85%	6%	100%
611	Educational Services	3%	3%	0%	85%	10%	100%
621	Ambulatory Health Care Services	4%	3%	2%	85%	6%	100%
623	Nursing and Residential Care Facilities	3%	1%	3%	82%	11%	100%
624	Social Assistance	6%	2%	1%	82%	9%	100%
711	Performing Arts, Spectator Sports, and Related Industries	14%	0%	0%	78%	8%	100%
712	Museums, Historical Sites, and Similar Institutions	0%	10%	0%	67%	24%	100%
713	Amusement, Gambling, and Recreation Industries	2%	1%	0%	90%	8%	100%
721	Accommodation	0%	3%	3%	87%	7%	100%
722	Food Services and Drinking Places	3%	1%	1%	88%	7%	100%
811	Repair and Maintenance	3%	3%	2%	81%	10%	100%
812	Personal and Laundry Services	2%	1%	1%	84%	12%	100%

Source: National Establishment Time Series (NETS) Database, Walls & Associates; UMDI Analysis

Note: Sector 491 "Postal Service" does not include the U.S. Postal Service. The firms in this category appear to have incorrectly reported their industry (i.e. leasing firms categorizing themselves as postal service).

Appendix B – Survey Instrument

Pioneer Valley High Growth Business Survey

Hello, my name is _____. I am working with the University of Massachusetts and local economic development organizations including the Economic Development Council and the Small Business Development Center to survey Pioneer Valley businesses. The survey is part of an initiative to improve business assistance programs. Your responses will be used confidentially as background information to inform efforts to assist businesses in the region.

Your participation is completely voluntary and completing this survey will take no more than 15 minutes of your time. Your responses will be confidential.

May I continue? If no, please ask if there is a more convenient time to reach them.

I would like to begin by asking you a few basic questions about your business.

1. How many people do you currently employ, including yourself, but not including contract or temporary workers?

1.0_____

a. OPEN RESPONSE:

(If less than 5 or more than 500; politely terminate the survey.)

2. In the next three years, do you expect the number of your employees to:

2.0_____ **(Drop down menu)**

Increase
Decrease
Stay the Same
Don't Know

2.A_____

If increase, by how many employees: OPEN RESPONSE

3. I am going to read a series of statements about your sales growth expectations over the next three years. Please choose the one that most accurately fits your business.

3.0_____ **(Drop down menu)**

50 percent or more.
25 percent but less than 50 percent.
less than 25 percent.

I expect no sales growth.

I don't know.

4. Overall, would you currently rate your business' ability to innovate new products or services as excellent, good, fair or poor?

4.0 _____ (Drop down menu)

- Excellent
- Good
- Fair
- Poor

5. What is your company's **primary** market: local - Western MA, regional - Northeast, national or international?

5.0 _____ (Drop down menu)

- Local – Western MA
- Regional - Northeast
- National
- International

Now, I am going to ask you questions about the business climate and the availability of business assistance in the region.

6. Overall, would you currently rate the Pioneer Valley as excellent, good, fair or poor as a location for your business to succeed?

6.0 _____ (Drop down menu)

- Excellent
- Good
- Fair
- Poor

7. Please describe the extent to which the following factors have contributed to the success of your business. (Not a factor; a minor factor; a major factor)

		Not a Factor	A Minor Factor	A Major Factor
a	Market demand for products or services			
b	Access to suppliers and vendors			
c	Availability of skilled workers			
d	Management and			

	leadership capability			
e	Access to financing			
f	Innovation, product, and/or technology improvements			
g	Access to research and development collaborations			
h	Government relationships or policies			
i	Is there another major factor? Please describe.			

8. Please describe the extent to which the following are barriers to your business' growth. (Not a barrier; a minor barrier; a major barrier)

		Not a Barrier	A Minor Barrier	A Major Barrier
a	Market demand for products or services			
b	Need for new equipment, technology, process or efficiency			
c	Cash flow management			
d	Obtaining financing			
e	Availability of space for facility expansion			
f	The cost of doing business (labor, real estate, energy, taxes, etc.)			
g	Availability of skilled workers			
h	Access to suppliers and vendors			
i	Access to foreign markets			
j	Need for leadership or management training			
k	Access to research and development collaborations			
l	Permitting/Regulations			
m	Is there another major barrier? Please describe.			

9. Please tell me, yes or no, whether your business would benefit from any of the following types of business advisory assistance or training support, assuming that cost was not a factor.

		Yes	No
a	Accounting and bookkeeping		
b	Operations and strategic planning		
c	New product or service development		
d	Market and customer research		
e	Leadership or management training		
f	Employee recruitment and training		
g	Social media and website optimization		
h	Financial planning (projections, cash flow management, pricing)		
i	Business plan development		
j	Advertising and marketing		
k	Export assistance		
l	Managing risk		
m	Succession planning		
n	Networking with other businesses and sharing best practices		
o	Immigrant business owner assistance		

10. In the last year, have you been able to get the financing or credit you need to operate, grow, or improve your business?

10.0 _____ (Drop down menu)

- Yes
- No
- Have not sought financing or credit

If YES, go to #12

If NO, go to #11

If Have not sought financing or credit, SKIP to #13

11. If you were not able to get the financing or credit you needed, please tell me why. You can give up to three responses.

OPEN RESPONSE

11.a _____.

11.b _____.

11.c _____.

(If the respondent needs suggestions...)

Credit score
Cash flow constraint
Insufficient earnings, capital or collateral
Current outstanding debt
Loans are not available in the amounts needed
Personal guarantee required
Complexity of lending process

12. If yes, what type of financing did you receive?

OPEN RESPONSE

12.a _____.

12.b _____.

12.c _____.

(If the respondent needs suggestions...)

Personal, family, friends
Cash flow/business receipts
Bank loans or line of credit
Loan from a non-profit financial institution (e.g. Common Capital or a

community development corporation)
Government-sponsored loan (e.g. MassDevelopment, USDA, CDBG, SBA or other government guarantee)
Crowd funding
Factoring cash management/cash advance
Leasing
Equity or venture capital

13. Do you anticipate needing financing in the next three years?

13.0 _____ (Drop down menu)

Yes

No

Don't Know (coded response but not offered)

If YES, go to #14

If NO or DON'T KNOW, go to #15

14. What do you anticipate needing financing for in the next three years? You can give up to three responses.

OPEN RESPONSE

14.a _____.

14.b _____.

14.c _____.

(If the respondent needs suggestions...)

Equipment/Technology
Expansion/Acquisition
New Product or Service Development
Marketing/Advertising
New Property/Real Estate
Refinance
Workforce Training
Working Capital (such as receivables or inventory)